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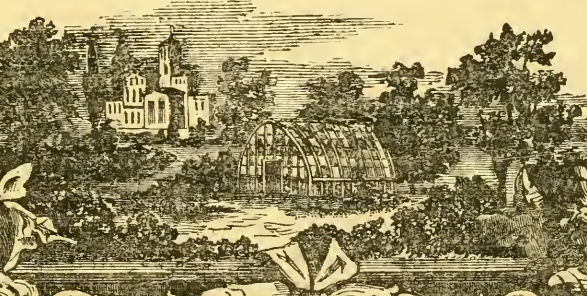
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THE GARDENER'S MONTHLY

DEVOTED TO
Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

JANUARY, 1866.

VOL. VIII.—NO. 1.

Hints for January.



FLOWER-GARDEN AND PLEASURE-GROUND.

We commence our eighth annual volume with the feeling of a novice new to his work. We direct the same pen, and the same page conveys our teachings to those who read; but the readers are not all of the olden time: and to all these new friends we feel as if we were starting on a fresh trial for their approval of our efforts to entertain and instruct them.

Yet much that we say in these chapters cannot be new. The soil and conditions that grew the best Cabbage last year, will very likely produce the largest and sweetest heads in this; and the Roses and the Violets which we taught how best to exhibit their beauty or deliver up their sweetness last year, may perhaps have this year not much to improve in these particulars. But this must not deter us from our task,—as the child who plays with its buttercups and dandelions, we must weave our materials over and over again. It may be the same buds and blossoms, and the fairy chain may be of the same length; but in the rearrangement of the material we hope to improve with each new experiment, so that we may reject what has become bruised by bad usage, and turn more towards the light such as before were badly seen.

So therefore, O gentle reader,—or reader of the sterner sex,—whether for the first time in your horticultural history, you propose to follow us through these coming pages, or whether you have already favored us with your company in the past,—young or old,—dweller in the North or South, in the East or West,—one and all, bound together by

the one bond of brotherhood: the love of fruits and flowers and trees and gardens; come along, and we will explore the wide field together, and if we find nothing to attract us as particularly new, we will at least enjoy again the familiar scenes that have so often spread out their innocent enticements for us.

But one word more before we go. Our periodical is a national institution. Our "Hints" therefore take the broadest ground. We cannot give "work for the month," unless we wrote for Pennsylvania alone; but keeping in view as we do our friends in every State in the Union, and beyond the Union to where the frost king's mandate has declared gardening shall no further go, what we write will partake rather of a suggestive than a didactic character, intended rather to set the intelligent mind towards seasonable thoughts, than to telling him in season exactly what he should do. We do not propose to hoe the row for him, but to put ourselves in his company, and entertain him somewhat while he hoes it himself,—remembering from our early experience that threshing works badly when there is only one at the flail.

So we will prepare at once for our new state of gardening existence, and we would again impress on our readers' attention the great interest a few changes in the minor details of arrangement give to a garden. So many new and useful hints for flower-garden details have appeared through our last year's volume, that our readers will, many of them, be prepared at once with plans of improvement. Ribbon flower-beds, peculiar for massing, improved forms of flower-beds, or their change of position to other parts of the lawn or grounds; the introduction of vases, arbors or trellises for climbing vines,—adding a clump of shrubbery here, or removing one there. All these and many other hints for improvement which we have suggested in our pages, should now be reviewed, and put into shape for execution the moment the approaching season favors. No matter how small the flower-garden may be, the aim should be to improve as we go, and make each season's garden look better than

the last. We never see a "finished place," but we know instinctively that the owners take no pleasure in it. Such parties feel they must "keep up appearances;" duty requires them to "look tidy," and family honor demands that some "pride be taken in the place." Hence the money must be spent—not exactly grudgingly, but yet with a species of wish that their position in society would demand less of them. We know from the experiences of various parties who have been "reformed from the error" of this way, that a desire to improve gives the owner of the oldest and most stately establishment a pleasure in its management, which it is almost impossible for him to conceive at the outset.

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

GREENHOUSES AND PLANT CABINETS.

Roses, when they are forced, do much better when the pots are plunged in some damp material. When no better plan offers, they may be set inside of a larger pot, with moss between the space around. All plants that come into flower through winter should have those positions afforded them that have the most sunlight, especially the early morning light.

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

Many very pretty ferneries are made up entirely of native ferns, some species of which are within the reach of every one. Of the exotic ones, how-

ever, that are now general in most florists' establishments, and are remarkable for their elegance and beauty, we may name *Selaginellas* (formerly *Lycopodiums*) *S. stolonifera*, *S. densa*, *S. Mertensii*, *S. denticulata*, *S. cordifolia*, *S. flabellaris*; *Adiantum concinnum*, *A. pubescens*, *A. eucantum*; *Pteris longifolia*, *P. serrulata*, *P. hastata*; *Polypodium Seiboldii*, *P. glaucum*; *Doodia caudata*, *Gymnogramma chrysophylla*, *Platyloma rotundifolia*, *Notholaena nivea*, *Pteris geraniifolia*, *Hemionites palmata*. This will form a good and easily obtained collection to commence with. Ferns are easily raised from seed. Shallow pans of very sandy soil should be procured and filled within an inch of the rim. The seed, which is obtained from the brown lines or spots (called, by botanists, *Sporangia*) on the under surface of most mature fronds, should be sown on the surface of the soil, well watered with a very fine rose, window-glass placed closely over the pans, to keep in the moisture and keep out small insects, and the pans themselves set in a heat of about 50°, when the spores will germinate in about two months.

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

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

It is better to keep in heat in cold weather by covering, where possible, than to allow it to escape, calculating to make it good by fire-heat, which is, at best, but a necessary evil. Where bloom is in demand, nothing less than 55° will accomplish the object; though much above that is not desirable, except for tropical hot-house plants. Where these

plants are obliged to be wintered in a common greenhouse, they should be kept rather dry, and not be encouraged much to grow, or they may rot away.

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

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

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

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

Communications.

VISIT TO THE ROYAL HORTICULTURAL SOCIETY GARDENS, AT KENSINGTON, LONDON, ENGLAND.

BY J. M., PHILADELPHIA.

During a recent visit to England I took the opportunity of inspecting some of the large Horticultural Gardens there, amongst others the above named. I noted some of the main points of interest to be seen there, and propose to give your readers some account of them.

Paying an admission fee of 6*d*. I passed with my friend, an English gardener, into the covered entrance of glass, the sides covered with a fine speci-

men of the *Cobœa variegata*, with the shoots probably 50 feet in length. Passing through a gallery of Statues we came out on the terrace overlooking the flower beds and grounds. The walls of the terrace were lined with *Jasminum nudiflorum*, *Lonicera aurea reticulata*, *Escallonia*, &c., with large tubs of *Laurestinas*, *Sweet Bays*, &c., trained as standards and placed at intervals along the side of the walk. Sculptured on the walls are specimens of different genera with names. After resting a while on seats provided, on the terrace, to enjoy the fine view of the flower beds below us in our front, we descended to the large Conservatory where again the *Cobœas* were used quite extensively, in fact it seemed to be the main climbing vine used, here it was trained from both sides of the roof; at intervals the long shoots would be let hang down and all pinched off at equal length, giving to them the appearance of green tassels. The building was mainly filled with large specimen *Acacias*, *Tree Ferns*, *Conifera*, &c., all appeared in excellent health. We now passed out to the flower beds which we were both anxious to see, as they are after all the main features in the English gardens in summer, they were in first-rate condition, and at the time of our visit in their prime. My attention was at once attracted by a beautiful bed in the distance, which my friend informed me I should most likely find to be the new *Geranium Mrs. Pollock*, which it proved to be, the bed edged with *Lobelia erinus*; this is truly a splendid *Geranium*, it is in the style of *Golden Chain*, but the leaves are much handsomer, having a beautiful horse-shoe leaf of dark crimson; early in the spring the florists find an easy sale for it from the beauty of its leaf alone, indeed it might be put in a collection of fine foliaged plants with good effect. A set of beds are laid out here, on the embroidery style, or *Nesfield's plan*, as it is called; that is to make the beds look as much like embroidery as possible.—They are getting into favor with the English, but, although looking very neat and pretty, are not so good for effect as the old style, to my mind. The *Geranium* seemed to be the main feature in the general display of flowers here, and truly they were beautiful, such sorts as *Stella*, *Lord Palmerston*, *Clara*, *Christine*, and a host of others, not forgetting the variegated kinds which offer more variety than almost any other flower. Another set of beds I saw were filled entirely with *Annuals*, furnished free of charge by *Hooper & Co.*, Seedsmen, *Covent Garden*, in order to practically set at rest the question of *Annuals* against *Perennials* for making the finest display.

After looking at the two set of beds, no one can have but the same opinion, viz.: that Annuals must take the second place of the two,—a more miserable set of beds than they were I never saw.

I took a look in to the Implement department, after looking at the beds. Machines of every kind and from every maker of note in the kingdom were here, giving to visitors an opportunity of inspecting the whole at once. Every thing needed in the Horticultural line is here, from boilers, miniature greenhouses, &c., to the spade.

A model of Ingram's Strawberry House which I saw, struck me as being well adapted in all respects for the culture of that fruit, from bringing the plants so near the glass on all sides.

Models of fruit, flowers, &c., in wax are arranged along one side of the building.

Some specimens of Pelargoniums, Fuchsias, Gardenias, &c., were remarkably well executed in regard to the habit of growth of each, but the leaves would not do at all, the Gardenia leaf would have been as much in place on the Fuchsia or Pelargonium as where it was.

All the new bedding plants as soon as they can be procured are tested here to see if they have any merits superior to the old. The Iresine Herbsti is being tested now. I liked the appearance of this plant very much, it will be a good companion for the *Coleus Verschaffeltii* and *Amaranthus Melancholicus*. I saw this plant in several gardens in England, the best I think were to be seen at the ground of St. Clare, the summer residence of Colonel Harcourt, near Ryde, Isle of Wight. It seems to require a somewhat moist and shady place to bring out its real color.

The plants above referred to were planted in such a situation, and were far superior to others, in the open beds where the sun could shine on them.

Of Verbenas, Purple King seems to be mainly planted; it is a deep purple, and very vigorous grower.

Of other bedding plants, I will, with your permission, speak of at another time; together with other things of interest witnessed at some of the other large establishments.

THE MULLEIN AS A SUBSTITUTE FOR HOPS.

BY MR. J. STAUFFER, LANCASTER, PA.

The article by D. R. King, Esq., "Substitute for Hops," refers to the use of the common weed (*Gnaphalium polycephalus*.) It is called in this section "Life-everlasting or Everlasting"—having

the peculiar properties of the hop for making yeast.

This property is also possessed by the common Mullein weed (*Verbascum thapsus*) which has frequently been substituted, boiled and used in the like manner as Hops, with entire satisfaction.

I mention this, through being suggested on reading the article referred to, as it may be new to some of your readers.

WHAT TO PLANT.

BY CHARLES REESE.

A few years ago a young friend of mine came to me for advice.

He was an ardent lover of nature, and had become so much enamoured with her beauty and attractiveness that he had purchased a few acres in the suburbs of a large city, and resolved to spend a portion of his time in the study of her ever-changing and altogether lovely face.

He was pecuniarily quite poor, but had an ample stock of energy and perseverance,—very good substitutes for capital; and felt sure he would succeed in whatever he undertook. He wished to know what to plant in order to get the largest and best return for the labor and money invested. I unhesitatingly replied plant on every hillside and in every valley, *fruits* and *flowers*: in every nook and corner, by shady wood and babbling brook, plenty of fruits and flowers; and my word for it, you will not regret it.

The boundless prairies of the west will furnish you with wheat, rye, oats and corn, for fifty years to come, for less than one half that it will cost you to raise them; and any attempt on your part to compete with them in the production of these crops, will surely end in failure.

The soil upon your farm is admirably adapted to the growth of fruits, and your proximity to a good market will be very advantageous to you.

Notwithstanding the astounding increase in the amount of fruit trees annually planted, prices are steadily advancing, owing to the largely increased demand for canning and otherwise preserving for shipment to foreign climes; and you will have ready sale for all you can produce; but you must give your whole mind to it.

You must study the wants and habits of each delicate seedling; rise with the lark; and with untiring energy, work, work, work, till the daylight fades in the west; be like the sunbeam and the sparkling dewdrop, ever ready to raise the tender vine and the drooping flower, and minister to their wants; and you will receive not only an abundant

turn in the shape of interest on your investment, but a reward richer than if all the wealth of the Orient was poured at your feet.

Language is totally inadequate to describe the peculiar emotions of pleasure that with telegraphic swiftness flash along the illumined chambers of the soul, when some new truth is unfolded, and spread out in all its glory before it.

It is not the heart and brain alone, that respond; but every nerve-wire in the whole system vibrates with intense delight, conveying to the outermost bounds of the spiritual as well as the natural organism the glad tidings that "unto us a son is born, unto us a child is given."

Who can measure the joy of a young horticulturist over his first ripe Bartletts, or Delawares, or Triomphe de Gands? I have known many hundreds of men associated together for divers purposes, clubs, committees, lodges, societies, &c., but there is always something wanting in their meetings; a new complicated piece of machinery may be before them; inventors, learned mechanics, scholars,—all look, wonder and admire; and with wise headshakes as to its success or failure, retire to their several homes, one jealous of the inventors power, another envious of his fame, another covetous of his wealth; all pent up, contracted, bound in the fetters of art, unable to move hand or foot except at her bidding.

How different is the farmers' club grouped round the table groaning with the treasures of the garden, the orchard, the vineyard? Eden is again the home of man, and he hears the voice of God calling to him in the cool of the day, "Adam where art thou?" Here are no inventions of men.

Look at these lilies: "even Solomon in all his glory was not arrayed like one of them;" and the genius of the mightiest on earth combined could not create a single blade of grass.

Here are no jealousies; no envious rivalries; all bow down at one common shrine to worship and adore the same God, a substantial and visible Creator, whose love and wisdom and power are manifested in every leaf and flower and fruit; and the feelings uppermost in every heart, are those of gratitude, thanksgiving and praise for all His benefits.

My friend was satisfied with the promised reward; and with all the ardor of a young enthusiast entered into the cultivation of fruits and flowers.

With each returning season his interest increased and his mind expanded beneath the genial influence surrounding him. Difficulties which at the outset seemed insurmountable, rapidly disappeared as the days of trial came.

Few persons are aware how rapidly the products of nature may be multiplied; and the handful of Strawberry plants which he set out five years ago, now number more than a hundred thousand. A dozen Delawares, Concords and Catawba grape vines, by carefully training and planting the cuttings, have increased to hundreds; and so on with Raspberries. Blackberries, Gooseberries, Currants, &c.; and as he walks up and down the long lines of trees and bushes and vines laden with their luscious treasures, he is one of the happiest men on the earth.

His little farm which has more than doubled its value, is the delightful resort of old and young; and from a very pleasant experience he is ever ready and willing to tell novices "*what to plant.*"

He says a large majority of fruit growers plant too great a variety.

It is much better to cultivate a few of each well, than a large number poorly; and he has reduced the long list recommended in some of the standard works, to the following choice kinds, all of which he has proved:—

Grapes—Delaware, early; Concord, medium; Catawba, late.

Pears—Seckel, Bartlett, Duchess d'Angoulême.

Apples—Belleflower, Newtown Pippin, Baldwin.

Peaches—Hale's Early, Crawford's Late, Heath Cling.

Strawberries—Triomphe de Gand, Wilson's Albany, Trollope's Victoria.

Raspberries—Marvel of Four Seasons, Hornet, Philadelphia.

Blackberries—New Rochelle.

Currants—Cherry, White Grape.

I know that many will think he has left out in the cold a great number of well established favorites; but the above will give such a variety that he who grows them successfully may have fresh fruits on his table every day in the year.

NOTE ON THE CHAUMONTELLE PEAR.

BY F.

The Chaumontelle pear, synonym of Bezi de Chaumontel (not *Chaumontelle*) is a fruit extensively grown in France, of first quality, large size, oblong, rather in the shape of Louise Bonne; ripens in December and January; grows rather horizontal, and the buds pretty far apart. Don't make fine pyramids, and when grown on quince is planted in espaliers at a very warm exposure;—that of the South being preferred. Contrary to most pears, this variety does also very well as a standard

tree on pear stock. The fruit is very much esteemed.

I do not see it here except it be grown under another name.

I have but one tree of it and a small one that I got from France last year; can mail you a few buds if desired.

The above description is from what I know myself of the fruit, but I just now find it summarily described by Duhamel as follows:

Bezi Ch., vigorous and exceedingly productive, melting, oblong, very large; of the very first quality if taken at the very moment of its maturity. November to February.

THE SCIENCE OF POMOLOGY.

BY P. B., ROCHSTER, N. Y.

Mr. Editor: Under this head you discuss the difficulties frequently experienced by Horticultural Committees in identifying varieties of fruits, and the existing evil of old fruits being introduced under new names.

I cannot see how you would hold either Pomology or Pomologists responsible for either of these evils.

It is by no means an uncommon thing for Agricultural and even Horticultural Societies to appoint fruit committees who are not familiar with the most common varieties. How can the Science of Pomology furnish these committees a substitute for experience? It is not so difficult a matter for Botany to explain the difference between the Strawberry, Raspberry and Blackberry; or between the Apple and Pear; but it would be impossible, in my opinion, for Pomology to describe the different varieties of the Apple, Pear, Strawberries, Raspberry, etc., so that novices might distinguish one from the other at a glance, on an exhibition table. I think the fault is more with the Committees than in the Science.

As to the "seedling nuisance," of which you very justly complain, I do not think Pomology responsible for it either.

The Pomological rule is, that "no new seedling fruit shall be entitled to a name, or to pomological recommendation, which is not at least equal to any similar varieties of the first rank already known, etc.

That no new fruit can be considered as definitely named until the same has been accurately described in Pomological terms, by a competent Pomologist or Fruit Committee, or until such description shall have been published in at least one horticultural or Pomological work of acknowledged standard character.

That before being named, the qualities of a new

seedling fruit should be decided by at least two seasons' experience," etc., etc.

If new seedling fruits were carefully subjected to these rules, old varieties would not so frequently be introduced as new ones; nor fruits of indifferent character as possessing wonderful excellence.

All rules, however, seem to be disregarded. Those who discover a new fruit, or a supposed new fruit, dispense with all ceremony, offer it for sale at a good round price, and it is disseminated as rapidly and successfully as though it were recommended by the highest pomological authorities in the land. Who is to blame for this? A credulous fruit-growing public; or, if not credulous, at least willing to be cheated rather than be behind in procuring a new variety.

This evil was almost as great 20 years ago as it is now, and like a great many others that cannot be cured must be endured. The public get cheated frequently, both by *new fruits* at home, and new fruits from abroad; but, in looking back over the last quarter of a century, the real acquisitions are so many and so valuable, that our numerous disappointments are almost forgotten. While it is to be regretted that so many errors or frauds are committed we must all rejoice at the existence of that spirit of enterprise which lends seedlings so much encouragement, and without which indeed errors could not be perpetrated. This is not offered, however, as an extenuation of the crimes of deception and carelessness both of which deserve severe censure; and I hope the Horticultural press will not be loth in bestowing it when deserved.

[We have often written seriously on the want of some better system of classifying fruits,—not so much that the novice might know at a glance the names of fruits, but that *we* who have some pretensions to pomological knowledge, might not so often be led astray as *we are*. The Editor of this journal does not even except himself. We thought a lighter article might attract attention, where the heavier ones have failed; and we are glad it has brought forth the very good suggestions of P. B.

Now to show the necessity of some better system. At a recent meeting of the Pennsylvania Horticultural Society, a set of three apples were presented to a company of *veteran pomologists*,—not novices. No one knew them positively. The writer of this pronounced one Rhode Island Greening, another *Teckesbury Winter Blush*, probably, and the other unknown. *They were all from the same branch of the same tree.* Some of the fruit were large and green, some small and rosy; some with green ribs, some with deep pink sutures; some with sweet

white flesh, others with sour yellow flesh; and so on. Yet, after the truth was made known, it was clearly seen that, amidst all these extraordinary variations of the same fruit, the calyx and calyx basin, the stems and stem basins, were so nearly alike in all, that they might be taken generally as the most fixed characters on which to found distinctions, in a system of classification.

If we can turn the attention of such superior pomologists as P. B. to the perfecting of some system by which we can do better than we can now, we shall not be sorry for any extra pleasantries we may have ever written.—ED.]

THE WINDS AND THE TREES.

BY WALTER ELDER, PHILADELPHIA.

Philosophers tell us that the winds gain velocity by unobstructed travel; and the fact is verified by the dreadful hurricane on the ocean, the raging tempest on lake and sea, the awful simoon on the African desert, and the furious tornado on the American prairies; all of which strew their paths with desolation, because there are no trees to check the violence of the winds. Even our sudden gusts in summer, when the air becomes too much rarified by heat, are often destructive of life and buildings.

All these besoms of destruction would be greatly modified could trees be planted in their paths. The trees getting the first strokes, and they being flexible, would bend before the blast, breaking its force and making it pass harmlessly over buildings or other stationary objects. The electric fluid, so destructive of life and property, also is attracted by trees, and conducted into the ground; and in fact, trees are the best protectors against all the natural destructive agencies with which man has to contend.

Another consideration as to the value of growing trees, is the fact that a *Park* of any size is warmer when belted and grouped with trees, in winter, and cooler in summer, which has been demonstrated by practical experience for centuries. Many fruiting and ornamental plants flourish when so protected, that would not live if exposed to bleak winds. Domestic animals, too, grow faster, thrive better, and give greater returns, if sheltered and protected by trees. Much better is it also to rest under their broad branches on a hot summer's day, or to be enlivened by their cheering green when all else is dull and cheerless.

A feeling of admiration and awe comes over me when I think of the wonderful wisdom shown in the forms and natures of trees to suit our various wants. If we plant trees with naked stems and

branchy heads to shut out unsightly views, the work is only half done, as we can see through and under their branches; but when we plant evergreens, whose largest branches are near the ground, they fill up the gap, and the work is complete. With fruit trees the same beneficence is manifest. We have to climb up trees to pick the large fruits, which when green are unfit for eating; while it would be tedious to pick Currants, and painful to pick the thorny Gooseberry and Blackberry did they grow upon trees.

We say, therefore, plant trees for shelter and shade, for embellishments to your grounds and adornment to the landscape; they are grand and ennobling to look upon, and their fruits and timber in a few year's growth will be as valuable as gold.

THE COUNTRY-SEAT OF F. J. YARNALL.

BY CHRONICLER.

The Country-seat of Francis Charles Yarnall, Esq., is situated on the Haverford Road, just beyond county line of Philadelphia. The pleasure-grounds are handsomely laid out, choicely stocked, and kept in a praiseworthy style by the gardener, Mr. Allen Barr. Nearly all the trees and shrubs, which were first set promiscuously over the grounds, have been transplanted into groups. The lawn is kept smooth by the mowing-machine, and the effect is admirable. The shrubs are so arranged that some with showy blooms and some with fragrant flowers are mixed in every group, which are placed along the sides of the walks. The many evergreen trees that are planted in groups, have been skillfully pruned and trained. A number of artfully formed small flower-beds are cut upon the lawn, and filled with choice flowers. The variegated Petunias, both double and single, are the finest I have ever seen, and are all seedlings, raised by Mr. Barr.

The kitchen garden is enclosed on two sides with Maclura hedges. The vegetables were all of luxuriant growths; and the specimens grown for seed were models in their way. In it were several rows of Pear trees, which were heavily laden with fruit and of the most luxuriant growth, which is no doubt owing in a great measure to their being well protected.

The foreign Grape vines in the grapery are vigorous, thrifty and fruitful; and the house is kept in the cleanest and most tasteful manner.

Taking all things into consideration, I do not know of any place around Philadelphia, of the same extent, more tastefully improved or admirably kept.

FORMATION OF DEW.

BY A. FENDLER.

As the object of an article in the October number of last year of the *Monthly*, on "The Theory of Dew, by B. Young Contributor," is to elicit some further remarks, tending to reconcile the supposed discrepancies between theory and fact, I thought the present a fit opportunity to review this interesting subject somewhat more thoroughly.

The explanation copied by B., from a magazine, although in its general outlines nearly correct, is in some points deficient. Nor does it go quite far enough into the nature of radiation; and by the omission of a few simple explanations, leaves the reader in doubt about the correctness of the whole theory; as it was bound to do with the inquiring mind of "Young Contributor." Credit is due to him for searching after truth by making observations with the thermometer as to the temperature of the ground; but he ought not to allow himself to be carried at once into a vague hypothesis, resting on an agency rather too insufficiently known in its connection with the earth's surface. If we were not enabled to explain the formation of dew by any other means save that of electricity, then indeed would it remain a mystery, not only for the present but for all time to come.

Science has already established a theory of formation of dew on such a firm and true basis, that we need not go in search of new theories.

In the first place it is necessary for us to know the fundamental property of heat and the manner in which it is transmitted, especially when leaving the earth's surface in its onward course to the free space of the universe, that is in the direction of the sky.

Not to encroach upon your valuable space and time, I shall endeavor to be brief, and not go into a lengthy dissertation of what heat or caloric really is. There are two different views on this subject. The one considers caloric as an *imponderable matter*, the other as a mere *vibration* of an *ether* inconceivably thin and filling the whole space of the universe. These views, however, have no bearing on our subject, as the properties and effects of caloric are the same, whatever view is adhered to. Both must recognize, as the great fundamental property, inseparable from the idea of caloric, that unconquerable tendency to *go outward* in all directions to spaces and objects of less caloric,—either by the repulsion of its own particles, according to one view, or by vibratory propulsion, similar to that of sound, according to the other.

By this tendency caloric is propelled onward from

its different sources, and from all bodies containing heat. This transmission of heat manifests itself to our sense in two different ways: First by *contact* with a body hotter or colder than our own. In this case, we say heat is conducted. If, for instance, we hold one end of a short iron rod into the fire, the heat will gradually pass from that end towards the other, until it reaches the hand. Thus a hot stove heats the air of a room by transmitting its caloric successively to the layers of air in immediate contact with the sides of the stove, and this air, when so heated, coming in contact with our body, warms us.

But when, instead of a stove, we make use of an open fire place, or a glowing fire in the open air, we feel the heat even at a considerable distance from the fire, although the air intervening between our body and the fire may be far below freezing point. Hence this is not warming by contact with warm air, but by *radiation* in straight lines from the source of heat in all directions.

In radiating, heat passes through air scarcely warming it at all, through water without warming it to any considerable extent; but by bodies more or less opaque, it is either reflected or it is stopped in its course by absorption.

In cloudy weather radiation from the earth's surface can go on but very languidly, because the clouds possess already a certain degree of caloric. The greater the difference of temperature is between the radiating object and the object radiated to, the more readily can caloric follow its natural tendency to fly off, and the more speedy will be its travelling. When the sky is heavily overcast by thick strata of clouds of a temperature not much below that of the earth's surface, radiation from the latter may be said to amount to next to nothing.

Radiation of caloric takes place even from bodies of extremely low temperature, if the space beyond, or the objects therein, are still colder. Even the ice and snow of the polar regions radiate caloric in clear weather towards the unlimited spaces beyond the atmosphere: for these spaces have at all times infinitely less caloric than the polar regions. Arctic travellers have found the surface of the snow nearly 16 degrees F. colder than the atmosphere, with the latter at a temperature 4° below zero.

It can be demonstrated by an extremely sensitive apparatus called Melloni's Thermo-Multiplier, that a piece of ice placed into the focus of a concave mirror, raises by *radiation* the temperature of the multiplier as long as the latter is kept at a temperature still lower than that of the ice.

By the same apparatus it has been found also,

that it is chiefly the condition and material of the *surface* of a heated body, which determines the power of its radiation. So, for instance, a bright polished surface radiates much more slowly than one that is rough, black and rugged. If a hollow cube of metal, filled with hot-water, has one of its sides coated with lamp-black, or soot, another side bright and polished, then it will be found by Melloni's Thermo-Multiplier, that the latter surface radiates only one-eighth the amount of caloric of what the black surface does. Hence it is that a bright metal tea-pot filled with hot fluid-keeps its heat much longer than when rusty or black with soot; which fact may be taken advantage of in winter. Especially fast and freely does heat radiate from sharp-pointed and sharp-edged objects, such as blades of grass and margins of leaves.

The radiation of the earth's heat does not and cannot take place from *below* the surface; it must necessarily proceed from the extreme film of the surface, from the uppermost particles, those that are in immediate contact with the *free* atmosphere, and directly face the unobstructed and unlimited space towards the sky.

The principal conditions for the most energetic radiation, and the cooling of the surface are, in the first place, a perfectly clear sky, without any clouds or cloudy horizons, which by its deep azure tint gives proof of a pure transparent atmosphere, not laden with any large quantities of moisture and vapor.

In the second place a *calm* atmosphere—for in windy weather the motion of the atmosphere acts as an obstruction to radiation, in a similar manner as the clear but restlessly moving-waters of a wind-beaten lake hinder the rays of light from penetrating undisturbed to the bottom and back again to our eyes. For, when the wind is hushed, and the agitated waters have assumed a quiet and smooth surface, those mysterious messengers,—the rays of light,—go and come undisturbed from the pebbles below, and tell the inquiring eye what that bottom consists of, if the depth is not too great. In the one case the cause of hindrance is the irregular, violent motion of transparent water, in the other that of transparent air. It is, however, only a partial hindrance, and not a complete obstruction.

In the third place, the configuration, nature and condition of the earth's surface, and the more or less freely radiating capacity of the objects immediately resting upon it, is of much importance, for all bodies do not radiate heat equally free. From a smooth sheet of water radiation will proceed but slowly; but from a dry, high pebbly or gravelly

region clothed with nothing but grass and narrow-leaved herbs,—from such regions, for instance, as our high Western plains towards the Rocky mountains, 6 or 7000 feet above the level of the sea,—the most energetic radiation will take place. Here the mass of the atmosphere is less by one-fifth of its whole weight, the air is more rarified and dry, and hence allows an easier passage to the rays of caloric. Besides this, the whole region is one vast prairie, where the thin erect blades of grass and the other narrow-leaved herbs are the very objects to speed the exit of caloric.

So much for radiation. Now for its cooling effects. *(To be continued.)*

ELLISDALE RASPBERRY.

BY H. A. TERRY. CRESCENT CITY, IOWA.

In your October number of last year, I notice an article in relation to the *Ellisdale Raspberry*, and as the article contains some errors, I wish to correct them.

In the first place allow me to say that this Raspberry was discovered by J. E. Johnson, Esq., formerly of this place, growing on his *Ellisdale* farm, and was by him placed in the hands of the writer for propagation. A single plant only was found, and its origin is a mystery. The plant has the habit of the common Black Cap, and *propagates from the ends of the shoots, but never suckers*. The stools frequently grow in such a shape that they may be parted and divided sometimes into from two to four or five plants each; but it never suckers properly like the Antwerp class of Raspberries. It propagates very sparingly, which accounts for the very small stock in existence, though it has been in process of propagation about eight years.

Mr. Thompson procured his plant from me; but if he has reference to the true *Ellisdale*, he will find that with care it can be propagated from the ends of the shoots, but it cannot be multiplied with the same rapidity as can the common Black Cap.

It is perfectly hardy, even more so than the improved Black Cap, and is a more rampant grower than any of that class. I have canes now that measure two and a quarter inches in circumference, and fourteen feet in length. It is fine for training on trellises. The quality of the fruit I consider unsurpassed, (and I cultivate Brinckle's Orange), by any of the Antwerp class of berries, though we find in that class some varieties that are a trifle larger than the *Ellisdale*, but taken as whole, it is the most valuable Raspberry that I have met with.

[We are glad to have this further account of this

fruit,—as we figured the berries from a plate sent us by Mr. Thompson, entirely from the idea that a *thoroughly native Raspberry*, of the appearance indicated by the plate, ought to be a good thing, and by figuring it in our paper we hoped to bring out more information about it.—ED.]

NOTE OF A VISIT TO EDINBURGH BOTANICAL GARDEN.

BY H. W. SARGENT, ESQ.

Mr. Editor: I shall take advantage of a rainy day (the first we have had for six weeks) to write you from this ancient city of York, some account of the Botanic Garden at Edinburgh,—the Palm house containing specimens of plants more wonderful than I have ever yet seen in any parts of the world. Most of these plants have been cultivated here over forty years, and being well kept and carefully attended to, are certainly very remarkable. The most impressive are two specimens of *Sagus Rumphii* (Sago Palm), one being 67 feet high and the other 48 feet, the trunks quite as large round as a stout man's body, and towering up nearly to the top of the house, which is 70 feet high. The next most striking objects are two splendid specimens of the Ball Palm (*Sabal umbraculifera*) from the West Indies, about 30 and 40 feet high, with magnificent spreading heads of 20 to 30 feet. These, as well as the Date Palm, are cultivated in tubs, 10 feet high, by 6 and 8 feet broad.

There were two or three plants of *Seaforthia elegans*, 25 and 30 feet high, which were very striking and beautiful. A *Pandanus odoratissimus*, 56 feet high, and two Bamboo canes, 50 and 72 feet high,—the latter 2 feet higher than the house, but bent down, really made one feel they had got among the jungles. *Phœnix sylvestris*, with a head 20 feet in diameter. *Euterpe montana* (Cabbage Palm) 60 feet high; and *Swietenia Mahagoni* (Mahogany Tree), 58 feet, were all wonderful specimens.

There is also here a most charming specimen of *Dacrydium cupressinum*, looking like a refined *Cryptomeria*, but much more delicate in its long slender pendulous branches, and which I cultivated at Wodenethe for many years, until a cold winter killed it, and I have never yet been able to replace it,—in fact, have never seen another specimen until this. *Dacrydium Franklinii* will stand pretty well, both as resembling very much *Saxe Gothœa conspicua*, and even *Taxus monstrosa*.

The house was filled, besides those plants I have already mentioned, with admirable specimens of *Dicksonia antarctica*, *Corypha australis*, *Chamærops Fortunii*, the extraordinary *Hemp Palm*, fine

plants of *Araucaria Cunninghamii*, *excelsa*, *Lobbii*, and *Bidwellii*.

In the gardens, and especially the arboretum and pinetum, the collection is very large and excellent. Among the Hollies were a new weeping one from Melrose; *Ilex Thumbergiaefolia*, very small and minute leaf; *Ilex Regina aurea*, a beautifully golden color; *Ilex atrovirens*, immensely large and dark leaf; *Ilex pendula aurea*, a new weeping golden, and also a new weeping silver, were charming in contrast; as well as a new Holly from Perth, called Moonshine. A new weeping Silver Willow, with leaves almost white, called *Salix Reginae*, was exquisite. Some fine specimens of Weeping Ash, worked up 30 feet high, were very striking as a great improvement on our American method of grafting them 6 or 7 feet high.

Among the Evergreens, which though small were healthy were *Picea excelsa*, 30 feet; *Albertiana*, like our Hemlock; *robusta*, very fine; *Lowii*, robust strong leaf; *bracteata*, an improvement on the Douglass. Among the Pines were *Pinus nobilis*, as we call it, 40 feet high, and very pendulous, but thin, not at all resembling Mr. Downing's account of it 20 years ago,—“a gigantic Balsam Fir,” as he called it; *Pinus Van Couverci*, *Celicia*, *Edgariana*,—these three, generally resembling *Benthamiana*, and no doubt were of the Austrian family. There was also a fine *Picea*, called *Van Carneo*, resembling *amabilis*.

The collection of Yews and Thujas was very perfect. *T. Lobbii* was the prettiest as well as *T. uncinata*, *T. gigantea* and *Craigeana*—the same we have in America—were splendid specimens, 8 to 10 feet high, but much denser and more luxuriant, as in fact were all the Evergreens, than we grow them. Some fine, well formed, symmetrical *Wellingtonias*, about 12 feet high, and *Araucaria imbricata* 10 ft. Among the *Taxus Harringtonia* was the finest, with a large leaf resembling a *Podocarpus*. There were good specimens of all the varieties known in America, like *Dovastonii*, *microphylla*, *monstrosa*, *aurea*, *elegans*, etc.

The gardens, about 17 acres, were admirably well kept,—everything scrupulously neat; but the lawns, as I have found them everywhere, abounding in daisy and dock.

I might, perhaps, mention here one or two things which struck me at Knowlsley Park, the Earl of Derby's, near Liverpool. The best late Grapes for hanging were *Lady Downe's*, and *Black Alicant*—they have also here, and I have seen it nowhere else, a magnificent new seedling, called *Worsley's Seedling*, the largest berry and bunch I have ever

seen; of a beautiful pink and white color, not unlike the Reine des Nice, and said by the gardener to be a very excellent Grape,—and also a new Muscat, resembling the Cannon Hall, though larger, called *Escholata*.

Humea elegans is much used as a centre plant in round flower beds. Every thing however is in ribbons, composed of a few varieties—*Lobelia*, *Centaurea candidissima*, or variegated *Alyssum*, *Perilla Nankinensis*, Tom Thumb and White Geraniums.

York, England, Oct. 12th, 1865.

HORTICULTURAL EDUCATION.

BY WM. SAUNDERS, ESQ., WASHINGTON, D. C.

Read before Pa. Horticultural Society, Nov. 7, 65.

The subject assigned to me for introduction is one of great moment, and in conjunction with Agricultural Education, which may be regarded as a synonym, is now receiving more attention than at any previous period. As I believe it is not the purpose of the Society to encourage elaborate essays, I will simply bring the subject before the meeting by a few general remarks.

The first step in the acquisition of knowledge is a desire to know; fortunately this desire is strongly impressed upon the minds of mankind, and this natural aspiration has only to be encouraged, enticed by that which is pleasant and attractive, and brought in connection with that which is useful, and learning will follow as a natural consequence.

In obtaining a knowledge of any branch of natural history there are two modes that may be adopted and followed, either as distinct, or in various degrees of combination. The first of these is by direct personal observation of the subject, examining it as a tangible object, and from the ocular demonstrations thus obtained, thus endeavor to draw such conclusions as are warranted by the facts, and connecting them into rules of action so far as the previous knowledge of the investigator will admit. Knowledge thus acquired leads at once to conviction, because there is no necessity for weighing the testimonial evidence of others, or any trouble in deciding between truth and falsehood, or between certainty and probability.

But life is so short, and the boundary of knowledge so extensive, that direct personal observation will furnish us with only a very limited portion of that which is necessary to know. Especially is this the case in natural history, because a proper understanding of one portion depends upon a knowledge, more or less extensive, of many others. Hence we must have recourse to the observations

of other investigators, either oral or recorded, and this second-hand information forms the second general mode of acquiring knowledge.

One mode of obtaining this information is through the medium of books. In them is combined the knowledge of former ages, compiled and systematized so that we can learn at a glance what a life time of observation might fail to accomplish.

Book learning is sometimes spoken of in a depreciative manner, but only by those who are unaware of the true source of knowledge. Books are the store-houses into which are gathered all the mental productions of the past, and of which all may partake and be refreshed.

Metaphysicians have shown that there are certain faculties, or as they express it, elements of knowledge, which must exist in the mind *a priori*, in order to our forming a judgement upon any subject or object. The Horticulturist above all other professors must possess varied knowledge before he can be uniformly successful in his cultural operations. He must be conversant with the principles of culture, and before he can see the rationale of his labors he must have a knowledge of the laws, the definite and unvarying principles of physical science. The field of study thus becomes of immense magnitude. How plants grow, how they feed and what they feed upon—why some are fruitful while others are barren—the exact specific relations that exist between them and the soil upon which they are growing, and the various developments induced by the unequal distribution of the elements of growth, are the subject matter of physiology—a science that comprehends a knowledge of Botany, Chemistry and the general principles of Natural Philosophy. The constituents of soils—their numerous combinations and the sources from which they are produced, are taught by Mineralogy and Geology. Economy of labor depends upon the skillful application of the laws of Mechanics. A knowledge of the laws of Hydrostatics and Hydraulics is necessary before we can understand the science of draining or provide for its proper application or execution. To guard against attacks of insects, and repel those that have found a lodgment, involves an acquaintance with Entomology, and the complicated influences of climate brings him in contact with Meteorology. In short, there is no branch of knowledge, but what will contribute to his aid,—all are valuable, and may be productive of suggestions applicable to some one or other of his varied pursuits. And he will constantly be encouraged in his pursuit of knowledge.

Every step that he advances will open to his view wonders previously unsuspected. Not a height does he gain from which his prospect is clearer and more extensive, but his ideas of these wonders acquire a yet more surprising vastness. Every thing in nature that arrests his attention by the grandeur of its greatness, charms him with the simplicity of its modes of operation. The more he knows the more he desires to know, and the further he advances the more does he perceive how much delight is yet in store for him. It is an immense stride in the march of mental improvement when we become conscious of our own ignorance.

In pursuing studies of this nature we not only find that "knowledge is power," but also that knowledge is happiness.

There is an unfortunate impression in the minds of many, that science is something antagonistic to practice, that there must be a line of distinction between the practical man and the man of science.

Science is simply knowledge systematized; therefore the man of most science is the man of most knowledge; but knowledge to be useful to the cultivator must be rendered of practical application, and herein lies the barrier to progress. Not that the scientific man is of necessity not practical, but that, so far as scientific cultivation (so called) is concerned, we have not yet a recognised educated class that can apply this systematized knowledge practically and directly to the wants of man.

This is the education that Agricultural Colleges propose to impart, but the best mode of doing so is still a matter of suggestion and experiment. Institutions of this character are springing up in every State; there seems, however, to be widely different opinions as to the best mode of conducting them. Those that are in operation do not succeed in fulfilling expectations so far as concerns the practical operation of the revelations of scientific investigations to the products of the soil. I have no fear of contradiction by remarking that the best managed and most profitable farms are not those attached to Agricultural Colleges. It is acknowledged that they come very far short in this respect. These then cannot be very good schools for acquiring knowledge in practical agriculture, neither can it be wholly taught inside the walls of a college. But that it ultimately will be successfully accomplished there can be no reasonable cause for doubt.

We have abundant evidence of the practicability of one man combining a thorough knowledge both of the principles and practice of his profession.—

What, for example, would be thought of a physician who, when called upon to prescribe for a patient, could only do so by entertaining him with a lengthened exposition on the theory of medicine, show him an extensive catalogue of drugs, attempt to explain the importance of analysis, &c., without being able to apply this knowledge to the case before him? On the contrary his education enables him to apply his science or knowledge in alleviating the "ills that flesh is heir too." He is but a sorry practitioner who has not studied the principles upon which the art of healing is founded; but not more so, perhaps, than the cultivator of the soil who is ignorant of the fundamental laws that govern *his* operations.

It has long been a favorite idea of mine that an establishment for horticultural education could be so organized and conducted as not only to be self-supporting, but prove to be a profitable investment; and that too without demanding any charges from the students except their labor in conducting the necessary operations, the products of such labor defraying the whole expenses of the institution. The entire routine operations of nursery, orcharding, exotic fruit culture, and plant and flower growing would be embraced, with scientific demonstrations of the principles forming the basis of the practice followed. This would form a plan of instruction of which young men would gladly avail themselves on such easy terms, and the commercial value of the products would more than suffice to meet all expenditures. The feasibility of such a plan I consider to be beyond doubt.

It cannot have escaped observation that, in many instances, amateur cultivators have succeeded in arriving to great perfection in their undertakings, and many valuable suggestions, as well as striking practical results have emanated from those who are pleased to designate themselves as *novices* and *tyros* in horticulture. Illustrative examples of this class can be found in all societies, and in none, probably, more than your own; to them in no small degree are such societies indebted for success. These are the patrons *par-excellence* of horticulture; they bring to the consideration of the subject, minds trained to close observation of cause and effect, not wedded to particular prejudices or scholastic forms and rules, give a patient hearing to all questions, examine and weigh all arguments, not putting implicit faith in any *dictum*, but "try all things and hold fast to that which is good."

One of the most certain modes of encouraging a taste for horticulture and its associations in young minds is that of embellishing school-house grounds.

"Train up a child," says the wise man, "in the way he should go, and when he is old he will not depart from it." Recognizing the same influence, Paul, the eloquent apostle, enjoins parents to bring up their children in "the nurture and admonition of the Lord," which implies a probable expectation that a pious education will lay the foundation for a pious character. I have a belief that those who have early instilled in their minds a love for flowers and music are incapable of committing a moral wrong. The deepest impressions are made in early life and I believe the time will come when the proper embellishment of school-house grounds will be considered quite as essential as the choice of a teacher.

The practice of horticulture is perhaps the most attractive of all operations. God has implanted in the breasts of all mankind a natural desire to cultivate and admire the products of the earth, from the artless prattling child, who with outstretched hands seeks to pull the brightest flowers, to the aged invalid who goes leisurely forth to inhale the fragrance of the meadows and enjoy the refreshing influence of the balmy breeze. The force of circumstances, the love of power and wealth may confine men to crowded cities, but as these actuating passions subside, and the day of life passes its meridian, the desire for the quiet calm of rural enjoyments becomes stronger and the evening of life is passed in the contemplation of nature as presented in fields and gardens. It affords us a gratifying hope for the future when we observe that such pursuits as bring men in contact with these ameliorating influences are increasing in popularity.

DRYING SEEDS BEFORE SOWING.

BY J. C. T., SPRING STATION, KY.

I noticed on page 245 in the August number of the *Monthly*, that J. M. J., St. Louis, Mo., asks if seeds that are matured in moist fruit, like the Apple, Pear, or the Osage Orange, grow without first getting dry before planting.

Apples and Pears thrown out in a heap under a tree will sprout in spring very readily.

With regard to the Osage Orange, I have been very successful, in fact, I think nearly every seed grows.

My mode of procedure is this:—The first of November I gather the Oranges, put them into a hole where they will be dry, lay a few inches of straw over them, put a few clapboards over that to keep the rain and snow out. The last of Febru-

ary I take them out, beat them to a pulp with a mull, throw them in a heap to decompose; after a few days turn the mass, stir it well with a fork—throw it again into a heap—follow up this treatment until it is so decomposed that it will readily separate. Then, weather permitting, prepare the ground, draw wide, shallow furrows with the hoe, scatter the mass with the hand along the furrow; cover with the hoe, and smooth the top of the furrow with the rake.

THE NEW TOMATO—"TILDEN."

BY SWIFT.

Form oblong, perfectly smooth; flesh firm, and solid throughout; fruit uniform in shape; said to hang longer on the vine when ripe without rotting than is generally the case with other varieties. It is very much like a Tomato I received from Ohio in 1862, under the name of "Lester's Perfected," so much so that I consider them identical. The flesh of this Tomato is very sweet, without that peculiar *soapy* taste so common to other Tomatoes when a little too ripe. I tasted the "Tilden" at the August meeting of the Pennsylvania Horticultural Society, and also Mr. Felten's, and found a decided difference in flavor altogether in favor of the "Tilden."

Mr. Harrison has kindly sent me a package of seeds of the "Tilden" of which I intend to plant largely next season. Should this Tomato retain the same good qualities in the hands of other growers, that Mr. Harrison has been so successful in bringing out, it will be the richest acquisition to the vegetable garden that we have had introduced amongst us for many years past.

AN OBSERVATION ON PEACH BORER.

BY J. H. CREIGHTON, CHILLICOTHE, OHIO.

I notice that the Peach borer (*Ageria exitosa*) congregate in great numbers on the Parsley beds (*Apium Petroselinum*.) You will see more of these Russians on a bed of Parsley, at one sight, than you would see in a Peach orchard in a whole season.

Now it occurs to me that they might be captured and the Peach tree greatly beautified.

If any of your readers have ever observed this let them speak.

The Gardener's Monthly,

PHILADELPHIA, JANURRY, 1866.

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

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PRESERVATION OF CUT FLOWERS.

Few things of recent discovery have attracted more attention than the method of preserving fruits, discovered by Mr. Nyce. That this has been done so completely, is owing as much to the large scale on which the experiment has been tried, as to the merits of the plan itself.

The demand for cut flowers is now becoming so annually increased, that it would well repay some enterprising individual to devise some means by which they may be grown by the natural heat of summer, and stowed away in some preservative place for winter use, as fresh and fragrant as when just cut from the parent stem.

There is no more difficulty to be encountered than in preserving fruits. Formerly, those who would have choice fruit in the winter, had to have expensive forcing houses for winter growth. The enormous expense but added greater zest to the luxury; but until Mr. Nyce showed how to preserve fruits so well, none could be kept well enough to compete favorably with forced fruit,—and even yet it probably is not good enough to drive forcing of fruits completely out of practice, especially in view of the great pleasure the practice of growing fruits out of the regular season, affords to those who pursue it.

So neither by any means should any recommendation to preserve flowers for winter use, be supposed to harbor a suggestion to have less winter growing flowers absolutely grown than there are now. We do not suppose the most successful methods of taking care of them would ever keep them quite as good as fresh ones; but we are quite sure they may be had very good and for months after cutting, if the proper way to preserve them were well understood.

We recently offered some remarks on the necessity of ventilation, as it is termed, in order that plants should *grow*. If there is no evaporation of the juices of plants, there is no circulation, and

matter wherewith to make growth cannot be taken up into the plant's system; so in a close house or case, life will be maintained a long while without any apparent change in the plants appearance. This is the secret of the famous Wardian cases, by which plants are brought from China, the West Indies, and indeed from the most remote parts of the globe to England, after months of a voyage, in perfect safety. They are made perfectly air-tight, so that there can be no change in their atmospheric condition.

It is only necessary that the vegetation in these cases should have plenty of light to prevent decomposition, and perfect health, if not growth, is maintained.

Cut flowers could be kept in water just as well under a case, as plants in soil under the same conditions, although probably more care would be necessary in maintaining a low temperature than in the regular Wardian plant case, as with water in the cases instead of soil, there might be a greater tendency to damp loving species of mildew to propagate themselves,—but of this we are not sure.

We are led to these remarks chiefly from seeing a few flowers cut off from the plants in the open ground, the first week in October, as perfectly fresh at Christmas as if fresh cut. There were Chrysanthemums, Eupatorium, Abutilon, Bouvardia, Sweet Alyssum, Mignonette, and some others. These flowers were placed loosely in a saucer of water, and put on a shelf in a damp and tight greenhouse, with a north aspect, where there was plenty of light, but no evaporation, indeed the floor never showed a symptom of drying during all the period referred to. The house, intended for filling with bedding plants towards spring, had no fire in it, so that the temperature most probably was never much over 40°, and never below freezing point.

What was thus done accidentally, would no doubt be better done by studying the conditions which insured success. At all events, it is quite clear that there is no real obstacle to the keeping of cut flowers a much longer time fresh than is generally supposed; the first conditions necessary being evidently security from evaporation, full exposure to the light, and as low a temperature as will well keep from freezing.

**GROWING GRAPE VINES IN POTS, *versus*
GROWING THEM IN THE OPEN AIR.**

From time to time—from day to day—new questions arise which put the fervid horticulturist into a raging fever, the exact stage of which can be pretty accurately noted by the terms in which one speaks or writes of another's opinions on said questions. Some time ago it was cautiously mooted at Rochester that Grapes propagated from green wood were not as good as they should be,—this was the first stage of a new disease. Then it came that plants in pots were not as good so raised as those grown in borders in hot houses; and the last position taken is that plants raised under glass are of no use whatever.

We have before us a catalogue in which pot-raised vines are held up to contempt in prettily drawn pictures of how the roots are "curled around the pots;" and after looking on this picture, we are asked to look on *that* where the fibres in the border raised plants are pushing away in every direction, as if they were huge asparagus roots; and we have another one in which all "hot house vines" are held up to the "contempt they so richly deserve."

As usual, there are two sides to this question. The man who cannot raise vines well in the open air, the public half suspects is interested in praising hot house vines; while he who can get into a favorable locality, and who can raise them out of doors, is shrewdly supposed to want all the sales to himself of his "splendid out-door raised stock." It appears like another illustration of the old case where it made a great difference whose bull it was that was gored; but one thing it does truly show, namely, that the fever referred to is getting into a very bad stage.

It is for us, as journalists, to ignore all these interesting suggestions of interested Vine-growers, and examine candidly whether there be any grounds for prejudice against any of these particular systems.

In the first place, it is quite certain that thousands of pot-grown plants may be, as they certainly are, worthless. When they are thickly grown together,—their owners greedy of every inch of space,—starved at the root, and in the necessary amount of light and air necessary to produce healthy foliage,—over watered or under watered,—exposed to sudden and continued variations of temperature,—in short, bared to every condition of disease, until they are diseased,—such vines are of course poor illustrations of the advantages of house-grown vines against plants raised in the open ground.

And so, on the other hand, Grape vines raised in the open ground, on unfavorable soil, and under unfavorable circumstances, until it is nigh sick unto death, has no chance against a healthy pot-raised plant. Disease against Health is not fair play.

But to set aside any question of health against disease, and asking under which circumstances is a young plant likely to be grown in most perfect health the first year of its life; and we think the answer will be that, in the average of instances, the race will be won by the pot-raised vine.

We know, in the first place, that a vine is always best when the system of roots start from one central point, for instance, when a vine is raised from the eye, as against a double set of roots proceeding from two eyes, as is the case in plants cutting raised; but vines cannot be very well raised as a general thing from eyes in the open air, therefore the house vine has an advantage to start with.

Then see the troubles an out-door cutting is exposed to, from which the fostering hand of the gardener preserves the plant in his propagating house. The spring frost, the steel beetle, the dews at night and scorching sun by day; the heavy rain and the dry spell; "agarics and fungi, and mildew and mold," and the scores of other troubles which meet the best appointed out-door nursery at times, are all under control under glass.

There are good out-door vines raised, undeniably, just as there are strong Indians raised in the wild Western wastes,—not because the system is the best conducive to health, but because the hard naturally unnatural system, kills off all the weaker ones, which our civilized system fosters, cares for, and struggles through with into something like existence; and they make the apparent show to favor the out-door against the really superior in-door system of growth. The best growth will be where the conditions of health can be best observed; and that certainly, for the first year of a vine, can be, though it very often is not, "obtained under glass."

The coiling of the roots seems a funny objection to a pot grown vine. In a tree we can understand that if it were kept a long while stunted in a pot, and afterwards set out, the coiled and twisted main roots having their points all directed inwards towards the plant's axis, would be so unstable under heavy growths, as to blow over with the wind; and this we have heard as objection to rare Pine trees that have been long grown in pots,—none that they would not grow nearly or perhaps quite as healthy as others raised under the out-door conditions; but there cannot be this same objection to more fibrous rooted things. Thousands of vines have been grown

in pots for vineries since the world began, and thousands of vineries have groaned under their weight of fruit, and vigorous with shoots and foliage. Thousands of vines have been pot raised for thousands of our most successful vineyards,—thousands of trees, oranges, lemons, oleanders, fruit trees, and greenhouse plants have been successfully grown, healthy and vigorous, for years upon years, in pots and tubs, with their roots coiled upon coils, without ever suggesting a thought of disease to the growers.

We would not seem to apologize for the many miserable but cheap "house vines," sent out by ignorant or mercenary Grape-vine growers; but as a rule, we are quite sure there is as good a chance of a perfectly healthy vine being obtained in a pot from a good and conscientious grower, as from any one who grows exclusively in the open air; or from one who grows vines in pots, as from he who grows them in in the vinery borders.

DEATH OF DR. JOHN LINDLEY.

Every horticulturist knows by name this distinguished man. The scientific character which he gave to horticulture, made it respectable; and it is not too much to say that, to the establishment of the *Gardener's Chronicle*, with Dr. Lindley as editor, the modern eminent position of British Horticulture is to be traced. More practical serials, and probably more valuable ones, existed in England for years before the *Gardener's Chronicle* was brought forth,—but merit alone never leaves its mark. The tact which can interest fashion and wealth, power and intelligence, the highest and the lowest, in any case, though that tact may be in the person of moderate attainments, will do more to force its success than the profoundest genius alone will do. But in the person of Dr. Lindley, genius and tact were singularly combined; and this joined to great force and energy of character, produced in the highest English social circles such a love for gardening that it became the passion and pride of that nation. It is impossible for the tactician to pursue his useful course without exposing himself to temptations that the blunt straightforward "genius" is ignorant of; hence Dr. Lindley exposed himself to the taunt of toadying to nobility,—of being opposed to free institutions—and of a haughty carriage generally to persons in humble circumstances of life. His Wellingtonias, Saxe-Gothas, and other genera named after mere noblemen, because they were noblemen, shocked his fellow botanists who had been habituated to bestowing such names

in requital of services rendered to the science; and his persistent ignoring of American horticulture, and constant efforts to induce gardeners against coming to America,—“if they must emigrate, let them go to New Zealand,”—are well known. To a distinguished American, he ridiculed his claim, when introduced as a nurseryman, by contemptuously exclaiming, “Nurseryman! what Nurseries have you in America?” And to his dying day he steadily refused an exchange with the *Gardener's Monthly*, being the only one of the leading European journals in that position. We may say, in justice to the new Editor of the *G. Chronicle*, that he is evidently a man of more liberal views,—one of the first acts of his Editorial career being to write for an exchange with us.

We have always interpreted these weaknesses of Dr. Lindley charitably, as the pages of our journal will amply attest,—regarding them as rather the effect of a policy warped beyond propriety, by a desire to be useful in a certain way of his own selection, which had become habitual by long continued use. At any rate, we would draw the veil over his errors and short-comings, and lament his death as sincerely as any of his most ardent personal admirers.

Dr. Lindley was born in Norwich, England, on February 5th, 1799. His father was a nurseryman, well-known as the author of “A guide to the Orchard and Kitchen Garden.” At 18 he became a commercial traveller for Wrench, the Seedsman of Camberwell. Sir W. Hooker, then Mr. Hooker, was one of his earliest botanical acquaintances, and probably had much to do with fixing his tastes. At 20 years of age he translated Richard's “*Analyse du fruit*,” from the French, completing the whole at one sitting, three days and two nights,—equal to any exertion of Loudon, who used to overwork himself in the same way, and whom by the way Lindley assisted in the preparation of “*Encyclopædia of Plants*.”

At the age of 23 he was appointed Assistant Secretary of the London Horticultural Society, under Mr. Sabine. While here he distinguished himself in a controversy, which he carried on under an assumed name or anonymously, with Sir J. E. Smith, on the merits of the natural system of Botany, Sir James being wedded indissolubly to the old Linnæan. After some several articles from each had appeared, Sir James discovered that his antagonist was only a “poor clerk,” which so offended his aristocratic prejudices, that he declined to continue a controversy with one in a station so much beneath his, and so left Lindley, in the public estimation

master of the field. This controversy made him numerous friends, and gave him at once a high position amongst the botanists of the new school.

Dr. Lindley is the author of numerous works on Botany. To horticulturists, however, he is best known by his "Theory of Horticulture," which, though the advancement of the Science has shown to be imperfect, is still the best English work extant,—the writings of our Professor Asa Gray, having the advantage of more modern research, being deemed superior. His "Introduction to Botany" was also at one time very popular, but now also completely replaced in this country by Dr. Gray's works. The "Vegetable Kingdom" is another splendid work which will cause Lindley's name to be long remembered with gratitude. Though considered imperfect, we have not yet found another to replace it in our library, and would sooner part with any other than it.

The last thirty years of his botanical career was directed especially to the study of that curious and beautiful tribe of plants, the *Orchidaceæ*. He is the author of numerous standard works on the subject, and his name will long be an authority with lovers of this beautiful tribe.

The death of men like Paxton, Hooker, Lindley, and others, brings new duties for us who were in a certain sense their pupils. We owe it to their labors for us, to do a little for others now that they are gone. We have superior Horticultural talent in this country, as well as men distinguished in sciences relating to gardening. Our want is the practical minds like those we now deplore, who have the tact and ability to popularize and explain it. No doubt they will arise with the occasion. We have done our own humble share to the best of our ability, and give below an extract of a note from one who, like us, has done much in the same pursuit, in the hope that it may encourage such of our readers who have the ability to turn their attention to the indicated want:

"The death of Dr. Lindley has made an important hiatus in popular gardening literature. We, in America especially, need men to write who devote time, thought, and knowledge to this elegant department of knowledge, as they do to Sciences of law, of medicine, or theology; and, although we are glad of transient and cursory writing, rather than none, I feel the want, in American Horticultural magazines, of writing that is the result of long and close observation, and of ripe reflection.

I am, truly, H. W. BEECHER."

A GOOD EXAMPLE.

As one would suppose, the cost of maintaining such an establishment as the Academy of Natural Sciences of Philadelphia must be very great, and it is necessary that the membership fee should be heavy to support it,—it is so with most societies of the kind,—hence many deserving poor men cannot share a honor they often deserve.

Philadelphia has a great number of working men who are quite distinguished in various sciences, which they pursue, after or before working hours. Two of these, eminent in Botany, have been elected life members of the Academy of Natural Sciences, and presented with receipts in full of membership fees. Honored, as no doubt the newly elected members feel, the Academy honors itself more, and we take a pride in holding it up as an example for other societies to follow.

PLAN OF A FLOWER-GARDEN.

The following pretty design is from the London *Journal of Horticulture*. We give it with the description of the plants it was filled with last year,—not that the same varieties would suit our hot and dry climate; but as indicating the colors selected for the filling. The central bed might have with us China Rose Agrippine, pegged down. Variegated Geraniums like Golden Chain suffer too much with us, but the Variegated Periwinkle does admirably, and can be used for many similar purposes. Variegated Alyssum does very well, the Cabbage-fly being its only enemy. Any dark crimson Verbena like Geant des Battailes, would do as well as Ariosto. Centaurea candidissimum or ragusina, is now getting common, and will do for *C. tomentosum*, which does not suit our climate. Yellow Calceolarias do pretty well,—such kinds as Amplexicaule particularly,—sometimes in a hot season they will give out; but a few pots of the annual one, *C. pinnata*, or *scabiosæfolia*, might be sown in spring, as a reserve to fill in if the others fail.

In this connection we may say that nothing makes better American bedding plants than the old class of Scarlet Geraniums, of which there are scores of shades, from white to pink and deep crimson:

"This pretty garden looks well from any direction, but looks best from the cottage, which, approached by a sloping bank or turf, is 12 feet above the level of the garden. The following is the arrangement this season:—

1. Filled with China Roses, is a bed raised 18 inches, bordered with Ivy, and an Ivy handle across

it to resemble a basket. The Roses had been fine. In the autumn they were scarcely brilliant enough for the other beds.

2. *a*, Geranium Brilliant; *b*, Lobelia speciosa; *c*, Golden Chain.

3. *a*, Geranium Baron Hugel; *b*, Flower of the Day.

4. *Humea elegans*—three plants to make a mass, and Variegated Alyssum.

5. Geranium Christine.

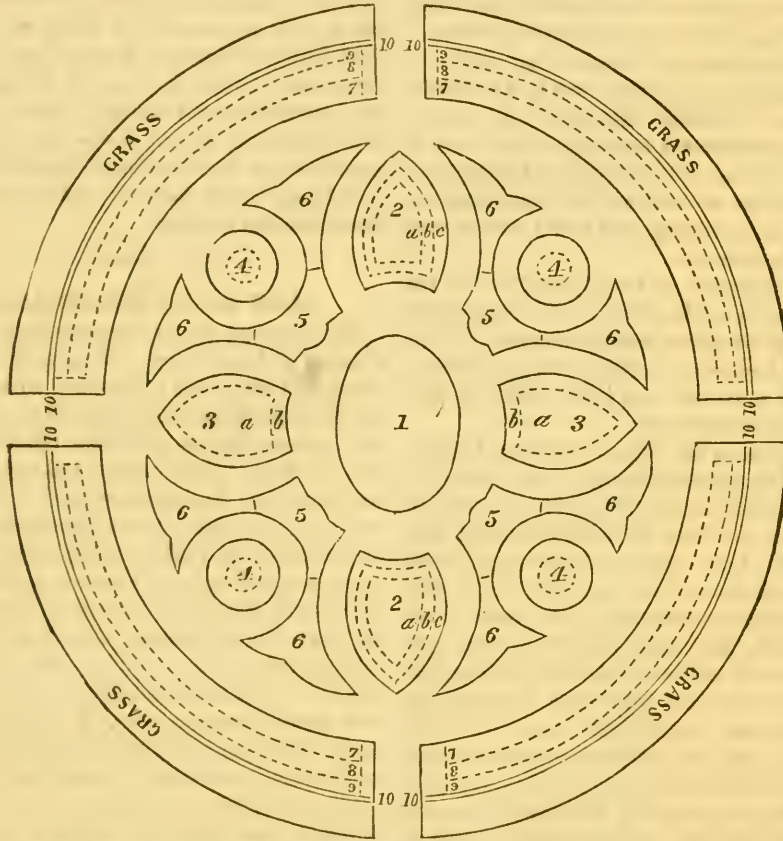
6. Verbena Ariosto.

7. Cerastium tomentosum.

8. Lobelia speciosa.

9. Calceolaria Prince of Orange.

10. Privet hedge, cut square, 15 inches high, next lawn. The beds are on gravel, and the inner ones edged with Thrift.



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.

NURSERYMEN'S ADVERTISEMENTS—*X. Y., Chicago, Ills.*—Mr. Charles Downing is not a nurseryman, but a private amateur of New York, who has no interest whatever in the sale of any fruit or flower: Mistaken he may, or may not have been in the Buffalo Seedling identity, though we do not

remember where he endorsed it as distinct, (which after all it may be—Mr. Hovey may have had wrong Buffalo's), but for conscientious uprightness in giving an opinion, carefulness in arriving at conclusions, and liberality and generosity in distributing his good things, no man excels him. Mr. Downing is the idol of the pomological circle in which he moves, and it is clear you are correct when you add, that "you have no personal acquaintance with him." We are all of us wrong at times in our published opinions; and we do not suppose Mr. Downing would shrink from criticism, on that score, any more than the rest of us.

A MODEL LETTER.—The position of an Editor who intends to do his duty to his readers; to do full justice to even the merits of his enemies; and to criticize the public acts of his best friends, is not expected to be a pleasant one. We have little to complain of. Occasionally we "catch it;" but as we expect such episodes, we rather enjoy the variety. We like to share the good things with our readers, so give them the following from Mr. Jacob Moore. We believe we never saw Mr. Moore. He is not indebted to us at any rate, nor we to him. When at Rochester, we saw his Grapes, thought well of them, and gave them a good notice; though it seemed to us the 'savans' there were disposed to give them what is technically called the "cold shoulder." We rather think all the popularity these Grapes have got is due to our favorable notices of them. Repeating merely what has been said before, we did not think the article of sufficient interest to most of our readers,—perhaps we may err sometimes both in what we pass, and in what we omit,—that is our misfortune, but it does not touch our self respect.

We give the following entertaining letter of Mr. Moore's without any charge to him. It may bring us in considerable advertising from him in future; who knows?

"ROCHESTER, Nov. 15th, 1865.

Mr. Thomas Meehan, Dear Sir: Yours of the 9th is at hand, and I must say I am greatly surprised at its contents. That the article I sent you will not prove *sufficiently interesting*, I cannot believe,—indeed there is no doubt in my mind that it will prove far more interesting to the mass of readers than many articles which I have seen in your magazine, containing long lists of botanical names, and in which even the professional gardener could take but slight interest.

I also differ with you most *decidedly* on another point, viz., with regard to new varieties of Grapes and Strawberries. That new varieties of both these fruits are numerous, is true; but that few of them are of *great merit*, is also full as true. In the words of Webster, when asked by a young man if the profession of law was not over supplied, "*the upper chambers are vacant.*" Just so with the new varieties, and with the great majority of old ones too: the upper chambers are vacant, *i. e.*, but few of them combine the *highest qualities*. It is true a variety may have to struggle long for a considerable period before meeting with popular favor; but if said variety has the *real merit to back it up*, it will finally be successful. The Wilson's Albany Strawberry is a proof of this assertion.

I have sent similar articles to the *Horticulturist* and *Hovey's Magazine*, and you are the only editor who has written me that he fears my communication will not prove "sufficiently interesting" for publication. Hovey wrote me that he "liked my article," and that it would appear in the December number. It is quite surprising to see how differently we view the article in question. You say, "whatever I have written you that has had a bearing on the successful hybridization of the native with the foreign Grape, has had with you a much greater value." Well, Mr. Meehan, I consider that I have never written you any thing that has had a more direct bearing on the hybridization question than this self-same article. But I will not discuss this subject further. Your comments in the *Monthly* so far on my Grapes have been favorable (with the exception of a doubt expressed in your last, as to the D. Hamburg being produced from a seed of the Diana), and it was my intention to advertise in your journal extensively; but judging from the tone of your present letter, "a change appears to have come over the spirit of your dream," and appearances are that I shall have to look further for the editor and the magazine who are to give my operations in cross-breeding, etc., to the public,—perhaps the *Horticulturist* and *Hovey's Magazine*, who knows?

In conclusion, I have only to say, that should you decide not to publish the article in question on account of it not being "sufficiently interesting," for the mass of your readers, you will please return it, and I will not again trouble you with any further communication."

THE NEW EDITORS OF THE LONDON GARDENER'S CHRONICLE.—Whatever concerns this journal has a wide-world interest among horticulturists,—and it will serve more than a natural curiosity for us to give some account of the two gentlemen who now control its destinies,—Mr. Thomas Moore and Dr. M. T. Masters.

At the long distance of time since we were personally acquainted with them, we are not sure that we may not be confused in the identity of these gentlemen with the persons in our mind; but we believe we are not, and will venture on their history.

Like Dr. Lindley, Sir Joseph Paxton, and Sir W. J. Hooker, they are essentially self-made men,—Mr. Moore particularly so. He came to London from Scotland, we believe, a poor garden boy, in about his twentieth year, and made his first entry into Kew Gardens. One of the first of the jobs he was set to learn, was the highly philosophic exper-

iment of wheeling earth up a plank, in making some excavations, and it is recorded in the unwritten "Chronica Kewensis," that he threw over his barrow on the first day's illustration, avowing that he was "born for better things than wheeling dirt." The next the Chronicles relate of him is that he was foreman of the herbaceous department, under Mr. Marnock, at the Royal Botanic Gardens, Regent's Park, since when he has become particularly distinguished in horticultural literature, both as editor of some valuable serials, and as author of books on Ferns and other subjects. We take him to be now about 45 years of age.

Dr. Masters we believe to be eldest son of the celebrated old nurseryman William Masters of the Canterbury Nurseries. In "our day" he was but a student of great promise, having then an enviable reputation for proficiency in classical lore. Believing, however, in this case, the old maxim, *sic patris est filius*, will hold good, we may say of the father that he was (he is, we believe, still living), one of the most intelligent and talented of the old race of English nurserymen. In Landscape Gardening particularly, he was pre-eminent, being generally sought for by those who wanted work done well, "regardless of expense." Lord Cornwallis' place, in Kent, is to this day a lasting monument of Mr. Masters' skill in this department. Like many of the old school nurserymen, Mr. M. had a great horror of "humbuggery," as the moderns term it, of peculiar advertising; hence the Suttons, Rendles, the Youells and others stepped in and took the palm from the "old boys,"—and in the effort to maintain the family dignity,—for Mr. Masters was chosen Mayor of Canterbury, and held other municipal offices, his means were probably too much cramped to compete successfully with more enterprising firms, and we have not heard much of the house for a long time, till the eminent position of the son reminds us of its former fame.

ADVERTISING THE PREMIUMS OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.—*Swift* inquires: "What is the reason that the Penna. Horticultural Society has not published a report of the Autumnal Exhibition of 1865? I, in company with many other exhibitors, made great exertion to get our things ready, and to gain our employers consent to exhibit them. Why was there not a full report published in the local papers, as in justice to the gentlemen who sent their plants, etc., and the gardeners who strained every nerve to make the Exhibition a success, were entitled to?"

We were led to suppose, at the October stated

meeting of the Society, that a full report would appear in the *Monthly*, but even that hope is denied us. Let us have more information on the subject."

[What the reference may be to the "understanding at the October meeting," we do not know. We were certainly no party to any such understanding. We give only such a sketch of any meeting of the Society, or of any Society, as we think may interest *all our readers* everywhere. There are many other things occur at these meetings which it should be considered by the Society an honor to the exhibitor that the public should know,—it is for them to decide how to put this before the public, not us.

To avoid any misunderstanding, we may say that we are not paid to do the Society's advertising. The advertising it does in the other city papers we believe it pays for—we have done all for it that we have done free, without hope or thought of reward, but for the general good it might do to horticulture. We do not know either that the Society has officially ever taken any knowledge of our existence—not even so far as to include our journal in the list of city papers to whom "complimentaries" are distributed.

If, therefore, our correspondent or others think there is any obligation on our part to print "full reports," they are mistaken. We select and refer to only what we think will generally interest our readers, and nothing more.]

WINTER BOUQUET FLOWERS—*J. P. R., Queens, N. Y.*—Will some Bouquet maker inform me which are the best 20 plants, winter-blooming, suitable and profitable for making bouquets. By-the-hye my employer bought of Mr. Buist, about 15 years ago, a plant of *Rondeletia speciosa* major, and it is one of the best early winter-blooming plants we have; it has been in bloom two months,—when the plant is large it is splendid. Most of the plants enumerated by you in your last number for cutting, I have known many years. Are there no new winter-blooming plants, suitable for the million? I look to the *Monthly* for novelties.

[Our selection would be *Camellia japonica*, (double white), *incarnata*, *imbricata*; *Stevia serrata*, *Euphorbia jacquinciflora*, *Poinsettia pulcherrima*, Neapolitan Violets, *Bouvardia leiantha*, Tea Rose *Triomphe de Luxemburg*, *Streptocarpus Rhexii*, *Noisette Rose Lamarque*, *Eupatorium cœlestinum*, *Scarlet Geraniums*, *Acacia lineata*, *A. pubescens*, *Azalea indica alba*, *A. Duke of Wellington*, (or any rich pink variety,) *Lopezia rosea*, *Heliotrope*, *Catalonian Jasmine*, besides *Mignonette*, *Sweet Alyssum*, etc., which are indispensable annuals. We

should be glad to have the best 20 of some of our regular bouquet makers.]

DIANA HAMBURGH GRAPE—*John Charlton, Rochester, N. Y.*—In the November number of the *Monthly*, speaking of this variety of Grape, you say, "if this is a seedling of the Diana, etc., it is the most remarkable Grape we have ever seen." Now I can vouch for this Grape being a *seedling*, having been at its inception and birth, and likewise having stood sponsor at its baptism. I supplied Mr. Moore with pollen of the Black Hamburg Grape, from the vinery of Mr. Joseph Hall, of this place; I likewise took the seeds of the Diana, with several *other crosses*, and started them in Mr. Hall's vinery, growing them there until the plants were about one foot and a half high; after which I turned them over to Mr. Moore, and the result has been before described, by your describing the fruit in the last number of the *Monthly*. I would add, that plants under glass, this summer, with me, were more exempt from mildew than was Delaware.

[We had no intention of raising any doubt about this Grape being a true hybrid. We believe it certainly is. From what experience we have had in hybridizing, we have rarely seen so close an approach to the *male parent* in the progeny. Our doubt was meant to apply to the Diana being supposed to be the female parent, not that it was no hybrid at all.

If it mildews under glass, as Mr. Charlton intimates, it will probably be worse out of doors. It will be unfortunate if so good a Grape should not stand well.]

ABOUT A TREE DOCTOR.—A correspondent at *Harrisburgh, Ohio*, writes:

"A few days ago I was called on by a man claiming to hail from your city, as a fruit-tree Doctor. He stated that he had been engaged for fifteen years in Philadelphia in chemical operations, having failed in business, he had discovered a new process or plan by which he could medicate fruit trees so as to make the most unthrifty trees perfectly healthy and vigorous growth, and to bear a full crop every year. He carried a bottle of his medicine with him. His mode was to bore three or four holes in each tree, according to size, some two or three inches deep, at an inclination downwards of some 20 degrees, putting in his medicine by means of a funnel. It was of a dark red color, in a powder compounded of four different ingredients; pouring the hole nearly full, packing it with a stick and plugging up the hole with hard soap. He said he had medicated Plum trees in the fall that had

never borne a perfect Plum, which the next season were over-loaded, and on those which before had been punctured with *Cureulio*, the fruit was beautiful and fair. One operation would be good for a number of years. Wanted \$10 for the right of using said recipe. Would not allow of a trial. The same preparation answered for all kinds of fruits. He had been successful, he said, in selling several around Columbus and Philadelphia."

NATURAL ORDERS OF NEW PLANTS—*J. P. R., Queens, N. Y.*—In noticing new plants, it would be useful to gardeners to state their Natural Order. The Natural Order conveys some idea of the plants. I like your journal, and every gardener in America ought to subscribe for it,—European gardeners in America cannot well do without it.

[Our chief object in recording the new plants that appear in Europe is, first, that our importers may know what to look out for; and, secondly, when a year or two later the plants shall be common in our nurseries, our subscribers have only to look back over our back volumes to get a full account of the introduction. Our European exchanges seldom give the Natural Orders of the new plants they note; and where new genera happens, we cannot of course give it, not ourselves seeing the plants, but we will do so where practicable.

We endeavor to make our paper an essential to every horticulturist, and are pleased to have the approbation of all classes.]

SPORTS OF ROSES.—The following extracts from one of our old subscribers, *Rev. James Sprunt, Kenansville, N. C.*, will interest our Rose-growers:

"I have just finished looking over nearly all the numbers of the *Gardener's Monthly* that were issued during the war. After having been entirely cut off from everything of this sort for more than four long years, you can scarcely imagine the pleasure I have experienced in their perusal. * *

In one of your editorials, headed 'Natural Sports,' you correctly remark, that H. P. Mad. Desirée Giraud is a sport; not, however, from *La Reine*, as you then supposed, but from *Baronne Prévost*. Now do you know any thing of the origin of *Panachée d'Orleans*? [We do not.—ED.] and my reason for making the enquiry is, that I have propagated a fine sport from that variety: a very large, full and fine self-colored flower, and like its original, a good grower and very free bloomer. But the striped variety may, like *Mad. D. Geraud*, be itself a sport, and the self only a return to its first condition. If you cannot give me this information

some of your correspondents may be able to do so, through the *Monthly*. If the sport is *new*, I regard it as a decided acquisition. I have several other novelties, of which you may hear something hereafter. And here I would observe, that in the article to which I have referred, you give a correct statement of the origin of Buchanan's *Isabella* (not *Catharine*, as he had it) Sprunt, and I thank you for the favorable notice of its merits."

GRAPE CULTURE IN THE SOUTHERN STATES—*J. N.*—Do you know of any good work on the cultivation of the Grape and other small fruits in the Southern States?

[Fuller's "Grape Culturist" is a very good work. There is no work on small fruits alone. You had better get Barry's "Fruit Garden," which is a reliable work on all kinds of fruit. These are not exactly adapted to the soil and climate of the Southern States. The best work of that character is White's "Gardening for the South," about 100 pages of which are devoted to fruits.]

FRUIT OF THE ANGER'S QUINCE—"A Beginner," *Springfield, Ohio.*—I have the Apple Quince, the Orange Quince, and suckers of Quince sprouted from the stock of Angers, that the dwarf Pear was grafted on, fruited this season, and can see no difference in any of them. If the Angers bears good fruit, and hardier than the others, why not grow them more?

[The fruit of the Anger's Quince is rather larger on the average than the kinds usually grown for their fruit; but it does not bear as well as the others. There is no other reason why it is not grown for its fruit.]

CAUSES OF RAIN.—*L. S. M.* observes: "In 1863-4, whilst we were parched with drought, the Southern States (and our soldiers) were drenched with rain; in 1865 we had abundant rains (more than was good for our crops), yet over in Canada, a friend said to me, they were too dry throughout the season. How shall we account for this,—*philosophically or meteorologically?* Does rain and snow follow guns, as some have tried to reason?"

Again, in Southern Ohio, the *Grape* and *Apple* crop was nearly a failure, but *Pears* and *Peaches* were plenty,—I never saw finer *Pears*. How can we account for this? If our late frosts destroyed the first, how did the second escape,—are *Pears* and *Peaches* more invulnerable to "*old Jack*" than *Apples*, *Quinces* and *Grapes*?

Cherries too were an exception,—as also garden

fruits,—our trees were loaded with fruit, delightful to look upon; but, alas! we only gathered the earliest kinds, the wet weather ruined the others when nearly ripe."

[There has seemed a reason in the theory alluded to; but the fact that heavy artillery fights have occurred without bringing rain, seems to destroy the conclusion. Possibly some peculiar currents passing over a battle-field may produce rain; others not; however, this is mere guess.

"Early spring frosts" have been too long a bugaboo for failures. The real cause is worth investigating.]

DIFFERENT COLORS ON THE SAME STALK OF A CHRYSANTHEMUM.—A correspondent sends us a pure white and golden yellow Pomponé Chrysanthemum, all from the same stalk. This change of color is common among Dahlias, but we have never seen it in the Chrysanthemum, although we have heard it is not unusual. The name of the variety is asked for. Do any of our readers know a kind with this peculiarity?

EDITORS OF ENGLISH PERIODICALS—*J. P. R., Queens, N. Y.*—Will you please to inform me who is the Editor of the *Gardener's Weekly*? [Shirley Hibberd.]

Is Mr. Johnson Editor of the *Journal of Horticulture and Cottage Gardener*? [Yes.]

POTATO CULTURE.—In Mr. A. W. Harrison's article on this subject, in our last number, the yield of the Monitor should have been 245 bushels per acre, and the date of the planting of the Harrison, No. 241 and No. 380, was April 15, not May 15.

WORK ON THE ROSE—*A Subscriber, Cleveland, Ohio.*—Which do you consider the best work on the cultivation and propagation of the Rose?

["Buist on the Rose," or "Parsons on the Rose," are excellent American works.]

New and Rare Fruits.

THE GREAT BUFFALO AND THE RUSSELL STRAWBERRIES.—I see it noticed in some of the periodicals of the day, from apparent good authority, that those named and the "*McAvoy Superior*" are one. I have not the latter to draw any comparison with, but the following I draw from the growth of the two former, the foliage of the *Russell* is more reflexed than the *Buffalo*, it is also broader in pro-

portion to its length; the petiole or footstalk of a single leaf is shorter, the main footstalk and nerves are more hairy. The aspect of the foliage of the *Buffalo* is more wavy, the indentations on the edge of the leaf are deeper, and the footstalks longer than the *Russell*. These observations are made to show, at least, that the plants are different in growth. Many of the new Strawberries cannot be fully tested till you have two or three years growth; and we hope for the sake of the cause that they will be found different in fruit.

You will confer a favor upon many of your readers, who are purchasers, if you will examine your stock and see if these remarks are borne out.—Yours truly, R. BUIST, *Rosedale*, Nov., 1865.

BUFFALO AND McAVOY'S SUPERIOR STRAWBERRIES.—Mr. R. Douglas, of Waukegan, Illinois, writes: "Wishing to know exactly where the 'joke' comes in, in the Science of Pomology, I enclose a few leaves of the *Buffalo* and *Russell* Strawberries, and I think that the difference is so plain, that even 'a Committee-man' might see it. [Take care, Mr. Douglas, of your insinuations, we have a letter from 'Ye Committee-man,' for next month.—ED.] The *Russell* is more bluntly serrated, curved more, and both in leaf and foot-stalk firmer than in *Buffalo*. I think the *Russell superior* to *McAvoy's Superior*."

Domestic Intelligence.

ROSES IN ILLINOIS.—F. K. Phoenix, in *Country Gentleman*, gives for a selection of best well proved, truly perpetual hybrid Roses: "Giant of Battles, Prince Albert, Marquis Bocella, Arthur de Sansel, Gilbert Slater, Dr. Arnal, Prince Chipet, Lord Palmerston, Duchess d'Orleans, General Pierce, Pius IX., Sydonie, Lane, Paeonic, Victor Verdier, Lion of Combats, Madame Knorr, La Ville St. Denis. Thus far we have none of the pure bright rose color, like Mrs. Elliott, for instance, Baron Larrey. To complete the list, affording a larger variety of pretty reliable ones, take Rivers, L'Enfant Mt. Carmel Baron Prevost, Gen. Jacqueminot, La Reine, Cardinal Patrizzi, Caroline Sansel, Alice Leroy. For a striped Hybrid Perpetual, Madame Desiree Giraud, or P. d'Orleans.

CLEVELAND WINE.—Mr. Leick has eighteen acres in vineyard eight miles east of Cleveland, near Dr. Dunham's. He has three wine presses,

one on Kelly's Island, one at Sandusky and one in Cleveland. He makes some wine from the *Isabella*. The *Clinton* makes good wine, and is similar to the German red wine; in fact, Germans cannot tell the difference between it and the Old Country wine. He values the *Clinton*; no other grape bears better; it likes to run on trees. The *Isabella* he does not like to mix with other kinds, because it is earliest ripe and ferments soonest.—By itself it makes a fair wine. Last year he tried 200 lbs. of the *Concord*, and does not like it, and yet the *Hermann* folks value it to mix with *Norton's Virginia*.

The following is his account of the percentage of wine in different grapes. He uses the scale of Oëshel, which ranges from 4 to 115 degrees:—*Concord* showed from 65 to 70 per cent; *Norton's Virginia*, suddenly, 110. *Catawba* from 80 to 90; *Isabella* from 60 to 65; *Clinton* 100 and sometimes 103: of the *Delaware* he was doubtful.

The amount of acid in the most of different grapes he tests by Geister's acid meter, ranging from 1 to 20. In addition is a thermometer, which is used in making the trial when the must is at 52 degrees Fahrenheit. In 80 degrees of *Catawba* saccharine matter there are from 7 to 8 of acid; in *Isabella*, 9 to 10; *Norton's Virginia*, 4; *Delaware*, 5; *Concord*, 6.

Last year he bought grapes to make from nine to ten thousand gallons of wine; two years ago from eighteen to twenty thousand gallons. He says positively there can be no limit to the market at good prices. Last year most of the grapes were engaged early in August. This year buyers were already around trying to contract.

Mr. Leick made this statement: If, for five years to come, the people of this country plant vineyards as they have for five years past, there will be no more wines and grapes here than in the old country.

He says the grapes in Germany have only about half as much acid as those in this country, but the flavor of American wine is three times stronger.—The German grapes yield about the same, but the skin is thinner. The acid is in the thick skin of the *Catawba*. The saccharine matter is about the same. They do not get half so much wine from an acre of grapes there as we do here, for they have a good crop only once in eight years. As regards the comparative quality of the wine he could not decide, so much depends on taste, but the *Catawba* has only 9½ per cent of alcohol.

Beside raising grapes largely he buys all that are offered. Last year he paid on an average 12½ cts.

a pound. Then he employs girls to pick them over, rejecting poor grapes, and generally from 12 pounds of grapes he gets a gallon of wine. He puts in no sugar or other addition. If the wine is sour, no matter, it will sell; but to make good wine he must have ripe grapes.

Last year he sent Catawba grapes to a friend in Germany, who submitted them to a committee of several gentlemen without telling whence they came. While tasting around they were much puzzled, but finally they concluded them to be Hungarian grapes. When it was told they were Cleveland grapes there was great astonishment to learn that the new country could produce such good fruit.—*New York Tribune.*

HOW TO RAISE PEACHES EVERY YEAR IN IOWA.—When quite young, set the tree in the ground with all the roots running north and south, and thin the tree to a fan shape, with edge in the same direction as the roots. When the tree is past three years old, after the leaves are off in the fall, lean it towards the west till the branches nearly touch the ground. This can be done easily as the roots which run north and south will be only slightly twisted. This should be the permanent position of the tree, never should it be righted up. The suckers or water sprouts should be kept stripped off during the summer, or the vitality of the tree will run to sprouts.

The ends of *all* the branches should be crippled about the first of August to force the sap into the fruit buds.

Every fall before cold weather sets in, cover the tree with brush to keep the tree close to the ground, and with straw over the brush to protect the fruit buds from the cold—and uncover in the spring about the 10th of May.

Thus, by a little care and labor, every year, an abundance of that delicious fruit can be raised at home, affording a great pleasure, and saving expense of importing from a distance.—*Iowa Homestead.*

COST OF THE CENTRAL PARK, NEW YORK.—The total cost of the Park up to the 31st of December last was, in round numbers, \$9,183,809 10, including the cost of the land. The rate of tax for 1864 was 2.16, yielding on the increased valuation an increased tax of \$610,910 49, which comes from the Twelfth, Nineteenth and Twenty-second wards. The annual interest on the cost of the land and the improvements at this time is six per cent, or \$551,028 49. The excess of increased tax

in the three wards over the interest on the cost of land and improvements is \$55,889.

The Commissioners report an increase of visitors. Allowing an average of three persons to each vehicle passing into the Park, the following will show, approximately, the number of persons who have entered during the past three years:

1862,	.	.	4,195,515.
1863,	.	.	4,327,409.
1864,	.	.	5,740,079.

The total income from boat service was \$6,208 85, at an expense to the conductor of \$5,228 50.

The arrests for the year, from various causes, were 130, compared with 86 for 1863.

WHEN DOES NEW BARK FORM.—Some five years ago the writer attended the annual meeting of the Mississippi Valley Horticultural Association. One of the members had peeled the bark off the limbs for six inches in length of various fruit and forest trees, and at the same time attached a small tin card with fine wire to the limbs, with the date. These peelings amounted to some three or four each month the year round. The object was to find what time in the year a new bark would be most perfectly formed over the wound. This was found in that latitude to be the fifteenth of June. In the month of January, February and March, the limbs showed a dry dead surface.—April and May the tree had grown an imperfect bark. June 15th the peeled surface showed a perfect covering of new bark. From this date the growth of the bark was less perfect through the summer months, and the surface dry and dead in the fall months. I was not a fruit grower myself, or a member of the association, yet the facts elicited struck me as being of great practical value to those who were. It was shown that the new bark invariably commenced to grow downwards or from the upper end of the limb; that the sap must go up to the ends of the limbs, and there be brought in connection with the oxygen of the atmosphere, through the injured pores of the leaves, before it could be used in the economy of the tree to form new bark. This being so, and it found an established law that at one period of the year new bark will form perfectly, and this period probably changing in different latitudes, experiments should at once be made to find out the proper time to prune in different regions, and this can be done as stated.—*Iowa Homestead.*

Foreign Intelligence.

PELARGONIUMS AT THE LONDON SHOW.—Mr. Weir's lot consisted of Perfection, Carminatum, Acme, Mrs. Stewart Hodgson, Jenny Lind, and Queen of Roses

VAN HOUTTE NURSERIES AT GHENT, BELGIUM.—A correspondent of *The Journal of Horticulture*, says:—

“I found M. Van Houtte crippled in body by an attack of gout, but active enough in mind, and, as far as a brief interview would enable me to form an opinion, fully bearing out the character given him by ‘G.’ His establishment is a vast one; but it must be borne in mind that it is not in a pecuniary point of view resting on his shoulders. The royal arms over the gateway are emblematic, not, as with us, that the establishment serves royalty, but that royalty serves it. In what way I do not exactly know; but it is, I was informed, considered as a Government establishment, and not at all corresponding to those great establishments in our own land which rest solely on the resources of the person or family whose name they bear. In my tour round the garden I could not but be struck with the sandy and apparently barren character of the soil. One would hardly imagine how plants could grow in it; yet by careful management not only bulbs, but Conifers, Roses, and the like seemed to be doing well.

The greenhouses are very numerous, and generally speaking, low pitched and very dark, the importance of keeping off the glaring sun in summer leading to the necessity of great shading. The quantity of glass is enormous, and the stock propagated and contained in them very large. Thus, there were at least 40,000 Camellias of various sizes, and of all the valuable kinds, as well as the older sorts. 8000 Imbricata and 7000 Fimbriata will show on which kinds the run is mainly made for decorative purposes; but there were quantities of such fine kinds as Lavinia Maggi, Auguste Desfosses, and Duchesse de Berri, and I must say in a very excellent state of cleanliness and health, affording a remarkable contrast to the French nurseries in this respect. The manner in which the various markets were catered for is somewhat curious. Here were large quantities of Pandanus, Dracœnas, Cycas, and Palms of various kinds: most of these were for the Paris market, where, as every one knows, so much is done in the way of decorating houses, hotels, &c., with living plants—a custom which one would be glad to see adopted more in London. How much the dull character of the entrance even of such houses as the Langham and Grosvenor Hotels would be taken away if the use of these plants were more general. I was surprised to see, at the ‘Maribeau,’ the quantity that was purchased from day to day, and I cannot but think the same expenditure might be profitably

made with us. To one house in Paris alone 1200 Pandanus had been sent during the last year. The Cycas found their way many of them to Saxony, where two, three, four, five, and sometimes ten and fifteen francs are given for single leaves of Cycas revoluta for carrying in funeral processions, where it seems to be the custom so to use them, and to strew the churches with branches of the common Yew. The *chef* informed me that these ornamental plants were more looked for in England now than formerly. Then, again, Gloxinias, Tydæas, and kindred plants were grown in very large quantities, upwards of 20,000 Gloxinias alone being grown; and Amaryllis in large numbers, upwards of 60,000 bulbs in various stages of growth being in one quarter of the ground. This bulb ought surely to be more generally grown than it is, its showy character and easy culture fully entitling it to a place, and there are many very beautiful varieties. Among the tree Ferns were some large specimens; a magnificent one of Alsophyllia glauca, sunk in the floor of the house, had fronds that extended 20 feet, and was said to be the largest specimen in Europe. There were also fine specimens of Cibotium princeps, the Cyatheas, and other members of this very fashionable family.”

ASPLENIUM EBENOIDES.—In the London *Journal of Horticulture* we find Mr. Berkeley reported as follows, concerning Mr. Scott's Fern: It seems to us Mr. B., in asserting it to be a “veritable hybrid,” is rather fast. It *may be*, but we think this is all the facts warrant:—

“The Rev. M. J. Berkeley said there were not many plants to comment upon, but he had an interesting fact to communicate in reference to hybrid Ferns. Every one knew that in cultivating Ferns vast numbers of Gymnogrammas—golden, silver, and grey—were freely produced in the same house, and they were believed to be hybrids, but no one had proved them to be so. He had now, however a veritable case of a hybrid Fern. Mr. Robinson Scott enclosed a frond of an Asplenium which he had found in a rocky place about eight miles from Philadelphia, on the banks of the Schuylkill river. It was surrounded by *Camptosorus rhizophyllus* and *Asplenium ebeneum*, had some of the characteristics of both, and was distinct from anything described by Dr. Asa Gray, in his ‘Flora of the Northern United States.’ Sir Wm. Hooker had declared it to be new. Mr. Berkeley then described the leading characteristics of *Camptosorus rhizophyllus*, *Asplenium ebeneum*, and the hybrid. The production of such a hybrid was not

of botanical interest only, but of Horticultural importance; for if any horticulturist could obtain hybrid forms, there was no doubt that it would prove very profitable. He had prepared a set of drawings to show that it was possible to do so. The spore of a Fern consisted of an outer and an inner case, and if placed in proper circumstances of moisture, &c., the envelope would split and a root-let be thrown down. Every healthy spore produced antheridia containing a slender filament, which, on the antheridium bursting, floats about; and on coming in contact with the embryo sac containing the ovule, it penetrates the sac and the development of a fresh plant commences. Impregnation between two different Ferns, therefore, could not take place unless there was a drop of water present by which these filamentous bodies could be carried to the embryo sac; and by a little delicate manipulation it might, therefore, be possible to bring the contents of the antheridia of one Fern in contact with the ovules of another, and so produce a hybrid."

BEDDING GERANIUMS.—We think, as your Geraniums make good growth and but little bloom, that the soil is too rich. Either the soil is too rich, or the plants are planted too closely and watered too freely. Your remedy will be to make the soil less rich; add nothing to it at the winter dressing in the shape of manure or leaf-mould, unless the soil is heavy, when a dressing of sandy loam would be advisable. If the soil is very rich, and naturally moist or heavy, the plants would do better as to flowering if plunged in their pots so as to cover the rim three-quarters of an inch to an inch deep; this will check their tendency to produce foliage and cause them to bloom more freely. Punch is a strong grower at its best, but free-blooming generally. Stella is the very best dark scarlet bedding Geranium. We have it edged with a dark variegated Grass (*Dactylis glomerata elegantissima*), and the bed is indeed gorgeous. Lord Palmerston, another of the Nosegay section with crimson scarlet flowers and a good truss, we think inferior to Stella as a bedder, though fine for pot culture. Cybister is a superior bedding variety. Paul l'Abbe is a white Zonale kind, good for bedding, but does not stand sun and rain better than Mad. Vaucher. A good pure white Geranium that will endure sun and wet is much wanted for bedding. Diadematum, when it can be had true, and that is Beaton's variety, is a very free-blooming bedding Geranium, with rose-colored flowers.—*Cottage Gardener.*

HOW THEY GROW DWARF PEARS IN ENGLAND.

—With regard to Pears on the quince stock, I must make some observations. They require a light soil and cool subsoil. If land is strong it must be made light. They require biennial removal, if the garden is small, not otherwise, renewal of the soil, and root-pruning. They also require to be planted up to but not above the point of union. The soil should not touch the junction of the bud with the stock, or the budded part will root into the soil and destroy the effect of the stock, which should not be. If they are grafted high, earth should be raised like a mole-hill to the point of union. They require pinching rather than pruning. I keep mine like shrubby *Calceolarias*, with their shoots pinched to three leaves in July. If large pyramids are required, the leader, of course, must be allowed to go up. If the pyramids are too large to be removed biennially, they may be root-pruned *in loco*, in a radius of 18 or 36 inches, according to the bulk and height of the tree. Root-pruning is not sufficiently practised.—*Cottage Gardener.*

FUCHSIAS AT THE LONDON EXHIBITION.

—Fuchsias were tolerably well shown, though here as elsewhere there were none of the large specimens which years ago we were accustomed to find at summer shows. First for six, Mr. Shepherd, gardener to H. Greening, Esq., Highgate, with second-rate examples of *Souvenir de Chiswick*, Senator, Wiltshire Lass, Sir Colin Campbell, Prince of Orange, Rose of Castile; second, Mr. Young, with better conditioned though smaller plants of *Rose of Castile*, Prince Imperial, *Conspicua*, Senator, Wiltshire Lass, *Souvenir de Chiswick*; third, Mr. Phippen, gardener to J. S. Nettlefold, Esq., with *Rose of Castile*, Sir Colin Campbell, Marie Corydissen, *Venus de Medici*, Queen of Hanover, and *Wiltshire Lass*.—*Cottage Gardener.*

CLIMBING FERNS AND LYCOPODIUMS.—The climbing Ferns of the genus *Lygodium* are the loveliest of the whole of this interesting tribe of plants, only excepting the elegant *Gleichenias*. It happens most fortunately that they are very easily cultivated, and, with moderate care, soon make fine specimens. We have the *Lygodium scandens* in a vase covered with a glass lantern, one side of which is completely covered with a screen of its exquisitely beautiful fronds, by being trained up on copper wires; and we have had *L. palmatum* on the back wall of a common greenhouse, where it was kept constantly shaded by large-leaved plants trained to the rafters, and it covered the wall almost as dense-

ly as ivy. A mixture of turfy loam, turfy peat, rotten cocoonut dust, and silver-sand, equal parts, will grow any of them to perfection, with moderate warmth, shade, and moisture. *L. palmatum* is the most hardy; *L. Japonicum* does well in Wardian cases.—*Gardener's Weekly*.

PRESERVATION OF POLLEN.—M. E. Faivre calls attention, in the Bulletin of the Horticultural Society of the Rhone, to a new case of the preservation of the property of fecundation in dried pollen. It is clearly a matter of considerable interest that we should have the power of impregnating plants with strange pollen conveyed from a considerable distance. Pollen of *Gesnera cinnabarina* was gathered at Lyons on the 5th of January, 1862, and was kept in paper for a year, free from moisture and not exposed to the light. In January, 1863, some grains were employed for the impregnation of *G. cinnabarina* of the same variety as that from which the pollen was derived, and succeeded perfectly. The remaining pollen was then sent in a letter to Paris, and being submitted to an attentive examination, we doubted for a moment of its fitness for the purpose, as the grains were wrinkled and dry. They swelled with difficulty when placed in water, and the substance which came from them in consequence of their rupture, did not exhibit the strange molecular movement which takes place in normal pollen. On the second of April, however, notwithstanding our apprehension, some of the pollen was used in Jardin des Plantes by the head gardener, M. Ouley, and the operation was perfectly successful. On the 17th of April many ovaries had set, and their development proceeded regularly. It was intended to try the pollen a third time last year, but it does not appear with what result.—*La Belgique Horticole*.

BLETIA TANKERVILLIÆ.—Having grown the beautiful *Bletia Tankervilleæ* for several years in a manner very superior to what I have ever seen it elsewhere, I herewith send you a short account of my method of treatment, and shall be glad to see it in your truly useful and delightful flower magazine. The plant is most readily increased by offsets taken from the parent, and is the best mode of having plants for blooming the coming season. The time when I take offsets is usually the beginning of February; these I plant in pots about six inches diameter, using a strong and highly enriched soil. After potting, I place the plants in a hotbed frame when I have one in operation, otherwise I place them upon a heated flue, or plunge in the

bark bed of a pine stove. When the plants have been in a hotbed frame, I take them out as soon as I perceive they have struck root, and place them in the pine stove, plunging them in the bark bed. During summer I water them frequently with a mixture of soapsuds and deer's dung. By the end of October the plants will have got well established; I then give them a less quantity of water and a lower temperature. About the middle of January, as many plants as are intended for blooming early in the spring, say April and May, are repotted, keeping the buds active. I put the plants into pots of about nine inches diameter, using the same kind of soil as before. After repotting, the plants are plunged into a back pit or frame, having a brisk bottom-heat. The plants soon throw up very vigorous flower stems, producing spikes of flowers from three to four feet high, each spike having from eighteen to twenty-four blossoms.—After blooming, the plants are kept for a supply of offsets the following spring. By having a considerable number of plants, and keeping some in a cool situation, and introducing them into the frame or vine-house as circumstances require, a succession of this very beautiful flower may be had for several months, and its splendour will amply repay for every attention to its cultivation.—*Gardener's Weekly*.

VARIETIES OF IVY.—The following list will interest all lovers of this classic plant:

1. *Algeriensis*, Algerian Ivy.
2. *Canariensis*, Irish Ivy.
3. " *arborescens*, Tree Ivy.
4. " *aurea maculata*, golden-blotched Irish Ivy.
5. " *marmorata*, marbled-leaved Irish Ivy.
6. " *marmorata elegans latifolia maculata*, elegantly marbled Irish Ivy.
7. " *palmata (hibernica palmata)*, Palmate lobed Irish Ivy.
8. *Helix*, English Ivy.
9. " *arborescens*, Tree Ivy.
10. " " *alba lutescens*, white belted English Tree Ivy.
11. " " *aurea maculata*, golden clouded English Tree Ivy.
12. " " *baccifera lutea*, yellow berried English Tree Ivy.
13. " " *marginata argentea*, silver margined English Tree Ivy.
14. " " *minor lutea*, miniature leaved English Tree Ivy.

15. *Helix, aurea maculata*, gold blotched English Ivy.
16. " " *densa*, clouded gold English Ivy.
17. " " " *minor*, smaller English Ivy.
18. " *baccifera lutea* (*chrysocarpa*, English form,) yellow berried English Ivy.
19. " *chrysocarpa* (North Indian variety,) golden berried English Ivy.
20. " *crenata*, notched lobed English Ivy.
21. " *digitata*, digitate or finger-leaved English Ivy.
22. " *gracilis*, slender branched English Ivy.
23. " *lobata*, lobed leaved English Ivy.
24. " *marginata argentea*, silver margined English Ivy.
25. " " *canescens*, silvery grey English Ivy.
26. " " *cullissi*, Cullis's silver margined English Ivy.
27. " " *elegans*, elegant margined English Ivy.
28. " " *elegantissima*, most elegant margined English Ivy.
29. " " *latifolia*, broader leaved margined English Ivy.
30. " " *major*, larger margined English Ivy.
31. " " *pulchella*, pretty margined English Ivy.
32. " " *robusta*, stronger branched English Ivy.
33. " *minor doneraileense*, miniature Doneraile English Ivy.
34. " " *marmorata elegans*, elegant marbled miniature English Ivy.
35. " *palmata*, palmate margined English Ivy
36. " " *aurea*, golden clouded palmate English Ivy.
37. " *Pennsylvanica*, Pennsylvanian (type) English Ivy.
38. " *poetica*, Poet's English Ivy.
39. " *sagittifolia*, arrow-head leaved English Ivy.
40. " *taurica*, Taurian (type) English Ivy.
41. " " *Leeana*, Lee's variety English Ivy.
42. " *japonica argentea*, silver-margined Japan Ivy.
43. " *Rœgneriana*, Rœgner's Ivy.

The most esteemed kinds for surface covering, with large green leaves, are those by Nos. 1, 2 and 43, the second one being the most adapted for extensive planting. The arborescent or tree-like green forms are recognized by Nos. 9 and 12; these, with the variegated tree Ivies, are adapted

for planting in shrubberies or arboretums. The green climbing varieties of free secondary vigor and size of leaves, are those by Nos. 37, 40, 21, 18, 22, 38, 41. Varieties of medium size, with pretty palmately-lobed leaves, are Nos. 37 and 21. No. 19 has elegant narrow-lobed leaves with silvery-white veins. The smallest and narrowest-lobed leaved variety, of graceful yet vigorous growth, is No. 33. The golden-fruited tree form is No. 12. The varieties of medium yet free growth, forming a close leaf-covering to the wall, are Nos. 40, 18, 23, 21, 37.

Amongst the finest variegated-leaved ones, the beautiful silver-belted free varieties are indicated by Nos. 10 and 13. The rich golden-blotched and belted tree forms are Nos. 11 and 14. The elegantly marmorated, large-leaved silver variety is No. 6. The picturesque, slender silver margined leaved kinds are Nos. 27, 26, 30, 32, 31, and 24. The small-leaved variety, with beautiful silvery-marbled leaves, is No. 34. For miniature growth or comparatively low walls, and close leaf-growth, Nos. 21, 33, 19, 41, 34, 26, 23, 31, may be chosen.

Many of the above variegated varieties are finely adapted for forming belts or margins to the Flower Garden, the slowly-formed lateral growth of the Ivy being specially suited, and equally so for training around the wicker or basket work around beds. The smaller kinds, with elegant silver margins are also very effective in blending with plants, for suspended Baskets in Conservatories, &c.

THE LARGEST HAMBURGH GRAPES.—Shown by Mr. Meredith, of Garston, near Liverpool, weighing no less than 9 lbs. 8 oz. It was shown stalk downwards, and had six shoulders, each equal to the size of an ordinary bunch, the whole forming quite a pyramid of jet-black berries covered with a beautiful bloom. To Mr. Meredith, therefore, belongs the merit of having shown the heaviest bunch of Black Hamburgh Grapes yet recorded, and the judges marked their sense of his marvellous success by awarding him the highest medal at their command.—*Gardener's Chronicle*.

BEGONIAS AT THE LONDON HORTICULTURAL SHOW.—Mr. Young had a superb six, and was placed first; they were President Van den Hecke, Grandis, Regina, Manoel de Silva Brushy, and Nonconformist, this is a fine variety, leaf bold in coloring, margin metallic green, with large grey spots, broad band of dull silvery grey, centre dark bronzy green; Secretary Morren. Second, Mr. Hunt, with Marshalli, this has the leaf overspread

with silvery grey, with narrow dark green divisions, and dark green zigzag margin, Madame Thibaut, Grandis, Lord Clyde, Manoel de Silva Brushy, and another. In Mr. Collison's lot, Duchess of Brabant was fine; in Phippen's, Argentea was conspicuous for beauty, and Queen of England was decidedly better than Rex.—*Cottage Gardener.*

ZYGOPETALON MACKAI is recommended by Mr. Brown, of the Tooting Nursery, as a valuable winter-blooming orchid. Its season for flowering is December and January, and it lasts seven weeks in perfection. The flower-spikes grow about three feet in height, and the flowers are about four in. across, the sepals and petals greenish-yellow, mottled with brownish-crimson, the lip large, French white, striped and veined violet. This species will do well in the cool house; the temperature in winter should range from 40° to 50° by night, with a rise during the day, a little air being given on mild days, and admitted just over the pipes. In summer, if hot and dry, give an abundance of air and water, and dispense with fire-heat.—*Gardener's Chronicle.*

ROSES AT THE LONDON EXHIBITION.—One whole side of the great tent was occupied with cut Roses. No such Roses have been shown before this season, and they literally made of it a "Rose Show," the profusion and the quality of the flowers making an end instanter of all possible question as to the excellence of the exhibition. There were no less than twelve boxes from Messrs. Paul & Son, of the Old Nurseries, Cheshunt, and six boxes from Mr. C. Turner, of Slough. This was a grand sight—the flowers were so fresh, so perfect in character, so various in selection. Amongst the varieties were fine examples of Marechal Neil, the best of all yellow Roses, Anna Alexieff, Anna de Diesbach, Beauty of Waltham, Charles Lefebvre, Comtesse de Chabillant, Duc de Rohan, General Jacqueminot, John Hopper, Jules Margottin, La Ville de St. Denis, Lord Macaulay, Louise Odier, Madame Clemence Joigneaux, Madame W. Paul, Madame de Cambaceres, Madame Julie Daran, Madame Vidot, Marechal Vaillant, Maurice Bernardin, Mrs. C. Wood, Olivier Delhomme, Prince Camille de Rohan, Senateur Vaisse, Vainqueur de Goliath, Alphonse Belin, Admiral la Peyrouse, Baronne de Kinkelin, Centifolia rosea, Eugene Verdier, Kate Hansberg, La Duchesse de Morny, Louise Damaizin, Madame Victor Verdier, Pavillon de Pregny, Paul de la Meillerez, Triomphe de Villecrenes, &c. Among the smaller exhibitions

of cut Roses was a collection from Mr. Holland, gardener to R. W. Peake, Esq., Isleworth, which were equally remarkable for size and freshness, and for the remarkably fine quality of a few peculiar varieties which are rarely well shown. In this collection were examples of August Mie, Paul de la Meillerez, Marechal Forey, Alpaide de Rotalier, Victor Verdier, Duchesse d'Orleans, Louise Odier, General Washington, Narcisse Admiral Gravina, Souvenir de Leveson Gower, Gloire de Dijon, La Reine, Madame Victor Verdier, La Ville de St. Denis, Madame Charles Wood, Lamarque, George Prince, Deuil de Prince Albert—this flat, curious, ugly, and yet (if the anachronism may be allowed) beautiful Rose was better shown in this collection than in any previous case this season; John Hopper, Madame Vidot, Francois Arago, Jules Margottin, Lord Raglan—here was another bad but beautiful Rose wonderfully well done, and looking like a gem of the first water, the color unique and exquisite; Acidalie, Madame C. Crapelet, Mrs. Rivers, Senateur Vaisse, Comtesse de Chabillant, Prairie de Terre Noir, Anna Alexieff, General Jacqueminot, Empereur de Maroc, another of the quasi-good Roses in charming condition, the form being in this case very nearly that of a perfect Rose, and there need be nothing said of its matchless color; Beauty of Waltham, Triomphe de Rennes, very pure and golden; Eugene Appert, here again Mr. Holland distinguished himself, this bad, but charming Rose had such a character as proves it to be capable of better things than rosarians usually make of it. Good collections were also shown by Mr. Vockins, of Lewisham, and other exhibitors.—*Cottage Gardener.*

LORD PALMERSTON GERANIUM.—This variety has only been introduced into American gardens during the last year. The following account of it, when it first appeared in England, is from the *Cottage Gardener*:—

There are a very few of your readers who do not regret the absence of Mr. Beaton's articles from your Journal. Those of us who are interested in the cross-breeding of flowers, especially bedding plants, have felt disappointment as week after week your Journal has appeared on our tables, and no lively pleasant page with the well-known signature at the bottom. One of his articles, by-the-bye, sent me on a fool's errand, for no sooner had I seen the Crimson Minimum and Lord Palmerston, especially the latter, than off I went to the nearest nursery in hopes of obtaining both. But I was told at once, "Oh, you are too fast, sir,

by a year or two; these Geraniums are only sent for trial, and will not be in the trade for, perhaps, a year or two." That same Lord Palmerston, however, has appeared this year. Lord Palmerston is a magnificent Geranium. There was, I believe, only one bed of it last year at the Crystal Palace, on the east side of the Rose Mount—one of the round beds—it caught my eye directly. Its color is very bright, and the trusses are absolutely immense. For large beds and where a strong and attractive effect from a distance is required, it is the finest of the whole breed. I confess, however, to a weakness in favor of a more dwarf style of growth. If such a truss as Lord Palmerston could be obtained on a more prostrate-growing and shorter jointed Geranium, I should say that, so far as that color is concerned, we had reached perfection.

FUNGUS SPOTS ON PEARS.—These spots have undoubtedly originated in the growth beneath the real cuticle, of a minute brown parasitic Fungus, *Cladosporium dendriticum*, which has destroyed the vitality of the subjacent tissue, but has not sufficient vigor of growth or greediness of moisture to make it penetrate deeply into the fruit. Where moist decay has supervened, it is apparently due to other Fungi which have accompanied or replaced the *Cladosporium*. This mould has of late years been a dreadful pest both to Pears and Apples, in some cases being virulent enough to destroy or greatly impair the young shoots, and its growth beneath the cuticle makes it almost impossible to apply a remedy. After a time, indeed, the cuticle bursts, to allow the fertile threads to break out into the air and bear fruit, but the mischief is then already done, and it is notorious that even were the habit different, dark threaded Fungi are far less destructible than those which are colorless.—*M. J. B., in Gardener's Chronicle.*

SEQUOIA GIGANTEA.—Professor Brewer, a distinguished American Botanist, in a letter to Sir W. Hooker, says:

"An interesting discovery this year has been of the existence of the big trees in great abundance on the western flanks of the Sierra Nevada, in about lat. 36° or 37°. They are very abundant along a belt at 5000-7000 feet alt., for a distance of more than 25 miles, sometimes in groves, at others scattered through forests in great numbers. You can have no idea of the grandeur they impart to the scenery, where at times a hundred trees are in sight at once, over 15 feet in diameter, their

rich foliage contrasting so finely with their bright cinnamon-colored bark. I found trees larger than they occur further north (in the Calaveras and Maipula groves). The largest tree I saw was 106 feet in circumference at 4 feet from the ground. It had lost some butteresses by fire; it must have been at least 115 or 120 feet when entire; it is 276 feet high. The Indians tell of a much higher tree' which I did not see.

"There seems no danger of the speedy extinction of the species, as it is now known in quite a number of localities, and, contrary to the popular notion, there are immense numbers of younger trees of all sizes, from the seedling up to the largest. There has been much nonsense and error published regarding them.

"I have no doubt of the true generic relations. I think that no one who is familiar with both species *in situ* would separate them generically from the *Sequoia sempervirens*, also abundant in this State, and fully as restricted in its distribution; nor do I think the names of *Wellingtonia* and *Washingtonia* can be duly respected

SENSITIVE LEAVED PLANTS.—The extreme sensibility of the leaves of *Mimosa sensitiva* and *pudica*, not only to light, but to the slightest touch of any extraneous body, is a good example of the exquisite sensibility of leaves. In dull, sunless weather the leaves never fully expand; whilst at night the leaflets fold up close together. But the most remarkable instance of the kind is, perhaps, to be found in the spontaneous motion of the leaves of that very singular plant the *Hedysarum gyrans*. Its motions are independent even of the agency of light, or of any other stimulus whatever, only requiring the warm temperature of the stove, with a perfectly still atmosphere, to be performed in perfection.—*Cottage Gardener.*

COOL ORCHIDS.—In the following are a fine showy species, that will succeed in a house with a temperature varying from 45° to 50° in winter:—*Anguloa Clowesii*, *A. uniflora*, *Arpophyllum giganteum*, *Ærides Warneri*; *Barkeria spectabilis*, *B. Skinneri*, *Brassavola Digbyana*; *Cattleya Skinneri*, *Cœlogyne cristata*, *Calanthe vestita*, *Chysis Liuminghi*, *Cypripedium barbatum*, *C. venustum*, *C. insignis*; *Dendrobium speciosum*, *D. nobile*, *D. pulchellum*; *Epidendrum amabile*, *E. atropurpureum*, *E. macrochilum*, *E. aurantiacum*, *E. Skinneri*, *E. vitellinum*; *Leptotes bicolor*, *Lycaste Skinneri*, *L. aromatica*; *Mormodes aromatica*; *Odontoglossum grande*, *O. Insleayi*, *O. membranaceum*,

O. nævium, O. Pescatorei, Oncidium ampliatum, O. flexuosum, O. divaricatum, O. cupreum; Pleoine lagenaria, P. maculata, P. Wallichiana; Sophronites cernua.

NEW ROSES OF 1865.—It was anticipated some time ago that the fine seasons of the two or three past years would be productive of great numbers of seedling Roses. From the information received from various quarters the anticipation is likely to be fully realized. It is quite natural that the raisers of seedling Roses should be desirous of putting forward their productions. It is quite right that their merits should be recognized; but the experience of the past shows that the improvements effected in the "queen of flowers," are gradual, and that out of the great number of varieties annually sent out very few retain a place for a length of time. A word of caution to our Rose friend will not be deemed out of place. They will do well to be careful in their selection of new kinds, and not to slight the information that appears in these columns from time to time from various sources.

Among the earliest announcements are those of M. Eugene Verdier, of Paris—a name that has acquired honorable distinction among rosarians.—Making a slight allowance for differences of climate and soil, M. Verdier's descriptions have proved truthful as regards the kinds he has hitherto offered, and reliance may be placed upon his selections. It should also be remembered that to M. Verdier we are indebted for Prince Camille de Rohan, undoubtedly the best dark Rose yet sent out; also for Madame Charles Wood, Duchesse de Morny, Rushton Radclyffe, Madame Victor Verdier, H. Laurentius, and other fine varieties. He also sent out, but did not raise Maréchal Neil, the greatest acquisition to our yellow Roses since the appearance of Celine Forestier, and promising to surpass all that we yet possess of that color.

The following are M. Verdier's announcements for the next season. The translation is made from his own circular. The first two are Bourbons, the remainder Hybrid Perpetuals:—

Julius Cesar, very vigorous, with stout dark-green branches; thorns almost straight, strong and blackish; leaves composed of five broad and thick leaflets, delicate green; flowers large, about 10 centimetres (4 inches) in diameter, in clusters of from three to eight, very full, well formed, beautiful deep rose cerise.

Madame Charles Baltet, seedling from Louise Odier, very vigorous, branches robust distinct

green, thorns strong, straight and reddish; leaves composed of five bright green leaflets; flowers large, about 9 centimeters in diameter ($3\frac{1}{2}$ inches,) in clusters of from four to six, perfectly imbricated; beautiful fresh delicate rose.

Alba mutabilis, seedling from Jules Margottin, very vigorous, with brownish-green branches; thorns long, straight and blackish; leaves composed of five bright green leaflets; flowers large, about 9 centimeters in diameter ($3\frac{1}{2}$ inches), full, white, tinged with rose, becoming completely shaded with rose in the course of expansion.

Charles Rouillard, very vigorous, with straight dark-green branches; thorns few, straight or nearly so, reddish; leaves composed of three to five leaflets, deep green; flowers large, about 10 centimeters in diameter (4 inches), of the most perfect form, full; beautiful delicate rose with brighter centre.

Fisher Holmes, very vigorous and free-blooming; branches dull green; thorns short, straight, and yellowish, leaves composed of five dark-green leaflets; flowers large, about 9 centimeters in diameter ($3\frac{1}{2}$ inches), full, imbricated like a Camellia; magnificent scarlet red; very fragrant.

John Grier, very vigorous, with dark green stout branches; thorns strong, slightly curved, yellowish; leaves composed of five apple-green leaflets; flowers large, from 8 to 9 centimeters in diameter ($3\frac{1}{2}$ to $3\frac{1}{2}$ inches), full, well formed, globular, very fragrant; beautiful clear red or dark rose, reverse of petals silvery.

Jean Lambert, vigorous, with dark-green branches; thorns numerous, straight, and yellowish; leaves composed of five dark-green leaflets; flowers extra large, about 12 centimeters in diameter ($4\frac{3}{4}$ inches); flame color, shaded fiery red; the buds are often extraordinary, and resemble a pigeon's egg.

Mlle. Marguerite Dombain, seedling of Rose de la Reine, very vigorous, with straight, bright green branches; leaves composed of five to seven delicate green leaflets; flowers extra large, from 12 to 14 centimeters in diameter ($4\frac{3}{4}$ to $5\frac{1}{2}$ inches), full, globular, well formed, and very fragrant; beautiful blush rose, very delicate, and very fresh.

Prince de Porcia, very vigorous, with dull green branches; thorns sharp, numerous, yellowish; leaves composed of five deep green leaflets; flowers large, about 10 centimeters in diameter (4 inches), full, well formed; deep vivid vermilion.

Professeur Duchartre, very vigorous, with bright green branches; thorns short, slightly recurved, yellowish; leaves composed of five pale green leaflets; flowers large, from 9 to 10 centimeters in diameter ($3\frac{1}{2}$ to 4 inches), in clusters of four and six, full, globular, well formed, very fragrant; bright red, reverse of petals silvery.

Souvenir d'Abraham Lincoln, seedling from Cardinal Patrizzi, vigorous, with reddish branches; thorns sharp and brown; leaves composed of five to seven reddish green leaflets; flowers medium size, from 7 to 8 centimeters in diameter ($2\frac{3}{4}$ to $3\frac{1}{2}$

inches), full, well formed; crimson, tinged with fiery red, purple, and rose.

William Rollissoa, very vigorous, with bright green branches; thorns sharp and slightly curved, yellowish-brown; leaves composed of five bright green leaflets; flowers large, about 9 centimeters in diameter ($3\frac{1}{2}$ inches), full, globular; magnificent vivid cherry red.

The following new Roses were obtained by Messrs. Gautreau and Granger, and rewarded with medals at the exhibition of Brie-Comte-Robert:—

Camille Bernardin (Gautreau), seedling from Général Jacqueminot, very vigorous, with dark-green branches; leaves composed of five bright green leaflets; flowers large, about 10 or 11 centimeters in diameter (4 and $4\frac{1}{2}$ inches), full, well formed; vivid red, edged with white; free blooming and very fragrant.

Carl Coers (Granger), very vigorous; wood and foliage dark green; thorns rather numerous; flowers very large, from 10 to 12 centimeters in diameter (4 to $4\frac{1}{2}$ inches), full; deep purple.

Exposition de Brie, very vigorous, with reddish-green branches; thorns short and reddish; leaves composed of five deeply-notched leaflets, apple-green; flowers large, about 12 centimeters in diameter ($4\frac{1}{2}$ inches), full, well formed; beautiful dazzling vivid red.

From the foregoing copious, and in some respects superfluous descriptions it is easy to point out one variety likely to prove an acquisition—viz: *Mlle. Marguerite Dombain*. That it is the best of *M. Verdier's* seedlings is evident from the description, and from the fact that he intends to publish an engraving of it. The last three are probably good, and should they turn out so, *Carl Coers* will also be an acquisition for the sake of its color, which is still a desideratum. Nearly all the others are too small for the prevailing taste, although under the high cultivation of the Rose in this country, the actual size of the flowers obtained is greater than in France.—ADOL. H. KENT, *Blechingly, Surrey, in Cottage Gardener.*

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

The Annual Meeting of this Society will be held at Harrisburgh, Pa., on the 17th of January, 1866.

This, though one of the youngest of our Pomological Societies, has achieved an eminent position in character and usefulness. From the central point selected for this meeting, it will probably be one of the best attended of all that have been held. The Rev. James Colder is the President of the Society.

PENN'A. HORTICULTURAL SOCIETY.

The November meeting was held on the 21st. of that month. Among the most attractive objects on this occasion were some splendid specimens of *Pitcairnia splendens*, from W. Joyce, gardener for M. W. Baldwin. The *Pitcairnia* belongs to what is known, amongst gardeners, as the Pine-ap-

ple family. The leaves of this species are longer and larger than most other species usually grown. The spikes of scarlet crimson flowers were about 2 feet long. It is one of the most showy hot-house plants blooming at this season.

The same exhibitor had a very fine *Sonerilla margaritacea*, covered with bloom; and we exhibited the finest ever shown before the Society,—also a very fine specimen of *Macillaria picta*, a curious orchid of delightful fragrance, which has also the merit of being growable in a warm greenhouse.

Messrs. P. Mackenzie & Son exhibited the twilled Japan Chrysanthemum, (*C. japonicum*) also the beautiful lacinated Japan variety, of which we gave a handsome illustration in our last volume.

The exhibition of Chrysanthemums was not near equal, in the good growth of the specimens, to former years. The first and only premiums in all the classes were awarded to Donald McQueen, gardener to Joshua Longstreth.

To Mr. Hibbert, gardener to Fairman Rogers, the best display of Greenhouse plants was awarded—mostly kinds we have named on former occasions.

There were the usual fine displays of bouquets, designs and baskets of cut-flowers, for which Donald McQueen had premiums for the former, and W. Joyce for the latter.

The best 12 varieties of Pears was awarded to Hon E. Satterthwait,—they were Lawrence, Easter Beurre, Doyenne d'Alençon, Chaptal, Catillac, Winter Nelis, Beurre d'Anjou, Duchesse d'Angoulême, V. of Winkfield, Urbaniste, G. Moreau. The best three bunches of foreign Grapes to W. Joyce, for Black Frankenthal, and Palestine.

To Mr. A. L. Felten, the Vegetable Committee awarded the premium for the best collection of vegetables, which were equal to any ever before exhibited at this season. We noticed amongst the novelties fine specimens of Early Goodrich Potato.

The best stalks of Celery was awarded to F. O'Keefe, gardener to L. Heyl. The best Brocoli to A. L. Felten, also the best Cauliflower; and to F. O'Keefe for Brussels Sprouts.

A premium having been offered at a past meeting for a collection of *variegated-leaf* plants, and another for a collection of *ornamental leaf* plants, and a plant of *Allocaasia metallica* having been in the former lot, which gained a premium, objection was made to the premium being confirmed by the Society, on the ground that when such a classification was made by the Society, it should not be considered a "variegated-leaved plant." The question was referred to the Committee on Botany for decision, which reported that it was not to be considered a variegated-leaved plant.

The following gentlemen were elected officers for the ensuing year:

President—D. Rodney King.

Vice-Presidents—M. W. Baldwin, Caleb Cope, Robert Buist, Charles Harmar.

Corresponding Secretary—Thomas Meehan.

Recording Secretary—A. W. Harrison.

Treasurer—H. A. Dreer.

Professor of Botany—Thomas P. James.

Prof. of Hort. Chemistry—James C. Booth.

Professor of Entomology—S. S. Rathvon.

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Hints for February.



FLOWER-GARDEN AND PLEASURE-GROUND.

There are few things which add more to the beauty and interest of a place at all seasons of the year than the judicious employment of hardy flowering shrubs.

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. alla*, 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 north of New York; but the small-leaved (*Aleagnus 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 cul-

tivated, 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, bring 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 Mezeron 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 Spiroceas, (as *prunifolia*, *Blumeana* and *Reevesii*), every one wants, as well as the *Weigelia 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 shrubby 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 most 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 Lilaes, 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 and 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 American Elm.

Bearing our Southern friends in mind, so many of whom are again amongst our regular readers, we may add here, what for northern readers would be better said next month, that all pruning operations be ended as soon as possible, lawns rolled as soon as they can be after the frost leaves them, and while still wet, in order to fill up the inequalities, apply a top-dressing of bone-dust, guano, wood ashes, or whatever other "seedless" manure may be adopted, before the rolling. Arrangements should be made also for spring planting, by getting good soil hauled near where it may be wanted, for it is a sad loss of time to plant in poor ground, and the holes may even now be dug and the new soil put in. Planting, however, should not be done until the soil is quite dry, so that the earth can be crushed finely in about the roots by the feet, instead of being pressed closer together. Avoid watering the roots at planting. If they appear dry, dip them in a tub of water if small, or sprinkle with a water pot if large, before setting. The soil immediately about the fibres will then adhere to them, and while the water thus benefits, the soil is not rendered a mass of mud. If the trees appear very dry, prune accordingly to the degree of probable injury. If a tree have a large mass of fibrous roots, and these not dry, and the top not very large, no pruning will be necessary. If the roots are injured, prune them too a little. If the injury to the root or top be very great, prune the top severely. No tree or shrub need die of transplanting, no matter how great the injury, unless entirely dead. If there be any life at all a severe pruning will save it. It is often recommended to bury up entirely in soil for a few days plants that become dried somewhat during removal, which usually does pretty well; but we would prefer to prune away a portion of the branches.

FRUIT GARDEN.

Pruning of fruit trees, when required, should be proceeded with at favorable opportunities.

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

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

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

As to whether underdraining, although a benefit in the abstract, is sufficiently so as to be a profitable operation in many cases, is a question deserving some thought before embarking largely on labor and materials, costing say a dollar against an improvement not worth more than one or two per cent. per annum, is not the most judicious expenditure. When one has a very wet piece of ground there can be no mistake about the value of underdraining it, providing one has no other ground fit for fruit trees that is not wet; but when the ground is naturally in fair condition, it would be well to go by the advice of some practical man, or at least experiment on a small scale first, before embarking largely in the improvement.

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.

VEGETABLE GARDEN.

A south-eastern aspect is best for a hot-bed, and it should be well sheltered from winds on the cold quarter.

All those kinds that are grown for their leaves or stems, require an abundance of nitrogenous manures; and it is useless to attempt vegetable gardening without it. To this class belong cabbage, lettuce, spinach, etc. The other class which is grown principally for its seeds or pods, as beans, peas, etc., do not require much manure of this character, in fact they are injured by it. It causes too great a growth of stem and leaf and the earliness—a great aim in vegetable growing—is injuriously affected. Mineral manures, as wood ashes, bone-dust, etc. are much better for them. For vegetables requiring rich stable manure, it is best that they have it well rotted and decayed. Nothing has yet been found so well fitted for the purpose as old hot-bed dung; though to the smell no trace of "ammonia" remains in it.

In managing the vegetable garden the highest excellence should be aimed at. This is the chief source of pleasure in a garden. If one can take no pleasure in his garden,—if the watching of the beautiful processes of nature in furnishing him food, and the many lessons they teach him, which he in a thousand ways can so pleasurably and profitably apply, have no charms or attractions for him,—he had better give up gardening, for assuredly in most cases,—even to 99 in 100 instances,—the market gardener will bring the vegetables to his own door cheaper than he can grow them. Amateur gardening should primarily be pursued for the lessons it teaches, and the pleasure it affords; when it ceases to do this it should be abandoned.

Those who have hot-beds 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 hot-bed 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.

ROGERS' HYBRID GRAPES.

BY JOHN SAUL, WASHINGTON, D. C.

There appears to be considerable diversity of opinion respecting these Grapes. I am one of those who think favorably of them after fruiting the same three or four seasons. When Concord was first sent out, many excellent cultivators condemned it as "too Foxy," "very pulpy" "and inferior;" carried south and south-west the grape improved; what was an inferior grape in New England proved a very superior grape in this latitude—the pulp nearly or quite disappearing—and further south still—in Georgia for instance—it is again better—an excellent grape. What is true of the Concord in this particular, will, I have no doubt, be equally so of these Hybrids; the farther south they are carried the better they will be found. I arrive at these conclusions from the fact, that with me many are excellent, far superior to any descriptions I have read of them from northern growers.

That they are true Hybrids there is not the least doubt in my mind.

I will describe a few of what I consider the best.

No. 1. Strange that the first should, with me, prove the best, but so it is—the bunches are large, with large oval berries, light reddish color; no trace of pulp; exceedingly sweet and delicious; late, ripening with Isabella; one of the finest of grapes.

No. 2. Berries round, black, good flavor; a fine grape, but not to be compared to No. 1.

No. 4. Is early, very sweet and pleasant; berries globular, black; a little pulp, but in all an excellent grape and deserves an extensive trial.

No. 9. Appears to be between Chasselas and a native; bunches medium sized, compact; berries globular, reddish color, bearing, in appearance and flavor, a resemblance to Grizzly Frontignac; scarcely a trace of pulp; a superb grape.

No. 12. This variety has not been noticed as much as others, yet I am inclined to think it will prove valuable south; it should have a trial.—Bunch and berries large, the latter globular, deep amber color, the side next the sun suffused with red; very sweet, but pulpy.

No. 13. Has bunches of medium size; berries globular, reddish color; very sweet and good, but has pulp.

No. 15. This variety has probably been described oftener than any other, and it remains for me only to say it retains, with all, its good qualities here. Berries reddish; flavor rich and fine; an excellent grape.

No. 19. Here we have an early and very good grape; berries globular, black; flavor sweet and rich; a good bearer, and may be classed among our best early grapes.

No. 22. Has compact, well formed bunches; berries globular, very sweet and delicious, with a trace of pulp; a very fine grape.

No. 33. Bunches well formed; berries oval, black, sweet and good, with little pulp; early and good.

No. 34. Has large bunches, with immense globular berries, as large as moderate sized plums, black, sugary and good, with little pulp; may prove an excellent market grape.

[Varied experience with fruits in different sections of the country is the best way to form an idea of the *general* character. This is the first series of observations on Rogers' Hybrids from the neighborhood of Washington we have had, and as such very interesting.—Ed.]

VEGETABLE PHYSIOLOGY.

BY J. STAUFFER, LANCASTER, PA.

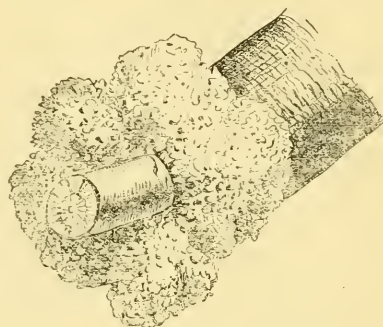


Fig. 1

The accompanying illustrations show the branch of a young Pear tree before separating it from the trees. The history is briefly this:

Mr. Daniel Engle, of East Donegal Township, in the County of Lancaster, Pa., has a thriving Pear tree, a branch of which was broken during a storm in January 7, 1857. Mr. Engle tied up the broken branch, and left it, hardly expecting it to keep up its vitality. However the branch kept a green healthy color, and threw off branches of young wood from 12 to 14 inches long, during the following spring and summer.

Fig. 2



The leaves were healthy and indicated no want of nourishment. In March, 1858, his attention was arrested by the singular condition of the wounded branch, on inspection he found that the heart-wood was perfectly dry and dead for at least one inch in length, while on either side were large granular tubers of sap formation, having minute spongiolo-like points or filaments; although the branch and leaves appeared quite healthy, the unsightly appearance induced him to sever the branch, which he afterwards regretted, as it prevented the further development of a desirable result, as to how long the branch would survive and flourish in such a condition.

Mr. Engle brought the branch to S. S. Rathvon, of this city, to exhibit the dead, dry central core of the branch, who gave it into my hands for further inspection. I took an accurate drawing of the same and recorded the facts with the following note:—

“It is evident that vitality was kept up during the spring and summer of 1857, through the fractured wood above it, some remaining vitality must have aided in keeping it alive by a minute quantity of sap still finding its way, if not fed by the numerous rains, developing spongy granules, which seemed disposed to send out rootlets or spongiolles, and would, no doubt, have thrown out regular roots had clay (properly prepared) been put around the base of the fractured stem, and kept moist; in due time it might have been separated and planted, and formed a new tree on the Chinese plan.”

In 1864 I stated the facts of the case in a letter to Dr. A. Gray (Harvard University), he deemed it of interest, and desired me to publish it for the benefit of fruit-growers.

I have deferred doing so until now. In my letter to the Dr., I indulged in Philosophising, somewhat

after this fashion—"Nature is as prolific in resources as in means—means are infinite—that is, without number, the case of fracture, above noticed, is an apt illustration. The natural forces of the tree all co-operate to repair the injury and concentrate their powers upon the nearest possible point to the seat of the injury, or we may say, upon the extreme line of demarcation between the sound and the broken parts. It is not alone by the agency of the sap, that the life forces of the tree are kept in circulation, but the imponderable element of vegetable od, or, if you please, the refined particles of electricity, which ever clothe and protect and facilitate growth and restoration may in cases of injury be seen by the highly clairvoyant eye, to throw themselves out as by a projectile force from opposite directions on the line of fracture, as if to bridge the channel rent.

The grosser electrical then having acquired velocity by the new demand upon its powers, flies, as it were, to fill the vacuum, or to leap the point of disruption, and pursues its natural course, while the od reaching out on each side, with its strong attraction comes so nearly in contact from diverse directions as to cause a reconstruction of the parts, and we may see the finer streams or threads of electricity springing across from side to side. This is something on the principle of lightning flashing from one cloud to another less highly charged.

Now, if atmospheric conditions were observed, and conducting elements were bound closely to the wounded parts, there would be no difficulty in restoring the mutilated limbs in the case described.

When there is enough of woody fiber or texture to prevent separation, take a narrow strip of bark from any tree of the same species to carefully bridge or unite, waxing the outer edge of this bark and thus making it impervious. Then make a mixture of fresh earth and barn-yard loam, sprinkling in the mixture a handful of iron filings, which pervading the mass will facilitate the electric flow; or in many cases the bark operation may be dispensed with, an exerescence will be formed gradually extending from either side till a new covering of bark will be formed.

This is again on the same principle that a severed artery will put out a new section and restore the communication."

Dr. Gray objected to my term "od" and "clairvoyance," as belonging rather to a new school of transcendentalism with which our savans have no sympathy as yet. But terms mean nothing if we but get the idea of two conditions of electric matter, though invisible acts; nevertheless, just as the

magnet upon the needle, the interposition of glass, although a non-conductor to electricity, is no impediment to the magnetic force.

Dutrochet points out many resemblances between the common electric actions, and those of endosmose, concluding that in every essential circumstance these phenomena are exactly similar, so that very little doubt can be entertained that the passage of fluids by endosmose and exosmose depends on electric influences; in short, that on the internal and external surfaces of the membranaceous bags being brought into opposite states of electricity, by the action of the fluids, differing in density, or chemical composition, and applied, the one internally, and the other externally, the phenomena takes place.

One very striking point of argument confirmatory of this conclusion, seems to be that an elevation of temperature powerfully increases the electric action, as well as ascent of vegetable juices; the great difficulty hitherto encountered in the theories, explanatory of the circulation of the juices of plants, was to explain by what means the sap both ascended from the roots upwards, and descended by the leaves and bark. This difficulty can, however, be satisfactorily overcome by the ingenious discoveries of Dutrochet. It may be remarked, also, how appropriately the spongioles of the radicles are constructed to produce endosmose.

I forbear to say more on this topic, as my communication is already much longer than it was intended to be.

P. S.—By placing a cambric needle on one side of a plate of glass and a common horse-shoe magnet against the glass on the opposite side, the needle will follow the magnet to the top of the glass and be found to leap to it. The intervening plate of glass is no obstacle to the attractive force; this is known to many school boys, and yet some men are wholly ignorant that such is the case.

POMOLOGY.

BY YE COMMITTEE-MAN.

Your strictures, Mr. Editor, on the so called Science of Pomology, were, no doubt, well meant, and I am not prepared to say that your ridicule of Committee-men was not well deserved; but had you reflected on the difficulties they have to contend with in the performance of their duties you would not have called them such hard names; and I now propose to give some few of the qualifications necessary for ye Committee-man.

We will take it for granted that he is perfectly

familiar with all the lesser fruits, and that he knows at a glance the 400 varieties of Strawberries, and 493 of Gooseberries, described by Johnson above 20 years ago; but also the 400 of Cherries, 71 of Raspberries and Blackberries, 65 of Currants, Mulberries and Berberries, together with 348 of Peaches, 420 of Plums, 216 of Apricots, Nectarines and Figs, and 112 of Melons, &c., all of which are described by Downing in 1857; and with which ye Committee-man must be familiar, together with all the new sorts introduced since that time; many of these, it is true, are synonyms, and some of them were out of fashion before ye Committee-man was born, but that is neither here nor there, he must know them all or he is not fit to be ye Committee-man.

Now having disposed of the smaller and comparatively trifling sorts we will proceed to the more important and well known sorts, viz.: Grapes, Apples and Pears.

Of Grapes (without going back to the times of Noah and Speechly) we have it stated that there are about 2300 varieties, 1400 of which were tested at the gardens of the Louxemburg about 60 years ago; Johnson describes 489, and Downing 312 sorts, many of these, are of course, synonyms and duplicates, the Black Hanburgh having 39 different names—these are all known as the foreign varieties; but we now come to the natives, of which their name is legion—the writer has seen 100 named sorts, not one of which was a decided improvement on the well ripened Catawba or Isabella, yet each of these has, doubtless, been at some period of its history “the very best native grape known,” yet ye Committee-man must know all of these, and is expected to taste them too, at some period of his life. These do not include the countless seedlings, the 45 hybrids of Rogers and the cross breeds innumerable of other growers, on all of which ye Committee-man must keep himself posted up, or he is not fit to fill the office.

Of Apples Downing describes only about 1100 sorts (including synonyms,) and as this is a strongly marked fruit, ye Committee-man would have an easy time of it, were it not that no two apples of the entire crop of one kind and exactly alike, ye Committee-man must, therefore, first master the 1100 named sorts, and then study the individual character of each apple before he is competent to act knowingly and not to quarrel with his colleagues as to the identity of those sorts, one sour the other sweet, and the third entirely different in shape and flavor from either, which is true, because ye Editor says so.

We now come to Pears. It has been stated that we have above 2000 varieties, but Downing only gives us 1239 names, all of which ye Committee-man knows perfectly, but he is not prepared to say that he is as well acquainted with Van Mons' 80,000 seedlings, and a few thousand more of Knights' cross breeds; to be sure many thousands of these were tested and discarded before he was born, but he is expected to have enjoyed a sort of pomological, antedated existence, and to know all of those sorts accordingly. Supposing ye Committee-man is now perfectly familiar with the 2000 well known kinds, the 80,000 each of Van Mons' Seedlings and Knights' cross breeds, he is also expected to know that the Butter Pear is not the Butter Pear, but the Doyenne Blanc, or any other of 29 names you may choose to call it.

The remarks already made in reference to the difference in the appearance of the same sort of apples, apply also to pears, only more so. The Rev. Beecher tells us of a tree “producing 184 bushels of pears of tolerable flavor,” but as he gives us no name for them, we have of this quantity no two pears exactly alike, and no name to any one of them; add to this the efforts of that rascal the cureulio, who adds to the confusion by stinging them into all sorts of grotesque shapes.

Taking it for granted that ye Committee-man has mastered the 7775 varieties of the various well known sorts of fruits, he finds, also, that his troubles are just beginning, for he has yet to dispose of the new sorts, and in so doing he must be very discrete, for the sale of a great many plants may depend on his dictum.

He must not admit, for a moment, that the last new “Sugar Grape” is not quite as sweet as sugar, nor that it resembles in the least an old and discarded sort, but he must say that “it is a great improvement on all others, and should be in every one's collection”—or should some one assure him “that he has a grape superior to all others,” he must at once admit that this grape is better than all the grapes owned by other people; and he would be most ungrateful if he did not say so, for has he not already been presented with a strong two year old layer, and a basket of the fruit, which he should say is “richly flavored and vinous, having an exquisite briskness that excites the salivary glands, and cleanses instead of clogging the palate;” and when an apple is shown for the first time, he must consult Downing to be sure it is not one of the 1100 sorts already known; and if a new pear is presented he must run through the 2000 well known kinds, and 80,000 seedlings and cross breeds innumerable.

merable, to be sure that some old sort is not to be palmed off as a new and superior one.

Now having got through with the legitimate business of ye Committee-man, he must be on his guard as to the tricks of the trade, which he is expected to detect and expose, for if a "Duchesse" of 2 lbs. weight is shown, he may justly suspect she has been subjected to washing of "copperas water," and he must see that the bloom on the big "Black Hamburgs" is not "calined magnesia," or that the overgrown, watery "Isabellas" have not been effected by "ringing"—and should the "Bonny Lass" come before him, he must not only see that she is "white, hardy, oblong and very handsome," but must look sharp that her 21 dwts. and 10 grains have not been produced by "suckling."

And now, Mr. Editor, you must agree with ye Committee-man that the Study of the Science of Pomology is the acquisition of knowledge under difficulties, both mental and physical, for it has been estimated that ye Committee-man must eat about a peck of pears and apples, and several pounds of grapes in tasting through a large display of fruits—if, therefore, you insist on him being a "humbug of the first water," do, I pray you, add some brandy to the water, or he may die of the cholera—and finally, Mr. Editor, do please hurry up "the proper person who is to be paid handsomely for doing this business well," and we will cheerfully resign in his favor.

CLERGYMEN GARDENERS.

BY ENTHUSIAST, ADRIAN, MICH.

FRIEND MEEHAN—You must have some ministers on your subscriber's list. May I preach a little bit of horticulture to them from your pages.

I have discovered a new system of gymnastics; rather newer I think than that of Dio Lewis. It is a curious question, quite too abstruse, which is best, heavy iron dumb bells, bladders, hooks and infinite tumbings and contortions at infinite risks of your neck; or wooden bells, and a snall poll a la Lewis. Never mind! Don't puzzle your mind, or break your back to settle this question. My newer system only dates back to

"when
A.Jam delved and Eve spun
Making it doubtful who was the gentleman."

I discard dumb bells and sticks altogether, and go in for cow-bells and sticks with spades or hoes on the end of them. Why not? If you must go through all those gyrations why not do it out doors, and in such a way as to stir the dirt? I like Mr.

Lewis' music to time the movements, but why not sing Hood's measures in the garden?

A spade, a rake, a hoe,
A pickaxe or a bell,
A hook to reap, a scythe to mow,
A flail or what you will.
And here's a ready hand
To ply the needful tool,
And skilled enough by lessons rough,
In labors' rugged School.

But to the point. Ten years ago I graduated from college a poor student, with a sickly, dead light of scholarship playing around my brain, and a body that had neither thought nor endurance. It was according to system. It was after the pattern of modern education. I had read and studied and crammed, and gradually woven my shroud around me to die in.

Never mind how, but gradually I began to cultivate flowers, my time was more and more spent in the garden—laying out a landscape parterre and cultivating such of God's thoughts as He entrusted to me. The result, briefly told, is a healthy body, a mind under control, seldom clouded by dyspepsia; an inestimable amount of joy and comfort in my work.

What I wish to say to ministers is, get out of your study, throw away pork and hot bread and mince pies and go to raising flowers; you preachers have not time to farm it extensively. Get on a bay nag, with a thunder storm coming up and you must start instanter for a sick bed, or to attend a funeral.—But a good, large flower garden you *can* attend to, and be on hand for all calls of duty. My custom is to walk a mile to my garden—which embraces one and a half acres of lawn, with about 60 beds of flowers—to work nearly every forenoon of the working season—come back with my basket of Roses, Dahlias, Fuchsias, Gladiolus, Heliotropes, Verbenas, etc., etc., and then, fresh from God's children, study and write. I write two sermons a week, superintend my Sabbath-school of 300 scholars, a Sabbath-school prayer-meeting, attend other prayer-meetings, and a boys' social in my study, and don't intend to break down so long as my flowers last. Ministers' sore throats voted a bore—dyspepsia kept out of sight—reason, *flowers*. And don't you see while you are at work thus over and beside your La Reines, Sydonies, Hermosies and Malmaisons, they compose your sermons for you, all you have to do is to put it down in ink. Rely upon it that one-third of your time thus employed will enable you to do twice as much mental labor in the rest of the day, and with far less effort.

First get Buist and Breck, take the MONTHLY,

buy a select list of seeds and plants, and go to work. You have preached patience, practise it now. Keep at it for a year, and then gold won't tempt you to stop. Throw tea and coffee to the pigs, for minister's nerves won't bear them; detest tobacco and get your stimulants in the garden. You will love plants, and sow your seeds too deep and have lots of trouble; but patience worketh experience, and experience hope—until you won't be ashamed of your garden.

I forget my text at the beginning, so append it as a peroration.

“Behold the lilies of the field.”

FORCING CHERRIES.

BY GERALD HOWAT, YONKERS, NEW YORK.

Forcing Cherries has not had the attention here that it deserves, perhaps from the fact that it is generally supposed that it cannot be done with profit; and gardeners and amateurs have a prejudice against them, it being considered useless to try them; it is something of the old saying, “you had better kill a dog than give him a bad name.”

As I have had general success with forcing them, I shall lay before your readers my system, hoping that it may be an inducement to them to try the forcing of them.

I, in fact, consider them less trouble and expense to force than any other fruit—grapes and strawberries excepted—and if they do not thoroughly succeed the first season, they will be sure to succeed fully the following, as one will then be able to notice any item rejected in the first season's working.

The late Mr. Caton Aiton, director of the Royal Botanical Gardens at Kew, in examining candidates for admission, one of his questions would be “could they force cucumbers, and how? did you ever lose any? No! Then you do not know how to save them.”

So with the above cherry forcing.

Cherries are a fruit that require a house to themselves to be properly managed at best to perfection. I secure trees in the spring from the nurseries, half standards, from six to ten years old, as I can get them; the stock that I get for forcing are the refuse of the nursery, not minding whether they are straight or crooked, barked or split, deformed in any way except the roots, those you can generally get at your own price. I get them in April, pot directly into my fruiting pots, which are six gallons; head well in, prune roots pretty close and clean. Compost, three parts good, strong yellow loam, got from fence or road side, fresh with the

grass attached, one part rotten dung, one quart of coarse bone-dust (to each plant) well mixed together, drain your pot well with broken shreds and laying the lumps of your soil at the bottom, when finished plunge them to the rim in a full south aspect, watering moderately when your wood (young) is about 6 inches in length; shorten to get fruit spurs, and water once a week with liquid manure, three parts water and one part liquid, June twice a week; July and August three times with half liquid and half water: after August clear water during their growth; they must be stopped to encourage fruit spurs and remove all water shoots; let your trees remain out of doors generally to the first of December to ripen the wood; remove to the forcing house on the 1st of January if wanted earlier; for the first ten days give plenty of air during the day, at night just sufficient heat to keep the frost out; the next ten days, thirty-five at night and forty-five by day; in a sun-shiny day admit air fully, bottom and top lights, you may raise your heat until your trees are in flower, from thirty-five to sixty; after the flower is shown and until the fruit is set is the critical point and the only one in all their management; this can be obviated easily, at least I have. Keep your house as near as you can from forty-four to fifty degrees; when your blossoms are about breaking, lay your plants down on their side, commencing at each end and laying towards the middle, letting your lower branches touch your floor or border of your house, placing under the stem a flower pot or two sticks thus X, letting your stem rest in the centre; up to this use liquid once a week; in this position they will not require much water; when doing it, turn them up and water. My reason for adopting this system is to obtain an uniformity of temperature which will be the case, they being in that position. We are all aware that a sudden rush of wind coming in will drive the heat to one particular part of the plant; sun will also affect one part of the house more than the other. I have even, in late forcing of cherries gathered green branches and thrown over my trees when in flower, during heavy sunshine. I keep my plants in this condition until they are stoned, then take them up, plunge or let them stand on the floor—I prefer plunging; I then syringe once a day, apply liquid manure, half and half, twice a week, until the fruit begins to color, then clear water and sparingly; after the stoning do not let your pots get dry, if so you will spoil your fruit in size; when swelling keep them going, temperature may run from fifty to seventy-five, this I regulate according to the time that I want my fruit; of course

the higher the temperature the more moisture you require. Give all the air you can when coloring during the day, avoiding chills in any case; when your fruit is set your troubles are over, and rest assured if you follow out this plan you will not say that cherries are not the hardiest of all fruit to force. If not near to nurseries and where it will not pay to get cherry trees from a distance, every spring after fruiting turn them out of the pots, shake off about one half the ball, head well in tops and roots, transplant them three or four feet apart, giving them one year's rest and commencing again as directed. But I prefer buying trees every spring, they are cheaper than all this transplanting by one half.

The following are the sorts that I use for forcing:

Downton, Early White Heart, Elton, Kirtland's May, May Duke and English Morello.

COLORS OF FLOWERS.

BY E. FERRAND, DETROIT, MICH.

"Errare humanum est."

Mr. Peter Henderson in an article published in the *Monthly* in March last, headed "Nature's Law of Colors, makes some very strange statements, he says:—

"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."

Now, I do not clearly understand what Mr. H. means, or Mr. H. is greatly mistaken, for without the least difficulty I will name to him several species which contain in their respective varieties the three colors, yellow, scarlet and blue. We have for instance in perennials: *Lupinus polyphilla*, *L. nanus*, both of the *bene* of *Delphinium formosum*, *D. sulphureus* and several others, unmistakably of a golden yellow; *L. Dunnettii* and *L. superba*, scarlet red. In the *Pentstemon*, other perennials which Mr. H. cultivates, there are *P. Dixonii*, *P. Hartwegii*, *P. Jeffreyanus*, &c., fine blue flowers; *P. Pei ho*, *P. splendens*, *P. Compte de Lambertii*, vivid scarlet, and there is *P. Lobbianus* of a rich yellow color; in the *Aquilegia* we find also those three colors: we equally find them in the *Hyacinths* and *Crocus*. We have *Habrothamnus elegans*, red; *H. magnifica* and *H. tomentosus*, yellow; *H. cyaneus*, blue. We have also those colors in *Orobis azureus*, *O. aureus* and *O. vernus flora roseo pleno* and very likely we have also in many other species.

The above citations may encourage the western correspondents of Mr. H. in the continuance of his labors towards getting a pure yellow *Verbena*; for my own part I would not value the latter so much as a real celestial blue one, as the yellow color is the most common with annuals and perennials, and the blue in flowers of all sorts are the rarest of the three principal colors of flowers—it is very seldom found in the ligneous plants, therefore I take this opportunity of recommending the following shrubs which are only half hardy, but deserve a place in every greenhouse, they are *Ceanothus azureus grandiflorus*, bunches of flowers 7 to 8 inches long, of the finest celestial blue; and *C. divaricatus*, flowers on a little smaller scale, this one with ever-green foliage.

FORMATION OF DEW.

BY A. FENDLER.

[Continued from page 9.]

Any thing incapable of producing heat, and placed so that it cannot take heat from adjoining objects will, in losing caloric, manifest very soon its reduced temperature to a thermometer brought in contact with it. As regards the crust of the earth, diminution of temperature one or two inches below the surface of the ground cannot so rapidly take place all at once by radiation ever so powerful even in clear calm nights, for after the ground has been warmed thoroughly by the sun, it does not so easily part with its amount of caloric, the latter being slowly conducted from particle to particle until it reaches the uppermost or radiating film of the surface and the radiating objects upon it.

The parallel drawn in the Magazine's article between the pitcher containing ice-cold water and the earth is not well chosen, for the whole mass of the earth, with the exception of a comparatively thin crust, down to its very centre contains constant heat. But the course of conducted heat through thick layers of rock is much slower than that near its surface. Hence, after an uninterrupted radiation of several days towards a clear sky, if the rays of the sun were extinguished for that period, the thermometer would soon show a considerable lowering of temperature even two or three inches below the ground in mid-summer, as it even now does two or three feet below the surface in the winter season of northern latitudes, when the sun sends his rays obliquely over those regions, imparting much less heat to the ground than is carried off by radiation.

If there was no radiation, vegetable and animal

life would be destroyed by excess of heat, and on the other hand, if radiation were going on in cloudy as well as in clear weather, organic life would be destroyed by excess of cold. But fortunately the laws of nature are well regulated, and operate harmoniously for the well being and the very existence of the inhabitants of this earth. So that when, with a clear sky and a calm atmosphere of a long summer's day, the sun is pouring his fiery caloric into the soil, the great excess of this heat is taken off again by radiation; and if on the other hand the sky is heavily overcast with clouds, so as to shut off the sun's warm rays from above, they at the same time shut off the escape of the rays of radiant heat from below.

But, although in summer the ground two or three inches below cannot show a very rapid diminution of temperature by mere radiation, there are many things upon its surface that will do so.— There are the blades of grass, leaves of herbs and trees, bunches of hay and straw, wool, feathers, chips and planks, especially the latter when laid over hollow places, so as to rest only with their ends upon the ground. Still these and many more objects cool down so rapidly because being bad conductors of heat they lose it by *radiation* much faster than they can receive it by *conducting* from below, especially when they project into the air, as grass and herbs do, which lose their heat so rapidly that under favorable circumstances their temperature has been observed to fall from 11 to 16 degrees F. below that of the superincumbent air.

From this it will be easily understood that in clear and calm nights, if the lower strata of the atmosphere contain a sufficiency of moisture, the first dewdrops will be condensed and deposited on those very objects above named, and frequently not only *after* sunset or towards morning, but even long *before* sunset. In windy weather, however, the *cooling* effect of radiation is nearly altogether neutralized, for the radiating objects on the earth's surface being constantly brushed by fresh particles of air, have their loss of caloric promptly restored by abstracting it from the passing air, and hence cannot acquire a temperature lower than that of the moving atmosphere, consequently no dew can be formed.

In connection with this subject may be mentioned another interesting phenomenon. Why is it that basin-shaped depressions of ground, especially when formed and encircled by long sloping declivities bare of timber but clothed with grass, are more subject to early frosts in autumn, and late frosts in spring, than elevated ground, ridges and summits

of hills? The answer is this: When in clear and calm nights radiation goes on rapidly through the blades and spikes of grass all along the sides of that basin-shaped valley, the particles of air in immediate contact with the radiating bodies are cooled first. Being cooler they sink to the ground and glide down to the lowest place they can find (for there is no wind to disturb them). Here they accumulate until the grass in the bottom becomes immersed in a shallow lake, not of water, but of cold air. Even after immersion the radiation from the grass is as active as ever, and thereby still more lowers the temperature of its surrounding medium. The elevated slopes and ridges fare much better, for they get rid of the cold particles of air almost as fast as they are cooled, and receive in their stead fresh, warm particles settling down from above, to take the place of those gone below. This process continues until the rays of the sun strike the bottom of that basin, warm the ground first, then the lowermost strata of the air, and in this way dispel fog and dew; or until a breeze springs up and spoils the whole operation at once.

The accumulation of cold air in such localities may sometimes be so great as to rise to a considerable height. And as this stagnant atmosphere is not only cold but also damp, it is very apt to kill the tender just opening flower-buds of peach and other trees, marking thus the very height to which that body of cold air has been standing.

A member of the Illinois Horticultural Society, in one of the meetings of that body, gave his experience in the following statement:

"It (the frost) took all the old trees, perhaps 10 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."

This took place although the trees were protected from the north and northwest.

Another member, trying to correct his predecessor's views on the cause of the above disasters, gives to radiant heat quite a new and strange effect, viz.: heating the trees instead of lowering their temperature. He says "the radiant 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," and "were it not for the radiated heat the mountain tops would be first to show foliage."

These are curious doctrines which, however, refute themselves and need no comment, except that the speaker may have had in view the reflected rays of the sun instead of the radiant heat of the earth. They go to show how little the true charac-

ter of radiant heat and the manner in which it affects vegetation generally, and trees in particular, is understood.

The term *radiant* heat is also often promiscuously used and substituted for *reflected* heat, which it is not, although it may be turned into reflected heat by reflecting surfaces. Radiant heat always cools the body from which it proceeds and follows its inherent tendency to diverge in all directions to spaces and objects of less caloric. Reflected heat, on the other hand, is bound to go wherever it is reflected to, whether it be upon objects of high or of low temperature, and never cools the body from which it is reflected. For an energetic display of *reflected* heat a polished metal surface is indispensable, while that same surface is the most retarding one to *radiant* heat.

There is no doubt that trees, especially when standing by themselves, lose heat by radiation from their branches, twigs and leaves as well as the more humble representatives of vegetation. The feeble caloric that, in radiating from the earth's surface, may happen to strike them is no compensation for what they lose so rapidly from the same cause.

Large bodies of smoke have an effect similar to that of clouds in retarding and partially shutting off radiation. Hence, in raising thick layers of smoke in clear, calm nights, at the time of flowering, the crops of whole peach orchards and vineyards may sometimes be saved, for by shutting off radiation we stop not only the cooling of the surface but also the cooling of the opening buds and flowers of trees and the air that surrounds them.

The most superficial observer, when looking towards any of our large manufacturing cities, must have noticed, especially in calm weather, the dense layers of smoke slowly drifting along or lazily floating over those busy centres of commerce and manufacture. The inhabitants of such a city, in looking up towards the sky, cannot form a correct idea of the heavy covering that floats overhead. To them it appears merely as a light haziness in the atmosphere.

That this smoke obstructs radiation, and considerably raises the temperature of the city atmosphere throughout the night from sunset until sunrise, the writer of this has endeavored to show in an article published in one of the Annual Reports of the Smithsonian Institution.

In some instances the temperature of the central part of St. Louis was found to be at sunrise as much as eleven degrees higher than the temperature two miles west of the court-house in a thinly built part of the city. It was only in the evening,

night and morning in clear, calm weather that these differences of temperature were noticed to take place, especially when there was a very light motion of the atmosphere from the west, so as not to allow the smoke to spread over that part of the city where my observations were made. At 2 P. M. the temperature at both places was nearly the same. Whenever a strong breeze was prevailing, or when the sky was overcast, no difference could be noticed in the thermometers of the two localities.

Here then we may find the reason why grape-vines and peach trees about the time of bloom, in the midst of large towns are in less danger of having their flower-buds injured by late frosts in spring than those outside.

GRAPES versus GRAPE-VINES.

BY J. M. JORDAN, ST. LOUIS, MO.

FRIEND MEEHAN—It would do my heart good to meet you; and if I do not take root, go to seed, or get so severely pruned *this* season, I hope next year to visit the east again, and then feel, for the first time, your friendly hand, and look on one I have long imagined to be a sort of living, moving monstrosity, from the many prunings, pinchings, smothering, cutting back, bending down, shortening in, and twisting on the one hand; and by the steaming, stretching, sunning, sprouting and propagating on the other, that you get from we poor miserable ignoramuses of grape mongers.

Well I suppose the reason we have never heard you complain is, when you have attempted to open your mouth to speak, we have filled it with a grape *vine*. Much like the stammerer who tried to explain to his nurse that he must be dipped but *once*, but could get no farther than "dip, dip, dip," until his head was again under the water.

So I imagine you are about to open your mouth, and here I hurl a grape-vine again at you, but I hope to have a little fruit on it.

I have been reading, with much interest, the many fine written articles on the vine and particularly the new era in Grape Culture, Nos. 1 and 2, by our friend Hussman, as published in the *Horticulturist*, and he shows by statistics that the propagation of vines are very profitable, he advises layering vineyards the first year planted, putting the green wood under the ground, and if it pays well, layer the second year.

Now, I have often seen vineyards turned into propagating fields without allowing them to fruit. So long as in these can be grown \$3 to \$500 worth of

vines to the acre, and until the vineyards are entirely ruined for fruit.

I have this year examined many vineyards. I have seen those in fruit and those layered. One man informed me he expected to make 2000 gallons of Concord wine per acre, had then made 1000 gallons from half acre (Sept. 20th) worth \$2.50 per gallon.

I have the reports from a large number of fruit growers of Concord, Hartford Prolific and Clinton, and \$1000 per acre has been the lowest estimate any one has put on the fruit sale, some as high as \$5000 per acre. Now I will challenge any vine propagator to show a like return.

I have spent the last seven years as a propagator, but being convinced that fruit raising and grape growing was the most profitable, I planted, in the spring of 1864, a vineyard, kept the vines well cultivated and tied up, and this year (1865) have realized \$600 per acre for fruit. If I wish to have one or five thousand vines to layer, I plant them 2 to 6 feet for that purpose exclusively. In selecting vines and planting a vineyard one should not do any thing without a *reason*; should study closely the *nature* of the vine, from whence it draws its nourishment; the best way to keep those component parts from being exhausted. We have done too much as others do, without knowing the reason for so doing. Every year's experience with the vines add many new ideas, and show a great amount if ignorance still on hand to be disposed of as best we can; but when I see the rolling hills and undulated prairies glowing with the luscious fruit of the vine; knowing we of Missouri are adding about 2000 acres of vineyards yearly, and believing the States of the west are doing the same. Seeing the amount of instruction furnished us through our valuable Horticultural Journals, I do believe there is a brighter day dawning when we shall plant the vine with as much certainty of success as we now invest in Government bonds, plant corn or wheat.

NOTES ON THE DECEMBER NUMBER.

BY R. DOUGLASS, WAUKEGAN, ILL.

On reading the *Monthly* for Dec., the following brief notes suggest themselves:

"Familiar Birds."

The writer is mistaken when he says "the Brown Thrush never disturbs fruits."

The Brown Thrush is rather partial to all soft skinned, pulpy, small fruits, without much acidity, such as Raspberries, Blackberries and the sweeter

variety of Strawberries, showing his good taste in preferring a Hooker, or Triomphe de Gand, to a Wilson. He likes a good, ripe May Duke Cherry, but you cannot fool him with an Early Richmond.

He is justly entitled to all he takes, as he has benefited the fruit grower by the destruction of insects alone, before the earliest fruit is ripe, enough to compensate for all the fruit he will destroy.

And who would not give a percentage of his small fruits in summer in exchange for the song of the "Brown Thrush" in spring.

"The Effects of Cold on Fruit Buds."

I agree with Dr. James Weed that the germ of the Pear is often uninjured when the cambium of the fruit spur is discolored in spring, for we rarely, if ever, see a Bartlett Pear tree that is not discolored, yet we get some very fine crops of fruit, and on cutting the spur, even at the time of gathering the fruit, we find only the current year's growth in a healthy state.

"Sowing Forest Tree Seeds."

I never remember of having seen so much valuable matter crowded into so little space, "a long article would tell a larger," but I doubt its telling "a clearer story."

If these less than 20 short lines were well studied by every grower of seedlings, I think 20,000,000 plants a low estimate for the number that would be grown annually in addition to what are raised in this country.

"Nursery Valuation."

In this State growing crops are exempt from taxation, hence nursery stock is not taxed.

"Standard Pear Early Bearing."

Standard Pears will bear on warm, gravelly soil much younger than on heavy, clay loam.

If root pruned, or transplanted when 2 years from nursery they will bear sooner than when treated in the ordinary way, summer pruning also expedites bearing.

On any ground Bartletts bear from at 4 to 5 years from graft; Belle Lucrative, Onondaga, Steven's Genesee, Flemish Beauty, about 6 years; White Doyenne, Seckel, 7; Buffum 8; Urbaniste, Tyson, 9; Dix, Beurre Bosc, and a few others of the "commonest kinds," have not fruited yet, although 10 years from graft.

FRUITING OF STANDARD PEARS.

BY MR. CHARLES F. SCHMIDT, PALISADES, N. Y.

In answer to an article on Standard Pear Trees in the December number of the *Gardener's Monthly*, I give my experience with about 600

Standard Pear trees, planted in 1859. Although many of them bore a few specimens in 1863 and 1864, they began only this season to produce what might be called a small crop. Some half a dozen Bartletts from a lot of 50 trees, which all had some fruit, bore about half a bushel each. It was nearly the same with Onondaga and Flemish Beauty, of which, however, many trees had no fruit. Belle Lucrative had, in proportion, the most bearing trees. Out of a lot of 50 Buffum there was one tree with a good basket full of fine Pears, the balance showing very little fruit. A great many Seckels bore for 2 years from 6 to 12 pears, one small, rather stunted tree had every year, since 1863, from 20 to 30 pears. All other varieties began in this season only to show fruit, the proportion of which is shown in the following list:

The earliest in bearing were Beurre Clairgean, Bartlett, Belle Lucrative, Flemish Beauty, Onondaga, Seckel, Buffum, Sheldon, Beurre d'Anjou, Doyenne Gris, Doyenne de Hiver, Lawrence and Beurre Bose.

The following standard trees have not borne yet: Tyson, Beurre Superfin, Dix.

Of the above kinds, dwarfs, Belle Lucrative has borne full for 2 years; Buerre d'Anjou, Beurre Superfin and Doyenne d'Hiver for 1 year; dwarf Tyson had some fine fruit this season.

The standard trees, even the Dix, are now full of fruit buds, and give promise for a good crop next season. The standard trees are from 8 to 14 feet high, and from 9 to 15 inches in circumference 2 inches from the ground. Belle Lucrative, Seckel, Dix, of course the smaller one, Flemish Beauty Sheldon, Bartlett, Buffum, the larger sized. They are all trained to a blunt pyramid, the top and upper branches being on the ends only a little higher than the lower branches, and from 18 to 22 or 24 branches to the tree. All the branches are summer and winter pinched and broken so that there are no wood limbs on them, but only fruit buds and spurs, except on the last year's (1864) growth whereon the wood shoots have been pinched in summer.

REMINISCENCES AND RECOLLECTIONS OF PEARS.

BY W. HEAVER, CINCINNATI, OHIO.

The able and interesting address of welcome, delivered by *Judge Hoadley* at the late meeting of the *Ohio Pomological Society*, was replete with wise suggestions and encouraging remarks on the present condition of Pomology in comparison with the state of knowledge which existed only twenty

years ago. The Judge particularly dwelt on the many valuable additions which have been made to our list of *Pears* within that period, and impressed on his hearers the importance of directing their attention to the raising of new varieties from seed. He also directed some observations combating a prevailing fallacy that six, eight, or ten varieties embraced all that were really desirable or valuable to cultivators, and demonstrated that instead of being limited to half a score of kinds, that there are hundreds of varieties deserving the attention of the *amateur* if not of the *commercial fruit grower*. Meditating on the remarks of Judge Hoadley, memory reverted back to twice twenty years ago, at which time I was quite familiar with the London fruit market and the varieties of Pears then sent there for sale, and thinking some of the readers of the *Gardener's Monthly* might feel an interest in such by-gone matters, will give you a list of Pears which supplied the London market about the year 1825, with the order of season of ripening.

The earliest in the market, about the end of July, was a small green, almost globular fruit, called the Green Sugar; this was eatable while the seeds were quite white and soft, scarcely any flavor more than sweetened water. I have never seen this variety in this country. Shortly following the above came the *Windsor*, a rather handsome, showy fruit, but most deceptive in character as when it was in its most handsome state it had become unfit to eat, and a mass of corruption under the fairest skin. This variety is grown to some extent in this vicinity. Our Horticultural Society, a few years since, had a report of one tree of this producing fruit to the value of \$96, and several successive years yielding near \$50.

Following the *Windsor* came the *Jargonelle*, this was the first good Pear, and when gathered before ripe and packed in sweet, dry hay, it was a fine, juicy, sprightly fruit; when left too long on the tree it would rot at the core, be flavorless and insipid. Next came the autumn *Bergamot* (called *Berjamy* by the Londoners), this was also A No. 1 quality, and better there than I have ever tasted it here; about in season with the latter was an inferior variety *Callotrose*, a dry, insipid thing not worth naming; then came the *Pear of Pears*, the *Gansel's Bergamot*, which stood in reputation head and shoulders above all others, and justly did it deserve its high character. I have fruited it here, and think highly of its quality, but find it a shy, uncertain bearer.

In season with the foregoing was the *Brown Ben*, also a popular variety in its day, its flavor was pecu-

liar and distinct; the only approach to it I have seen in this country is the Cabot. The Swan's Egg was the next in succession, which lasted into Nov.; then followed the Chaumontell, which completed the list of desert Pears, and with careful handling would sometimes keep till Christmas; the foregoing, with the Black Worcester (or Iron Pear, as it is there called) completed the list of Pears generally known at the period stated.

About 1826 or 1827 the William's Bon Chretien, (our Bartlett), was beginning to be imported from the Islands of Guernsey and Jersey, and exhibited and sold in London as the *Guernsey Chaumontelle*. There may have been some other kinds known to amateurs, and in the possession of the wealthy classes, but they did not find their way into the public markets at the period named.

Compare the foregoing limited number of varieties, and several of them of very inferior quality, with the collection of fine varieties of *Pears* shown at our Horticultural Exhibitions, here even in this out of the way neck of woods, and how miserably meager does our table of Pears, prepared for London palates, show in 1825 with those of Cincinnati in 1865.

Mr. Editor, I may be in a gossiping mind at this present writing, but are not such reminiscences and retrospective recollections sometimes necessary to enable us to fully realize the progress made, and teach us to not only enjoy the advantages within our reach, but stimulate us to fresh exertions in the march of improvement.

If our learned mentor agrees with the writer, I may, at some future time, provide some Pomological reminiscences of this neck of woods.—[Do.—Ed.]

UNITE BEAUTY WITH FRAGRANCE IN ORNAMENTAL GARDENING.

BY WALTER ELDER, PHILADELPHIA.

The beauties of plants, or that which pleases the sight, are neat habits, graceful forms, various sizes, color and appearance of foliage, splendor of blooms, &c.; and that which pleases the scent is fragrance, which differs in odoriferous plants. Where beauty and fragrance are harmoniously combined into eye-sweet arrangements upon well kept grounds, either in groups, rows, or singly along the sides of pleasant walks, or near to the mansions, we know of nothing earthly that nearest approaches a paradise. The more showy may be called illuminators; and the sweet scented are the perfumers; some plants are both, but not all. We will here name a few of the showy, and mate them with the fragrant.

Of vines that ornament and perfume verandahs, arbors and trellis work, &c., *Wisteria sinensis*, Chinese and Japan Honeysuckles, sweet scented Grape-vine, *Jasminum officinale*, *Clematis flammula* and *Cœrulea*, Climbing Everblooming Roses, &c., give fragrance from April till December. Let us plant alternate with them the following beauties and our gratifications are satisfied. *Clematis*, all the large flowering varieties; *Cypress Vine*, *Convolvulus*, *Ipomea*, *Manettia*, *Maurandia*, *Thunbergia*, *Passion Flower*, *Cobea scandens*, &c., and we will have beauty and fragrance for several months of the year, out doors in the latitude of Philadelphia.

In the flower garden, we may plant, for fragrance, in shady places, *Epigœa repens*, *Violets*, *Lily of the Valley* and *Mimulus moschatus*; and for show, *Periwinkle*, *Lysimachia*, *Phlox subulata*, *Fuchsias*, *Ferns*, &c.; and in sunny places, *Monarda*, *Mint*, &c., are as early up in the morning of spring as *Snowdrop* and *Crocus*, which they perfume. The fragrance of *Hyacinth* gives gladness to *Crown Imperial*; the odor of *Narcissus* makes *Tulips* more lovely. Next follow *Wall-flowers*, *Gilly-flowers*, *Roses*, *Carnations*, *Picotée Pinks*, *Lilies*, *Heliotropiums*, *Mignonette*, sweet *Alyssum*, *Aloysia*, scented *Geraniums*, &c., which give out sweet odors for nine months in the year, and give joyfulness to all the more showy genera.

In the shrubbery, *Daphne mezereum* is as early at its work as *Forsythia*, which it perfumes. *Artemisia* gives sweet odor to *Deutzia gracilis*. Then follow *Calycanthus*, *Sweet Brier*, *Lilacs*, *Philadelphia*, *Hawthorn*, *Magnolia purpurea*, *glauca* and *venusta*, *Berberry*, *Privet*, &c., which delight the more showy illuminators with their pleasing perfumes for four months in the year.

And among trees, there are many of the *Magnolias* of large growth, *Locust trees*, *Lindens*, *Paulownia*, all the *Fruit trees*, &c., have fragrant blossoms. *American Arborvitæ* and *English Walnut trees* have sweet scented leaves.

The following will keep the atmosphere of greenhouse, hothouse and conservatory sweetly perfumed all the year:

Mignonette, *Sweet Violets*, *Hyacinths*, *Narcissus* of varieties, *Lilies* of varieties, *Polyanthus*, *Primrose*, *Cowslips* *Wall-flowers*, *Gilly-flowers*, *Jasmines*, *Daphne odorata*, *Orange* and *Lemon trees*, *Pittosporum*, *Clerodendron fragrans*, *Viburnums*, *Olea fragrans*, *Gardenias*, *Tea Roses*, &c.

Even the beautiful lawn is made fragrant by the sweet scented vernal grass and *Trefoils*.

The Gardener's Monthly.

PHILADELPHIA, FEBRUARY, 1866.

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

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GARDENING AND GARDENERS.

The following letter explains itself:

EDITOR OF *Gardener's Monthly*—You will remember that sometime ago we sought your advice about a foreman for our nursery establishment.—We had difficulty for years in keeping a good man, and after stating exactly our situation, you kindly replied to our letter that you thought we did not pay our foremen enough to make it worth their while to stay with us. We determined to follow out your suggestions, and employed soon after Mr. —, whom you know well. He seemed to suit us admirably, and he evidently liked our place.—We thanked you often for your advice to us, and built large ranges of glass, and gave him his way in every thing. All at once our neighbor across the way offers him a partnership interest in their business, he accepts; and now what are we to do.—When we gave low wages we could not get a good man to 'come for that,' the higher wages seems to 'hasten his going,' which is the best system to follow?"

This labor question is getting to be a very troublesome one to all of us, and particularly to us in our position. We have at least *fifty* letters similar to this, in that they want first-class foremen; and others who want gardeners, all received within the past month. For a while we replied to these letters, but it has become an impossibility to find the time to oblige our friends, especially as no gardeners offer.

We take the opportunity, however, to say to gardeners that we do not think they appreciate the advantages they have for elevating themselves. An idea is generally prevalent amongst them, that gardening and gardeners are not honored as they should be,—hence they become dissatisfied with their profession, and losing all desire for improvement, talk merely as to how they can make "a dollar or two," and evidently leave their profession for any thing from pig killing to the office of petty constable, that may present itself.

It is not to be expected that a gardener should be satisfied with wages lower than the pig killer or policeman. He will go to that which pays him best; preach to him as we may about the nobility of gardening, or the many beauties attached to his profession,—the mistake he makes is rather in not seeing that there is profit in his business, if he will but take the proper steps to realize it.

The great field for gardening talent in this country is different entirely from that which prevails in Europe. There the gentleman's gardener takes a position higher than a mechanic as a rule,—here he ranks rather below. In Europe the young student looks forward to the time, when as gardener to "my Lord," he can have "big wages," wear kid gloves, and "walk about like a gentleman with nothing to do;" but in our country the "gentleman" (so called), in any walk of life, is not respectable; it is labor which is honored, and the man that can achieve most, is most thought of, and best paid.

It is because good gardeners expect to find places, with us, that cannot be found—that they fall out of the ranks. They look for what does not exist, and then complain of the non-existence.

There are a few places in the Union which many of the chief European gardeners would be proud to fill, but these will never be numerous. The four great classes into which American Horticulture divides itself, are, the amateur, the landscape gardener, the vegetable and fruit growers for market, and the nurseryman and seed trade. The American gentleman is not usually the employer, as he is understood in Europe, who has certain wants he wishes filled, and employs the gardener who knows his business, to see to these wants, and then asks no further questions,—he is nothing but an amateur on a large scale. He would do all the work of his garden himself if he could, even to the painting, glazing, fencing and other outside matters; but as he cannot do these things himself, he gets a gardener to stand in his place to do what he himself would do if he could.

A gentleman's gardener is then a substitute, or sub-amateur; and he will "get along" the best who appreciates the position. We know many men who understand this, that receive the highest wages,—men of refinement and culture, and whom their employers regard and treat as their equals.

It is a great error to believe that a "sham" can "get along as a gardener" as well as one who knows his business,—yet we have often heard this excuse given for indolence in the pursuit. If the man who really is an intelligent gardener does not

"get along well" in the business, it is usually from some weakness of character,—and the "sham," if he be really a "sham," soon exposes himself, and goes out; or his energy of character makes his few good points show so as to cover a multitude of sins. These, however, constitute not the rule. If in any pursuit in America knowledge is power, we are quite sure it is in gardening,—not only power but profit also.

We measure success here by wealth. Honestly got, it is a fair measure; and if we compare the positions gained by many gardeners here, with that of European gardeners; or of our gardeners with any other classes in similar circumstances here, we find the test in favor of the gardener. There are a few such as Paxton, McIntosh, Ingram, Beaton &c., who have risen to wealth in European gardening; but the great majority look forward to the "Gardener's Benevolent Society," as their possible support in old age.

Here a young man, who really understands his business, need not stay in any sub-position long. We have never known one who had sense enough to be a gentleman in his habits and conduct, who had tolerably good judgment, and who had a real love for his business; but who had, or can have, offers of any amount of capital for a start, in some one or other of the branches of commercial gardening; and as for foreman or manager, with salaries equal to what the best mechanic can get,—did we keep an intelligence office, which we do not mean to do—gardeners and gentlemen please take notice—we would guarantee to get a hundred good men good places within a week. But they would have to be *good men*, not "shams."

It will be well to point out to our young gardeners what particular courses will be likely to render them intelligent members of their profession. The names of plants, fruits and vegetables, will of course be of first importance. A man may grow a geranium or a cabbage, without simply more than seeing how others grow it,—as a man may talk who never knew the alphabet; but he cannot improve much. No opportunity should be lost to learn the names of every thing he sees. How to propagate and increase them comes next in order; and then how to grow and sustain them. He can get to a great proficiency in these matters, however, without knowing much of Botany, Geology, Geography, Hydrostatics, Hydraulics, Latin, Greek or Belles Lettres; but after he has got a considerable experience by personal observation, and reading or hearing the experience of others, he will be much assisted by any study whatever that he may have an inclination

to pursue. Above all things a young gardener should habituate himself to notice *results*, and endeavor to trace out *causes*; he will learn more by understanding what to avoid. It is in short a sharp habit of observation, and reasoning on observation, that makes the good gardener.

The young gardener who wishes to become *accomplished* in his profession, should by all means make English Grammar a special study. It will not only enable him to express himself properly, but to understand better what he reads or hears, and besides be the first step towards his becoming a true gentleman. At the same time it accustoms him to habits of accuracy, which will assist him wonderfully. Botany, Physiology, and the laws of heat, will also prove eminently useful. Indeed he will soon find out himself what studies will serve his purpose best. A knowledge of languages serves a young gardener particularly, helping his memory, and also leading him to understand better his own language, as well as the many technical terms he is likely to meet with in his regular duties.

Taste in gardening is rather a gift; yet can be learned to a considerable proficiency. How to lay out ground properly, he will observe by studying models of good places, and comparing them with principles as laid down in good works. And in the execution of ground work he will learn much by seeing how it is done, and trying to repeat it himself on a small scale. Drawing, measuring, and what is usually known as the principles of Engineering assist him, but will not take the place of Horticultural experience and observation.

Horticultural schools, colleges, or experimental gardens, are not what we want so much just now, as inducements for young gardeners to study the business. Our private gardens, nurseries, seed stores, and market gardens, are better educators; what we want is to convince young Americans that there really is "money in it," if they will take the proper pains to study it properly, and they will soon find the schools for themselves.

In any walk of life good business habits, and a knowledge of commercial calculations and customs, are essential to every American who would "rise" and particularly to the gardener. Enough of this for his purpose he can learn himself if he is "smart" enough, and we will guarantee that it "will pay."

It does seem strange that with the hundreds of places offering, and the heavy salaries they are willing to pay for men to suit, there are few men to be found who do suit; and this is more strange when we know in every large city there are dozens on dozens of "gardeners" seeking situations, who will not be comforted because they are not.

It will not do to sit and deplore that American Gardening is not what it is in other countries; but rather understand clearly, what gardening America does want, and arise, and do it. She will pay well for what she wants; what she does not want she holds dear at any price.

THE PITCH AND WIDTH OF VINERIES AND PLANT-HOUSES.

It is not easy to follow gardening by "principles" alone. Almost all our operations are such a mixture of good and ill, that it becomes very hard to give perfect reason for everything we do.

Such must be the reflections of one who, about to build a greenhouse, asks the opinion of practical men, as to its construction. He will find that whatever plan he wishes to adopt, some one will object to, and generally have some reason for the objection. The wide and short house will find advocates, and the long and narrow ones have as earnest defenders. Some like low houses, others prefer lofty roomy structures. Steep roofs are the preference of many, but flat ones are in just as good repute in other quarters; so it is with the interior arrangements, heating, aspect, and so on. The most contrary views have earnest and sensible advocates.

It will be found however, that as to which variety is really best, will depend on the object which it is particularly designed to accomplish. To take the question of pitch for instance, one will tell us that a steep roofed house costs more to build than a flat one. That is to say, it takes more glass, more feet of rafter, more labor, and more feet of air inside to heat. So it does. But on the opposite side we are told, that a steep roofed house is stiffer than a flat one, hence it does not require such strength of wood work, nor much contrivance for supporting it. No snow lays on it to smash it in. There is no springing of rafters and consequent cracking of glass in cold weather; and that, in short, though there may be more glass and lineal feet of timber required, the extra lightness, and less subsequent repairs required, give the balance of expense during a series of years in favor of the steep pitch. Moreover the steep pitch advocate, when it comes to a question of *drip*, has all the argument on his side.

In regard to the growth of plants, the preference will depend on what the opposing advocates grow. In the steep house the man who has a cold grapery finds many objections. The upper part is warmer than the lower, and his grapes break irregularly. The top buds naturally start first—and with the help of the extra heat, get a good growth before

the lower buds actually burst. This is a serious objection. Then the steep house in summer is so hot, that the grapes are more apt to burn than in a flat house, which is cooler. Hence for a cool grapery, a flat house is the most desirable, setting aside all questions of strength and cost. For him, however, who wants grapes early, the extra heat which the steep pitch gives is a valuable item, and he may come to regard all the other objections as lesser evils compared with the one great object of earliness.

The late house man must fight the drip for the sake of the coolness. The early forceer must bear inequality of temperature, first cost, and so on, for the sake of the heat.

There are however, many men who are not wealthy, who want greenhouses, and these houses for no particular thing. They are not grape houses, or plant houses, or propagating houses; but houses of all work. We think for them houses with a steep roof are in the main the most economical. The extra cost of material, is equally matched by the less need of subsequent repairs, while the help of the more direct rays of the sun in winter, has a great influence in keeping down the coal bill. Moreover sun heat makes plants grow, and grow more healthily than fire heat, which is by so much an absolute gain. The plants perhaps tend to grow side ways more in such a house than in a flat one, but an occasional turning around will not cost much to remedy.

So also with the width of houses—a long narrow house can be heated more cheaply than the same amount of space in a wide one. There is always more or less obstruction to the passage of heat in the bend of a flue; and the flue beyond the bend will never be so warm as it would be in a straight line from the furnace. Hence the atmosphere beyond the bend does not become heated as readily as if the flue were straight. However much of the ease with which a house can be heated depends on the rapidity with which the air can be made to circulate inside the house, as it is by actual contact with the flue that it becomes warmed—passing on to make place for the cooler, and going the rounds of the house until it again becomes the coolest, when it again forces itself to the flue, to be again warmed. Of course, the quicker this circulation can be induced, the faster the house is warmed; and a wide house which has the best circulating arrangements has the advantage over a narrow house with the worst. But all these things being equal, the narrow house has the best chance; because, the air circulating has a less distance to travel before it is

again in contact with the warming surface of the flue.

Thus, we see, that in Gardening, questions of practice resolve themselves into no absolute rule; but are to be taken by the balance of advantages, and whether one course is best, or another, will depend on what particular object we wish to gain.

EDITORIAL NOTES.

WATERING WITH WARM WATER.

Many of our readers have no hotbeds or Green-houses to bring forward their seeds of early flowers or vegetables, but have to depend on boxes in the sunny windows of their rooms. Let them remember always to water with water about 60° It has a great influence in hurrying things along.

FALL CAULIFLOWER.

Our Garden Books and Garden Calendars are in fault with regard to the time of sowing of this delicious vegetable. It should be sown at the same time with Drumhead Cabbage. In the Middle States, early in March. Every garden ought to have it as easily as Cabbage, yet it is seldom seen.

EARLY VEGETABLES.

It is often asserted by those "who have tried," that there is little gained by attempts to get early vegetables, extra early, by potting them. This is rather because too poor a soil is employed, or that red spiders or fly are allowed to attack them. They get sometimes, too much water, or are allowed to become pot-bound, or some other evil allowed to happen to them.

With proper care the Lima Bean, Egg Plant, and others usually supposed not "to pay" for this extra care, are really great successes; but great care must be exercised to guard them from any check whatever, or all the labor will be lost.

PORTLAND CEMENT.

In our last number we observed an advertisement of this article; and it reminds us to say that we have found it a very useful article to the gardener. Made into a thin solution like white-wash, it gives wood-work all the appearance of having been painted and sanded, and may, for aught we know, have as preservative a property. Piles of stone may be set together with common mortar, and then the whole washed over with this cement, making it look like one immense rock of grey sandstone. For temporary use, a flour barrel may have the hoops nailed, so as not to fly apart, and the inside washed with ten cents worth of

Portland Cement, and it will do for a year or more to hold water. Boards nailed together, and washed with it, make good hot water tanks; and in so many ways is it of use, that we have come to look on it, as one of those peculiar things in a garden which it is "always good to have about."

DEATH OF PROF. J. J. MAPES.

Amongst the deaths for the month, that of this distinguished gentleman, occupies a prominent place. He had barely reached the allotted period of three score and ten; but fewer names have achieved so wide spread a reputation, as that of Mr. Mapes. It is very difficult to form an estimate of his character as an agriculturist. One large section look up to him with almost reverence, as if to the founder of a new and admirable school; while another classes him with successful empirics. Rarely, indeed, do we find one passing away, on whose merits the line is so clearly drawn between friends and opponents.

If Mr. Mapes had not attempted to practice his own teachings, it is probable he would have departed with a reputation for scientific knowledge, which many an inferior mind to his has achieved. But, defining successful agriculture as that which from the smallest expenditures, derives the greatest effects, it has been questioned whether the Mapes' Farm was really a success; whether, in fact, there was not the heaviest expenditures for comparatively small effects. The actual results were unquestioned, for his originally barren New Jersey Farm was a sight which brought many a wondering eye a long way to see.

Mr. Mapes began his career as a sugar refiner, in which business he failed. The chemical knowledge he possessed for this pursuit, he turned to agriculture, and became famous as the proprietor of an artificial manure, the sale of which, the great reputation of his farm helped considerably; but whether the farm did justice to the manure, or the manure to the farm, is one of the open questions to which we have referred. As his business operations, however, generally resulted unfortunately, it is fair to infer, that the farm was really a paying institution, which held on, when the rest broke down.

Personally, Mr. Mapes was a genial, jolly and companionable gentleman, who loved a joke, and to enjoy life pleasantly. It is questionable with his friends, whether the mesmerisms, spiritualisms, Cora Hatchisms, and other isms, with which of later years his name has been conjoined in the

public prints, had any deeper conviction than his fondness for fun and humor.

Be all this as it may, Mr. Mapes was the instrument by which much attention was drawn to scientific agriculture, and his writings and labors have done immense good. May his name ever be held in lasting remembrance in its annals.

Some School, or Farmer's Club, we believe, in his own neighborhood, bestowed on him the title of "Professor of Agriculture," but which one, we do not now remember.

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.

FORCING STRAWBERRIES IN A DUNG BED—
"Anxious Inquirer," New Haven, Conn.—"Having lately withdrawn from the bustle of a city life, I have found horticulture an unfailing source of interest. I have become a subscriber to your invaluable magazine, and have procured from the publisher the entire series of volumes, which I find a vast storehouse of instruction and entertainment, and for which I cannot forbear from expressing my acknowledgments. As you so readily afford the benefit of your experience to inquirers, I venture to ask one or two questions.

I have constructed a brick wall, for a cold pit 15 by 6 feet, and 4 to 5 feet deep, in which I propose to bring forward some Strawberries that I now have in pots. How early is it expedient to prepare the hotbed and start the Strawberries? Will the heat be sufficiently enduring to mature the fruit, or will it be necessary to renovate the heat? If necessary, is the method of Dr. Uhler, referred to in your first volume, suitable? And what quantity of the solution of glue is required per superficial yard? and how prepared?

Uhler's method appears to have been published in your "specimen No.," and I do not find it reprinted."

[Strawberries do not do well if the heat is much above 55°, nor if there be much decrease of temperature after they have once started. Hence, it has always been found difficult to force Strawberries in a dung bed, it generally becoming too hot at first, and without great care too cool afterwards. It would be best to use a good portion of old hotbed manure,—say one half with your new, or old tan or saw-dust, leather parings, or any thing that heats

slowly and cools slow. About one pound of glue to twenty gallons of water is sufficient to restore heat by Dr. Uhler's method, and a gallon of the glue water is enough for a cubic yard of material. The glue is simply dissolved in warm water.]

ADIRONDAC GRAPE—C. R. II., Mantorville, Minn.—Can you or any of your correspondents tell me whether the Adirondac Grape is less liable to be injured by the cold in winter than the Isabella? Will it withstand as many degrees of cold as Concord? What are its merits compared with the Concord for general cultivation?

[We believe the Adirondac will stand as much cold as the Concord. We cannot speak from wide experience, as the Adirondac has not been long enough known in many places to have a fair trial with Concord; but our impression is, that it is not so reliable as Concord, but as early, and of better quality when under favorable circumstances.]

AGRICULTURIST STRAWBERRY—C. R. II., Mantorville, Minn.—"Is the Great Agriculturist Strawberry bi-sexual or self-producing? (1.) Will it produce under ordinary culture as much fruit as Wilson's Albany? (2.) Is the fruit uniformly large? (3.) Finally, is it what it is represented to be? (4.)

[We did not get any plants to test until last spring, and all we have seen seems as weak as ours, and not in a condition to give a fair opinion of its merits. Our answers to your questions are, therefore, only "to the best of our judgment," under these circumstances. 1. It is hermaphrodite. 2. About the same, but certainly no more. 3. We think it is. 4. In the locality where it has originated we have no doubt it is, as we have every confidence in the honor of those who have sent it out; but the Strawberry is a very fickle fruit as to localities; and as to whether it will be elsewhere, what we believe it has been in New Jersey, we can only say as yet, "not proven."

UNDERDRAINING IN THE WEST—I. L., Burlington, Iowa.—"Many scores of acres are being planted with the vine in this locality, and attention has been awakened to thorough drainage, but nothing has been done yet in this State in this direction worthy of the name, and we are all, in a measure, ignorant, and want a little light to go ahead in this matter. 1st. What kind of tile is the most suitable, the "horse-shoe" or round tile? 2d. How are they manufactured, by machinery or not? 3. How and where can such machines be had, and what the probable cost? A number of

us would unite to start a man in the business, if the man could be found who understood the business. Thousands of acres would soon be drained, if the draining material could be had at a reasonable rate. If you can throw any light upon this matter, please do so through the *Monthly*, as many in the West are interested.

[The low lands of Iowa, Indiana, and Illinois would be particularly benefited by underdraining. The horse-shoe tile is rarely employed now, being almost entirely superseded by pipe tiles, which are made by machinery. The machinery is simple, and is made in Philadelphia, Baltimore, and probably other places. For one proposing to go into the business, a visit to Philadelphia, or where pipe tiles are made by machinery, could not be but advantageous. The tiles advertised in our last year's paper, by Mr. Lippincott, of Philadelphia, are machine-made. Klippart's "Farm Drainage" should be read by every western man who has land to underdrain.]

MR. MOORE, OF THE LONDON "GARDENER'S CHRONICLE."—A friend from Matteawan, N. Y., obligingly corrects our biographical sketch of this gentleman given in our last. We spent an hour very pleasantly in Mr. Moore's company once, but it was so very long ago, and so many of the same name and pursuits near each other, that we had some misgivings, as we expressed, about the identity of the real gentleman. He says:

"It is undoubtedly a mistake of Mr. Thomas Moore coming from Scotland. I question if ever he was in Scotland till last year, when he was down to the Horticultural Exhibition. I am very well acquainted with that gentleman, and I think can throw some light on the subject. I have heard his history several times over, from a friend of his, who wrought as journeyman along with me, and I believe he is a native of Dorking, Surrey.

In the year 1847 or 8 he succeeded Mr. Fortune as Curator of Chelsea Botanic Garden. Previous to his appointment at Chelsea he acted as sub-editor to the "*Gardener's Journal*," under Mr. Marnock; during which time there was a Charles Moore, a Scotchman, who was foreman of the Herbaceous Department, and was shortly afterwards appointed Curator of the Sidney Botanic Garden, a short while after Mr. T. Moore went to Chelsea.

A friend of Dr. Lindley remarked: "He wondered why he appointed one of Mr. Marnock's men to Chelsea." "It does not matter," replied the Doctor, "he is a good plantsman."

[Our correspondent good-humoredly threatens

us, in a post-script, with "an article." Our motto is, "justice above all." As we have made a small fault, we deserve punishment, so friend C, let the article come. We appeal to your sense of justice to write it.]

COCOA-NUT REFUSE—"*Amateur*," *Detroit, Mich.*, writes:—"When in England I used it very successfully for growing Ferns, and in fact, found it useful for Chinese Primroses, and almost all other soft wooded plants. Cocoa-nut refuse has the appearance of mahogany saw-dust, or brown snuff, and is the refuse from the Cocoa-nut mat factory. Can you inform me if it has been used in this country, and with what success? Where it may be obtained, and at what price?"

[We believe our correspondent, Mr. Peter B. Mead, has experimented somewhat with this substance, and knows where to get it. We should be obliged if he would inform us.]

EXHIBITION OF PEARS AT THE PENNA. HORT. SOCIETY.—Amongst the superb display at the Annual Meeting of the Pennsylvania Horticultural Society, were thirty-two varieties of Pears from Mr. Abraham Barker, whose name did not occur in our list of exhibitors. We made up our record of names from a memorandum, which the Secretary very kindly made at our request; and we suppose Mr. Barker's very fine contribution could not have been entered by the exhibitor on the Secretary's books, or we should have had the pleasure of including it in the list we gave.

SEVERE WEATHER.—On the night of the 7th of January was the lowest temperature ever recorded in Philadelphia. The thermometer at day-break, on the 8th, marking 13° below zero, against 10°, the lowest heretofore known. By the telegraph we notice that the extra cold has been in about the same proportion over all parts of the country. Vegetation, however, does not appear to have suffered much, as so early in the season the vessels are not gorged with sap as they will be a month or more later.

PROPAGATING CAMELLIAS, AZALEAS AND HEATHS—*C. T. S., Tiskilwa, Ill.*—Will you give in your paper some hints on the propagation of the *Camellia japonica*, also of the *Azalea indica* and Heath.

[The *Camellia* and *Azalea* are propagated from cuttings taken off early in December, or early in June. The *Camellia* is cut into lengths of a single

eye, each piece cut just above the eye, and this piece of stem inserted down to the eye in sand. A very high *bottom* heat (90° or 100°) is essential to much success. In a lower temperature many die from various accidents before rooting. Azaleas are cut into lengths of about two inches, and set in sand in a bottom heat in the same way. Attention must be given to keeping the atmosphere about the cuttings regularly damp while the cuttings are rooting, or the leaves will wither. This is done by using a house naturally moist, or by shading, or by covering the plants particularly with glass cases.

The Heath is struck in the same way as the Azalea, except that its very delicate leaves require greater care, that the air does not get too dry about them.]

TREATMENT OF ORCHARD HOUSE TREES—“*Auxious Inquirer*,” *New Haven*.—“I have thought of erecting an orchard-house for Peaches and Nectarines in pots, without fire heat; but Hovey in his journal states that in some of the best houses, Hummel’s and Hubbard’s, the trees have not withstood the frost of winter and spring. Is it expedient to house the pots for the winter in a good cellar? Should the cellar be light or dark? How early should the pots be brought into the orchard-house? Should the roots be encouraged to run into the borders? As the house must be opened for ventilation, will it be safe against the curculio? and will this insect injure the fruit after it is—say half or three quarters grown? Should the sashes be made to remove entirely for the ripening fruit, or is it better to set the pots out of doors for this purpose?”

I have River’s and also Brehaut’s essays, but they do not supersede the importance of practical experience in our widely different climate.

[Orchard-house trees in pots are best kept in a shed or barn during the winter, with leaves or straw tightly stuffed in about the pots or tubs, to keep off the severest weather from the roots. They do very well in a dark cellar if it is never much above or below freezing. Warm cellars injure them as badly as a very cold orchard-house would do; where there is no flue in an orchard-house, which is, after all, what is understood in Europe by an orchard-house, it would not be safe to bring in the trees before the 1st of March at New Haven. The roots should not be suffered to run into the borders, but the pots be twisted around about once a month, to prevent any such effect. Curculios do not travel much by day, when ventilators are open. Gauze over the openings will be a sure safe-

guard. It does not much injure the fruit after it is stoned, if the tree be healthy. The fruit will ripen very well under glass; but removal of the plants to the open air, plunging the pots in the soil to guard against injury to the roots from too much or too little water, renders the fruit much superior to any which complete the ripening under glass. These foreign works are valuable in so far as they afford suggestions on which we are to approve or improve as experience in our climate warrants.]

HOTBED BY HOT AIR—*N. T. C., Milford, Del.*—I contemplate erecting a propagating frame, 5½ by 40 feet, which I propose to heat with a small furnace and flue running the whole length. Can you suggest any improvements or modification to the plan, through the columns of the *Monthly*.

Have you used anything of the kind, or is there any reason why that mode of heating would not be more advantageous, than an ordinary hotbed. I intend using it as any ordinary hotbed, and also, for starting Grape-eyes.

[There is a peculiarity about the moisture and heat of a dung hotbed so favorable to vegetation, that no adaptation of hot air has ever been found a satisfactory substitute. Possibly, if a sort of false bottom could be made to the pit, over the flue, and a few feet of stable manure put on, the flue would help to maintain the regular temperature, which it is so laborious to maintain with manure alone; and thus combine the advantages of both hot water and ammoniated atmosphere together.]

INJURY TO A GRAPE-VINE BORDER.—The following from “*C. R.*,” Palmyra, N. Y., will interest Grape growers, who wish to know “what to avoid:”

I have a lean-to Cold Grapery 50 feet long by 14 feet deep; six year ago I planted my vines, a row of Black Hamburg, on the back wall, and some of the newer varieties in front. For three or four years they grew well, and looked healthy. Two years ago last Spring, I had the inside border thickly covered with old refuse lime and hair from a tannery, which had been exposed to the weather for many years, and I supposed most of the strength of the lime was exhausted. In the Fall, my gardener spaded this lime into the border, among the roots of the vines. The next season they bore a fair crop of fruit, but some of the vines made but little growth. This year, some did not bear at all, the foliage had a sickly appearance, and some of the leaders grew but a few inches. The Black

Hamburgh on the back wall, grew well, and bore a fair crop of fruit, but all the other varieties in *front*, where the moist lime was put, look very badly and scarcely bore at all.

Late this Fall, I had all the earth to the depth of 12 inches removed from the inside of the *front* border, and found that all the inside roots were black and decayed, with no vitality in them; the roots running outside seem to be healthy, but all inside of the place entirely dead. Now I wish to know, whether I had better remove these vines entirely, "root and branch," and put in new ones in the Spring, or can I make good vines of those I have, by cutting them back severely, removing all the decayed roots and burying the cane a little deeper than before, so as to *coax* out new roots, about *one half* of the roots, those running into the outside border, are perfectly sound and healthy.

[These are evidently suffering from an over dose of lime, and loss of surface roots by digging. The remedy is to remove the poisoned soil, replacing by sweet fresh turf soil. The vines may recover, but we would plant young ones between them, so as to have them coming on, in case the others should be too far gone to be easily recovered.]

WEATHER AND SOIL OF SOUTH-EASTERN TENNESSEE—*H. F., Cleveland, Tenn.*—Weather mild and fine, with frequent rains, Thermometer ranges from 28° to 68° twice below the min. No., Wheat fine.

This seems a healthy locality. The best of water and timber, and *both* in unlimited quantity; soil moderately fertile, and very agreeably diversified with wooded hills, and fertile vales. Cleveland is about midway between the Alleghanies, S. E., and Cumberland mountains, N. W., (about 40 miles each way,) and water power abundant of best quality; only 40 miles to the great Copper mines, of Ductown; and already nearly 1,000,000 pound ready for shipment. R. R. communication restored to *all points* in every direction. Peace and quiet reigns. *All* seem anxious for emigrants to come with their capital and enterprise, to help repair the ravages of war.

Land at present cheaper than ever known before, though some are still held comparatively high: but \$8 to \$20 for good lands near R. R. it seems to me are cheap enough.

RAILROAD CHARGES—*W. J. M., Pontiac, Ill.*, remarks: "Weather variable, but rather mild, but little snow, good wagoning, money scarce, the first

time in four years, Corn only 20 cents per bushel, and is being burned up for fuel, and that too, in locations where a dozen coal beds are within 15 to 20 miles, with good coal at \$2 50 per ton. Rail Road monopolies and exorbitant freight tariffs the cause, from which, both western farmers and eastern operatives are equally suffering."

[That goods cost more for transportation now, than formerly, is undoubted; but the tariff rates themselves, are not higher—speaking at least for Pennsylvania roads, in proportion to the difference between gold and currency, than they have been in past years: while for travelling, a dollar in paper carries one as far as a gold dollar used to do. Very few railroads are more than spasmodically dividend paying. Public spirited individuals build them for the benefit of Stock Gamblers. Express Companies, Agencies, Porterages, Commissions, and middlemen generally swallow the profits of railroads, while they have to bear the stigma of "exorbitant charges" from the public.

A box that costs us two dollars from Pittsburg to Philadelphia, 350 miles; costs us three, after going ten miles further, to Germantown, by "express;" and we have no doubt this is the experience of every one in other towns and places.

No community is more interested in cheap and rapid transportation than the Horticultural and Agricultural; and attention is sadly needed to the evils that have crept in.

As a rule, we do not think railroad rates ruling now are exorbitant; but if the companies could control the "handlers" who shave them and the community, it would be to the profit of the companies, and a blessing to us.

THE DISTRIBUTION OF FLOWER SEEDS.—We see by the proceedings of the American Farmer's Club of New York, that through them, over *seven thousand* persons applied for, and received packages of flower seeds, freely contributed for that purpose, by Mr. W. R. Prince, of Flushing. Mr. Prince has, through the same source, distributed last fall, thousands of flower roots, and we hear he has promised the Institute *fifty thousand* packages of flower seed for this Spring's distribution. Thousands of people by these simple means, are having the foundations of future pleasure, in floral pursuits laid in their hearts; and Mr. Prince's energy and liberality are worthy of all praise.

APPLES FOR IMMEDIATE PROFIT.—*Alpha, Douglassville, Penna.*—Your list is a very good one,

except too many of Northern Spy. This one is very profitable when it does come, but as your object is *immediate* profit, we would replace the whole of them, by Baldwin, which will commence to bear tolerably, at from 5 to 7 years old. The Rhode Island Greening, would also come into full bearing before the Northern Spy, though not so soon as the Baldwin. They are both reliable fruits for your section—central Pennsylvania.

PEONY SEEDS.—X.—We are obliged by the hybridized Seeds, and will try to raise them as you desire.

NAME OF PLANT—*R. R., Hagerstown, Md.*—Your single flower appears to be of *Aphelandra Ghiesbreghtii*, a very valuable winter flowering, warm greenhouse plant.

WILD SAGE.—A correspondent asks, what the plant is that is so abundant in our Western country, that is there called wild sage, with some account of its uses, &c. We suppose it is some species of *Salvia*, but know no one particularly called Wild Sage. Can any of our readers inform us?

NEW WHITE VIOLET—*A. L. C., Albany, N. Y.*—Inquires where the new white violet, referred to in our December No., can be obtained. We omitted to credit the extract to whatever foreign paper we took it from. It is not, probably in the country for sale yet, but such enterprising importers as Parson & Co., Buist, Peter Henderson, B. K. Bliss, or others who advertise their new plants in our columns, will not be long before they have so desirable an addition to offer.

SHELDON'S BLIGHT AND BORER COMPOSITION—*H. I. H., Monticello, Ill.*, asks where it may be found? We do not know. We have doubts of its value for the purposes stated. A vender whom we saw in the West, was using very freely the names of respectable nurserymen, in Western N. Y. as endorsing the character he gave of it; and we made the paragraph as much for the purpose of gaining further information ourselves. At the time we had the address of the manufacturer, but have not now.

NAME OF CHRYSANTHEMUM.—A correspondent says the name of the Chrysanthemum, that produces sometimes white, and sometimes yellow flowers from the same stem, is "La Fiancee."

OBITUARY.

R. REID.

"Died, December 24th, 1865, at No. 22 Thirtieth Street, New York, Robert Reid, Florist, aged 70 years, a native of Langholm, Dumfriesshire, Scotland."

This simple announcement in the death column of a daily paper, had no particular interest to any, except to the immediate friends of the deceased. But his death has left a gap in the Horticultural ranks, very difficult to fill, and a blank in the hearts of his many friends, not soon to be forgotten.

Although more than half a century has passed away, since the days when our old friend first learned to "swing the scythe and wield the spade," yet his active and energetic mind was ever the first to note improvements in Horticulture as soon as they appeared; and perhaps his thorough and comprehensive knowledge of all its departments, was unexcelled by that of any other man in the profession.

Modest, unassuming and unambitious, Mr. Reid was but little known outside of his immediate locality. Yet in whatever place he made his home, his rare merits were never overlooked. He spent many years of his life in the vicinity of London, and was an honorary member of the London Horticultural Society, and long enjoyed the friendship of Dr. Lindley, Donald Beaton, George Glenny, and other eminent Horticulturists of the time; Mr. Reid was also a clear and pleasing writer, and some of the best practical articles in the pages of the *Gardener's Chronicle* and *Gardener's Gazette* of twenty-five years ago, were from his pen.

If, as the poet says, "an honest man is the noblest work of God," then Robert Reid was one of his noblest works, for he was emphatically an honest man; his sterling integrity, and utter scorn of wrong or meanness, made him an uncompromising foe to all who wandered from the straight path.

In all valuation of stock and chattels connected with the trade, in the vicinity of New York, the services of Mr. Reid were invariably in demand. And in all matters of dispute, the decision of Robert Reid, as referee, was never questioned. Such was the veneration and respect in which the judgment and integrity of the good old man was held.

P. H.

New and Rare Fruits.

BUFFALO AND McAYOY'S SEEDLING STRAWBERRIES.—Mr. Hovey's article respecting them is

running the rounds of the Horticultural press, and with your permission, I will aid in setting the matter right.

Mr. Hovey is doubtless correct, respecting the varieties he has, but it is evident he has not the Russell.

Early in the growing season, the Russell and Buffalo resemble each other very closely, and when the question of identity was first raised, I compared the foliage very closely, at different times, and the only perceptible difference to my eyes was a more hairy surface of the leaf of one than the other. And at this period, I doubt if the "waviness and indentations" mentioned by friend Buist, or the "curved and bluntly serrated" of Douglass, would enable them or "a committee-man" to separate a lot of leaves with any degree of accuracy.

Later in the season, the runners of Buffalo show a marked difference, being longer and more slender than Russell, and the fruit is darker, softer, richer, and in every way superior to the Russell. The Russell is larger, coarser, and not more than second or third rate in quality; I place it in the latter position.

Now, in reality, there is no *Buffalo*. It is only another name for McAvoy's Superior, and the sooner we convince the public of this fact, the better. Our Horticultural friends of Western New York may not agree with us in this respect; but that is readily accounted for, when we state, that their McAvoy's Superior, and the McAvoy's Superior of New York City and vicinity, are two very different berries. The *Superior* I have had from Rochester, twice; and is what is known here as *Extra Red*, an *intensely* acid berry. There is still another *Superior* that was formerly grown, in this vicinity, which corresponds to the published description, and is much better than the Rochester berry, but not equal to *genuine* rebaptized Buffalo.

These facts will probably enable friend Hovey and others to understand how this "*triple mistake*" could occur. If friend Douglass has the Eastern N. Y. *Superior*, soil and climate must make a greater change than I am willing to credit it for, if he places it below the Russell, but if he has the West N. Y. berry, I coincide with him, and that is not saying much, for after two years trial, I don't consider either worth growing or eating.

One grower, in his Spring circular, offers *genuine* Buffalo's, direct from Smith & Bryant, but this does not alter the case. Its a libel and counterfeit any way. My plants come from the fountain head, two lots to the amount of \$14, and both prove to be McAvoy's Superior, *which* I already had. This

practice of rejuvenating old varieties with a new name, and a monstrous cut, as in the case of the Buffalo, is a growing one; and deserves and should receive the severest censure. We live in an age of humbugs and swindles, and I regret to say, our horticultural ranks are not exempt.

If the excellent advice of *P. B.*, page 6, Jan. No. were followed; and the community would not take hold of new things, merely on the recommendation of the seller; but wait till the "second season's experience" has been had, and the testimony of competent judges to back it; we would encourage true merit more, and suffer from swindlers less.—E. WILLIAMS, *Mont Clair, N. J.*

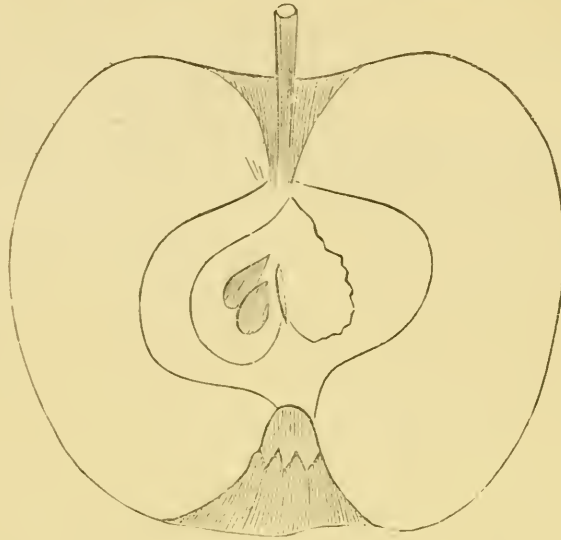
HYBRID GRAPES FROM CANADA.—I have just received your November number, and have read your remarks upon a bunch of one of my Hybrid Seedling Grapes. I felt sure that you could not be otherwise than pleased with its fine size and appearance, but had my doubts as to your liking its flavor, from the fact that it was cut before it was ripe, through fear of the fruit being taken by thieves.

I now send you another small bunch, of the same variety, cut a few days after, or about the last of September. I trust this will enable you to give a more favorable opinion of its flavor. The male parent of this grape is the Black Hamburg; the female parent, is of the wild frost grape family. I preferred the *Vitis Cordifolia*, for the female, from the fact, that it is the most hardy, grows farther North than any other species, less subject to disease, and is entirely free from that peculiar smell and taste called foxiness, which is offensive to most people.

Please taste the fruit now sent with the Diana and Delaware, grown side by side with it. The Delaware was cut at least two weeks later, and the Diana nearly four weeks later. A few years ago I had a Catawba growing within a few feet of where this seedling vine now stands; and the fruit was invariably as green as grass when the winter frost set in. I scarcely think we get so rich a flavor to any grapes grown here as you do in Philadelphia. If so, it would be scarcely fair to judge my seedling by comparing it with grapes grown in your section.—CHARLES ARNOLD.

[These grapes enable us to say, what we could not of the first samples sent, that its flavor is of the highest excellence.—ED.]

GRIMES' GOLDEN PIPPIN APPLE.



This is a seedling found in Brooke County, Va., about seven miles from the Ohio River, about 80 years since, by Samuel Wood, of Jefferson County, Ohio. It has been cultivated by the descendants of Mr. Wood, and is largely disseminated through Ohio and parts of Indiana and Illinois. Mr. S. B. Marshall, of Massillon, Ohio, (a son-in-law of Mr. Wood,) has done, perhaps, more than any other person, to make it known. He has grown and handled it for twenty years, during which time it has never failed to produce a fine crop of fruit—nor, as long back as he can learn, from those who are acquainted with its history.

It may be described as follows: Form roundish, rather oblong; size medium; color golden yellow; dots, small, brown; basin nearly regular, rather large; eye medium, closed; cavity narrow, deep; stem long, slender; core small, closed; seeds plump, brown; flesh yellow, fine grained; flavor sprightly, sub-acid, excellent; quality first; use table; season from December to February, or about the same as Pryor's Red.

[The above memorandum we have through the kindness of Mr. George W. Beeler, one of the best authorities on apples in the West.]

New and Rare Plants.

DESCRIPTIONS of some New Flowering Plants:—
"Having been solicited many times by letter to

give descriptions of some of those plants lately introduced from the Rocky Mountain country, I take this method of answering all at once:

CALLIRHÆ INVOLUCRATA.—This fine trailer is a native of the Upper Platte country, and is also found sparingly on the head waters of the Missouri; and also in some parts of Utah Territory. It is a malvaceous plant, perfectly hardy, and a very free bloomer, the flowers varying in color from pure white to the deepest crimson,—the writer having plants producing white, light rose, deep rose, light purple, scarlet and crimson, all seedlings originally from one plant. The root is shaped like a Parsnip, and is used considerably by the Indians as an article of food. It has a pleasant, sweetish taste, and contains a large per cent. of starch. In growth it somewhat resembles the Verbena, branching off from the roots in all directions, plants frequently covering a space of six feet in diameter. The flower-stalks rise from the axils of the leaves, bearing a single flower about two inches across. It may be termed a perpetual bloomer, as it commences to flower in May, and continues in bloom until killed by frost in autumn.

BARTONIA OR *MENTZELIA NUDA*.—This is another hardy perennial, and is to my mind one of the finest plants in cultivation. It usually grows two feet high, though well-established plants frequently grow to the height of three or more feet. The name of this plant has been changed from *Bartonia* to that of *Mentzelia*, and is now known in

most Botanical works by the latter name. Its native habitat is Western Nebraska, along the base of the Rocky Mountains, and it is also found high up in the mountains, on the table-lands and in the gulches. It sends up very strong, woody flower-stalks, much branched towards the top, producing flowers in great abundance. The flowers are very large, being two and a half inches across, and nearly pure white. The numerous, long, feathery stamens, gives the flowers a very beautiful appearance. They commence blooming in May or June, and the flowers are produced in succession nearly the whole season. There are several other varieties indigenous to the Rocky Mountain country, but this is the only one that I have succeeded in perfectly bringing to a state of civilization.—H. A. TERRY, *Crescent City, Iowa.*

THE following New Plants were recently exhibited before a Committee of the London Horticultural Society.

DRACÆNA COOPERI (Messrs. Veitch and Son).—This was one of the red-variegated forms of *Dracœna*, and well marked, but differed from *D. terminalis* in having leaves of an arching or pendent character. They were of a deep bronzy-purple tint, recurved, and freely marked with deep rose-red. It had been introduced from New Caledonia.

FRANCISCEA CALYCINA MAJOR (Messrs. Veitch and Son).—This had larger flowers than in the ordinary form, the color being also of a more intense violet-purple. It appeared to be a free-flowering plant.

GYMNOSTACHYUM VERSCHAFFELTHI (Mr. Bull.) An elegant dwarf stove herb, with broad, long-stalked, cordate blunt leaves, conspicuously veined with red. It had hitherto, when shown in a less developed state, been considered identical with the plant mentioned as *Eranthemum rubronervium*, which it closely resembled in habit of marbling, but it proves to be freer in habit, producing larger leaves.

PHALÆNOPSIS RUCKERI (Mr. Bull.)—A distinct-looking form of *Phalænosis*, imported from some of the Indian Islands. The small plant exhibited had short, oblong leaves, and a dwarf stem, bearing four or five flowers, which were yellowish at the back, and had the anterior half of the lateral arms of the lip, and the entire apical lobe, including the horns, stained of a deep yellow color. The broad roundish flabellate petals were white. Its affinity was with *Ph. grandiflora*; but it appeared to differ in the points just indicated. The plant was, however, small and weakly.

RHODODENDRON NUTTALLII (Mr. Williams).—This was a cut specimen from a fine plant bearing eighteen trusses of flowers, blooming in Mr. William's Victoria Nursery, at Highgate. It is now well-known as the finest of the large white Indian *Rhododendrons*; the flowers measure some six inches across. These were the first flowering specimens which had been exhibited before the Committee.

THE following are figured in the *Floral Magazine*:

AQUILEGIA CÆRULEA.—Native of the Rocky Mountains, originally discovered by Dr. James, and raised by Mr. Thompson, of Ipswich, from seeds sent home by Dr. Parry. Flowers violet blue and white, with long spurs.

CLERODENDRON THOMSONÆ, var. BALFOURII.—Raised by Mr. McNab, of the Edinburgh Botanic Garden. Flowers large, crimson and white.

PRIMULA INTERMEDIA.—Raised by Mr. Fullar, Headingly, and now in the hands of Mr. Bull, of Chelsea. Flowers resembling a small-flowered *Auricula*, mauve; trusses composed of numerous pips.

ROSE DUCHESS OF MEDINA-CÆLI.—This beautiful Rose was obtained from seed three years ago by M. Marest & Son, horticultural gardeners in Paris, who are accustomed to successes in this line. Since that period they have studied it carefully, and have not brought it before the public until they felt convinced of its originality and qualities. We are ignorant of its parentage, which is to be regretted, but producers in general do not keep sufficient account of these matters. If gardeners would but place upon a register the names of the fathers and mothers of the plants they rear from these mixed parentages, they would do what would prove generally useful both to individuals and to science. It is of large size, richly colored dark crimson, is finely formed, and has abundant and beautiful foliage. [It is very seldom raisers of new varieties know which the fathers or mothers are. With all the subtle talk about hybridizing, the best hybrids are those of nature's crossing. Oftentimes the genealogies offered us are shamefully untrue.]—*Gardener's Weekly.*

CHAMÆBATIA FOLIOLOSA.—A correspondent of the *Cottage Gardener*, says:—"One of the prettiest plants in the greenhouse here is *Chamæbatia foliolosa*. It does not often occur in collections, but is well worth growing for the extreme delicacy

of its foliage. The leaves are about three inches long, and something like *Cheilanthes tomentosa*, combined, if it were possible, with those of *Tansy*.



[*Chamaebatia foliolosa*.]

The flowers which I have seen resemble those of the common Blackberry, and soon fall to pieces; in habit the plant is an undershrub."

BEGONIA DIGSWELLIENSIS.—This was a very free-flowering dwarf hybrid variety, something like *B. Saundersii*, but a more abundant bloomer, and the flowers opening better. Regarded as a very useful decorative or market plant, and is also likely to be an acquisition for supplying cut flowers. The leaves were narrow-ovate lanceolate; and the flowers of a bright pinkish-rod, very freely produced.

Domestic Intelligence.

NEW FUEL.—A newspaper of Tepic, Mexico, speaks in high terms of a late discovery that has been made to apply to purposes of fuel the stone of the guacoyal, the fruit of a species of palm that grows on the Pacific side of Mexico. From experiments made on board of English war steamers, it has been discovered that, used as a fuel, the stone of the guacoyal is equal to the best coal, both for the length of time it burns and the intensity of heat produced. It has likewise the advantage over coal, that there is no disagreeable smell from the exhalation of gas, nor does it dirty the holds, nor the persons who have to take it out; its shape is also in its favor for employing directly, and it is not subject to spontaneous combustion, or damage by leakage of the ship.

The guacoyal, as already stated, is the fruit of the palm with which nature has covered the Mexican coast of San Blas and the valley of Banderas. The quantity of this fruit, which can be collected annually, is incalculable. Thousands of tons, says the Tepic newspaper, can be gathered at a very slight expense, and easily supply all the steamers of the Pacific coast—the difference of price between it and coal at San Francisco being about one-half. The objection is, that the supply can only be temporary, as the daily consumption of one vessel would take the produce of thousands of trees to supply it.—*Mining and Petroleum Standard*.

PUBLIC PARKS IN CINCINNATI.—The city councils of Cincinnati have secured one hundred acres on Mount Adams and Garden of Eden for a Public Park. Cincinnati is more sensible than Philadelphia; when she began to have parks, she established the office of "Superintendent of Parks," and took care to have some one in the office who understood the business. Philadelphia makes of her "Parks" a hospital for crippled politicians,—the "superintendent" of one of her best parks, and one of the best sites in the world, being by trade a butcher. We cannot help contrasting these things, envying, at the same time, cities which have not politico-ridden Parks.

GREELY PREMIUMS ON APPLES AND PEARS.—On December 12th last, the committee, after a long consultation, decided to award the premium for the best apple for general cultivation to the Baldwin, and for the best pear for general cultivation to the

Bartlett, on pear stock. The best bushel of each was exhibited by W. R. Ward, of Newark, N. J., and the prizes go to him. While this decision, probably, will not satisfy every one, we think that, taking all the circumstances into consideration, the committees have made the best possible selection.—*American Agriculturist*.

AN IMPORTANT SELECT FRUIT LIST.—The committee on the Greely prizes at their last meeting fixed upon two varieties each, of summer, fall and winter apples and pears, to recommend for general cultivation. Although this they consider as extra official, we are very glad that it has been done, and our readers will attach much importance to it, when they know that it is the result of the deliberations of pomologists of such large experience as Chas. Downing, C. M. Hovey, Dr. J. A. Warder, Dr. I. M. Ward, Wm. S. Carpenter, and others.

APPLES — *Summer*. — Primate and Red Astrachan.

Autumn. — Porter and Gravenstein.

Winter. — Hubbardston Nonsuch and Northern Spy.

PEARS — *Summer*. — Rostiezer and Manning's Elizabeth.

Autumn. — Seckel and Sheldon.

Winter. — Lawrence and Dana's Hovey.

[The above we find in the *American Agriculturist*, and is a good list, though perhaps Dana's Hovey may excite surprise at being in a list recommended for general cultivation. It is one of the best fruits we have ever tasted; but we doubt whether it has been yet fruited in more than a score of places in the Union; and that it will do well everywhere, should, we think, rather favor a probability than a certainty.—ED. G. M.]

COLORS.—There are three simple colors—red, yellow and blue—and, by a mixture of these, all others are made. The way these are mingled to form the seven colors of the rainbow, is best seen by observing their position in the solar spectrum. When light passes from one medium to another of different density, it is always bent or refracted from its straight course, some of the rays being refracted more than others. Of the primitive colors, the red ray is refracted the least, yellow next, and blue the most. By passing the light through a triangular prism, it is twice refracted in the same direction, and as the more refrangible rays are, of course, bent the most at each refraction, the colors are in this way as widely separated as they can be

by any process, though they are not completely separated even by this plan, for the different colors lap over each other on their borders. It is by this lapping over and consequent intermingling, that the other four colors of the spectrum are formed.

Orange is a mixture of red and yellow, and the position of orange in the spectrum is between the red and yellow. Green is a mixture of yellow and blue, and the position of green is between the yellow and blue. Indigo and violet are mixtures of blue and red, and the position of these is beyond the blue. This is the most curious and mysterious thing in the spectrum; while the red are the least refrangible rays of light in the sunbeam, a portion of them are found beyond the blue. Indigo and violet are formed as they would be if the spectrum were bent in a circle, and blue were thus made to touch red at the opposite end of the spectrum. Most observers now recognize a third color resulting from the mixture of red and blue, which they call lavender. The position of this is beyond the violet.

Beside the seven or eight colors of the spectrum, a great many others are found in nature and art, and all these are seen, on examination, to be mixtures in various proportions of red, yellow and blue; scarlet is a mixture of red and yellow, with a larger proportion of red than in orange. By adding blue to red in increasing proportions we have, first pink, then crimson, then purple, then indigo, while violet and lavender seem to be fainter shades of the mixture. By looking at the trees of a forest, we see that there are not merely several shades of green, but innumerable colors of green, resulting from the different proportions in which blue and yellow are mingled.

The endless variety of colors with fancy names, invented by traders who sell dry goods, or women who purchase them, will be seen on examination to result from mingling in different proportions of red, yellow and blue. Finally, white results from blending the three primitive colors in the exact proportions they occur in the sunbeam, while pure black is simply the absence of any light whatever.—*Scientific American*.

FRUITS FOR WESTERN NEW YORK.—The following fruits have been recommended by the Fruit-Growers' Society of Western New York:

PEARS FOR GENERAL CULTIVATION.—*Summer Sorts*.—Giffard, Tyson, Doyenne d'Ete, Rostiezer, and Osband's Summer.

Autumn Sorts.—Bartlett, Sheldon, Angouleme, Louise Bonne de Jersey and Anjou.

Winter Sorts.—Lawrence, Winter Nelis, Easter Beurre and Winkfield.

Apples for Market.—Baldwin, Rhode Island Greening, Jonathan, Roxbury Russet, Westfield Seek-no-Further.

Best Varieties of Hardy Grapes.—Delaware, Diana, Isabella, Hartford Prolific, Rebecca, Concord, Creveling.

The Best Strawberries for Family Use.—Triomphe de Gand, Early Scarlet, Russell, Wilson, Hooker, Burr's New Pine, Hovey's Seedling.

Raspberries.—Brinckle's Orange, Hudson River Antwerp, Franconia, Knevett's Giant, Hornet and Black Cap.—*The American Farmer.*

Foreign Intelligence.

THE DURION.—Durio zebethinus, the Durion, is the tropical fruit to which I now wish to draw attention as one likely to become, hereafter, very useful for the dessert. This tree, of which there are many varieties, is a native of the warmest parts of southern Asia, where it grows very rapidly, and attains the height of 30 feet. The leaves are about 4 inches long, very smooth at the edges, and shaped somewhat like those of an Apple. The flowers, large and fragrant, are produced in small bunches, and are of a yellow color. The fruit, which is covered with a hard knotty rind, is about the size of a child's head, and is not unlike a Chestnut in appearance; when ripe it becomes of a dark yellow, and cracks at the top. Inside, the fruit contains five or six large cells filled with the pulp mixed with seeds. This pulp or cream is of a pure white color, very thick, and highly nutritious; the taste is peculiar, but very agreeable, and although of the very richest nature never palls upon the appetite, or injures the most delicate digestion. For an invalid the fruit is invaluable, its only drawback being the disagreeable odor when ripe.

When growing the Durion for fruit, it should be planted out in a border within the stove, and is best trained up the roof like a Vine; indeed, where the room can be spared, an entire house should be devoted to its culture, as few plants will thrive under the shade it causes. When in full bearing such a house presents a striking appearance, the large fruit hanging down in all stages of growth from amongst the leaves and flowers.

Unlike the Mango and Mangosteen, this tree requires a season of complete rest, and directly the

fruit is all off, which will be by the end of November, the temperature should be at once reduced, lowering it to from 60° to 65° by day, and from 55° to 60° by night. No water must be given unless the border becomes very dry. Never mind a few leaves falling, the trees will be all right, and the better for it in the next spring, as it is vain to expect fruit on the Durion unless the tree has previously had at least two months' rest.

Towards the middle of February the trees will start again, and the temperature must then be raised to from 75° to 80° by day, and from 65° to 70° by night, at the same time keeping the house close and moist, and watering the plants frequently. When the flowers open, the temperature may again raise to from 85° to 90° by day, and 80° to 85° by night, giving air freely in fine weather, and occasionally syringing the trees overhead.

The flowers will set freely, and little attention will be needed until the fruit is half grown, or about the size of an Apple. This is a critical time with the Durion, as much fruit will then fall off, sometimes nearly the whole crop. The only way to prevent this is by maintaining a high temperature, and, at the same time, admitting plenty of fresh air, care being taken that the air is well warmed by passing over the hot-water pipes or flues before it reaches the trees, as the least chill stops the new growth, and materially injures the fruit.

As the fruit ripens, the heat may range between 90° and 95° by day, or even higher, and 80° and 85° by night. It is of the greatest importance that the trees at this time should be frequently syringed—twice a day will be by no means too often; unless this is done the smell of the ripe fruit will be very strong and revolting. The crop will continue ripening for some weeks, all stages of the fruit being seen on the trees at the same time. When ripe the fruit must be cut, or it will soon putrefy, and affect the rest; by not attending to this, many fine fruit may be lost. It should also be eaten fresh from the tree, as it very rapidly deteriorates, and will not keep more than twenty-four hours. If it is wished to send some of the fruit to a distance it should be cut before it is quite ripe, and it will then keep two or three days.

On account of the great size and weight of the fruit it is advisable to give it some support just before it ripens; this may easily be managed by tying it up to the tree with two pieces of matting, about an inch wide, placed crosswise under the fruit, and tied over the branch.

The border in which the Durion is planted should be the entire length of the house, about 3 feet wide,

18 inches deep, and well drained. As this fruit delights in rich food, the soil should consist of one half good leaf mould, one quarter sandy loam, and one quarter rotten manure taken from a spent hot-bed. These ingredients, thoroughly mixed together, should be sifted through a sieve, adding now and then a little charcoal, broken into pieces the size of a hazelnut, and a few whole bones. In planting be careful to spread out the roots, pressing the soil firmly around the trees. When once fairly established the trees will require very little attention beyond renewing the top soil occasionally, and keeping the roots well watered. For a house 20 feet long two trees will be quite sufficient.

The Durion, though by no means so handsome a tree as the Mangosteen, is, when loaded with fruit, a very beautiful object; the flowers, too, are very fragrant, emitting a peculiarly grateful scent. The fruit is particularly valuable for invalids, uniting, as it does, in itself the flavor of a delicious fruit with that of a delicate animal food; it is also very useful for the dessert; and as it bears freely with proper treatment, and grows rapidly after the first year or two, it is, I think, well worthy of cultivation.—*Journal of Horticulture.*

STRAWBERRY CULTURE IN FRANCE.—It appears they are beginning to appreciate the stool system of culture in France, as well as we, thanks to the labors of Mr. Knox. Mr. Gløede, in his recent work on the Strawberry, "*Les Bonnes Fraises, maniere de les Cultiver pour les avoir au maximum de beaute,*" says the difference of produce between that of a plant with the runners regularly cut off, and one left to emit them freely, is, he says, incredible. Digging between the rows is to be avoided; and the old leaves should be left for the protection of the plants till February or March.

CLIMBING DEVONIENSIS—In Thos. River's Descriptive Catalogue of Roses, the 32d Edition, he remarks: "Some persons, ignorant of the nature of cultivated Roses, have disputed the claims of this Rose to be a climbing pillar Rose. It evidently originated in some strong shoot of Devoniensis, and has retained its character by budding. Here it has made shoots 15 feet long without putting forth any blossoms; these generally break forth in autumn. The climbing deviations are no rarity. Geant des Batailles has sported into a climber."

WHAT DARWIN HAS DONE—is thus summed up in the *Natural History Review*:

"1. To show that the operation of natural selection must eventually result in the co-ordination of the derivative individuals into more or less definable groups, which we call species, genera, orders, &c.

"2. To demonstrate that such a process actually takes place in minor groups, both of the animal and vegetable kingdoms.

"3. To show how the main facts of classification, development, and geographical distribution are all consonant with, and explicable upon, the hypothesis that organized beings are all derivative, and have been ruled by natural selection in every thing relating to their development, whether as to grade of perfection, numbers, magnitude, or diffusion over the earth's surface. It is the application of this demonstrably proved law of natural selection, together with the fact that the struggle for existence must lead to the extinction of the weaker races, to the speculation of the derivative origin of species, that is the novel point which Mr. Darwin has brought out, and which raises the said speculation to the rank of a legitimate hypothesis; and it is the fact of the derivative origin of species being no longer a speculation, but an hypothesis (or as some say a theory) that has necessitated its careful consideration by every scientific biologist, and its acceptance by many at once, and by more as time advances."

Horticultural Notices.

ILLINOIS HORTICULTURAL SOCIETY.

The following interesting essay was delivered by Dr. S. Shroeder, detailing a new system of Grape-culture and Preventive of Grape Rot:

"Revolution everywhere! So in Grape-culture. Much is said and written in regard to the most dreadful disease, the Grape Rot; underdraining, ditching, subsoiling from 18 inches to 3 feet, long and short trimming, Sulphur, Lime and Sulphate of Lime, most every thing is tried to prevent or to cure the Grape Rot, but all failed, more or less. New varieties, it was hoped, would not be liable to the rot, but this also has failed in most of the cases. The vine that rots the most, is surely the celebrated Catawba, and let me tell here, my friend, that where ever the Catawba will ripen, and in its perfect state free from disease, it is a splendid Grape, spicy, showy, aromatic and vinous, and makes a superior wine; a wine that speaks to our

heart, as it is said that it has such a fine effect on our heart organs. Pity that the Catawba, in consequence of the awful rot, became so much discarded, and I do not blame its antagonists among Vineyardists, as they had suffered so much from its culture.

Years ago I noticed that the first crop of Catawba vines was not injured by the rot, as well in other people's vineyards, as in my own. I never forget the sight of my first Catawba crop, when the fruit on my neighbors vines were rotting, mine stood there in perfect health and glory. This I noticed on all my first fruiting Catawbas, as my vineyards were planted in successive years. I further noticed that the fruit on my old wood layers that I used to make every year were free from rot. I then laid down several old wood layers and cut them off from the mother vine in the fall, and found this year that the fruit on these new vines was perfectly healthy, when the fruit on older vines rotted entirely.

This last year was the hardest year for Catawba vineyardists, and the losses can be counted by near two millions of dollars in the West alone.

As proof, I want to say, and to prove the truth of my system, that the Catawba vineyards bearing first time (Mr. G. Lange's and Mr. Schonebeck's) were a perfect exhibition of Grapes, when older vines close by rotted entirely. Years ago it was said Nauvoo, Warsaw and Alton, in our State had a peculiar soil to perfect the Catawba. But I denied it in our public Horticultural gatherings, and it has been shown the Catawba will rot as well there as in Cincinnati and Hermann, or elsewhere. The Islands in Lake Erie, it was said, were entirely free from rot; but the demon went there too, and will be worse next year, when the vines will become older. All these facts led me to a new system of Grape-culture, as most all our grape-vines growing older will be more or less inclined to the rot. I claim this as my own discovery.

REMEDY: After preparing your land for the vineyards, plant the same with good, strong layers or first-rate cutting plants from 8 to 12 feet apart, in a square, in the usual manner. When your vines come into bearing, the first big crop, say the third or fourth year after planting, take one strong cane of the bearing vine raised for this purpose, close to the root of the vine make a little ditch with the hoe or spade, from 4 to 6 inches deep, in the row up to the centre between your bearing vines; let this cane stick about one foot out of the ground, and after covering your ditch cut it off. As I said one foot above the ground, this I will

call the *first reverse*. Let from this grow three unchecked vines; two of them are for fruiting the next year, and can be cut long, to give a good crop of fruit. The third cane is for the *second reverse*.

Cut your first reverse loose in the spring from the mother vine; let the mother vine bear a good crop or two, if you choose, as the case may be; then chop it away to give room for the second, or *third reverses*.

Let us go back now to the *second reverse*. Take the third cane of the *first reverse*, lay it across the row up to the centre of the row, as before described, 4 to 6 inches deep, and one foot above the ground cut it off.

Now you have instead of one, two rows of vines. Let again three canes grow of the *second reverse* (two fruiting and one for the third reverse.) The *third reverse* is made by layering the cane of the second reverse in the new row up to the center of the new row, and treat it the same way as the other reverses were treated. The *fourth reverse* is made by taking a cane (in the second year after fruiting) from the first reverse, and after chopping the original mother vine out, to become the mothers place one-third of the vines, or as the case may be, one-fourth are removed every year by chopping out, and thus making room for other reverses, and so go on till the 'day of judgment.'

You will have this way, by little labor and without any doctoring, always a new and vigorous vineyard, free from disease, and paying well for your labor, superior fruit and wine. It may be that in some slower growers than Catawba or Concords, that you can make the reverse only every two years, but good healthy vines in good soil and locality will stand the reverse almost every year.

This is mainly written or recommended for Catawba and other varieties of great value, but adapted and inclined to rot. Whenever a variety proves free from disease, grow it as long as you can profitably without reverse. But one thing is sure, the *finest fruits always grow with me on young vines*. So, a gentleman told to-day, it was with Peaches in the Southern part of our State.

I hope that every one who grows a Catawba vine, or any other vine inclined to rot, will give my new system a fair trial, and report publicly the result. Anything not plainly understood, I will explain on application, with the greatest pleasure. My object is only to save good varieties of fruit (inclined to disease) for the benefit of my fellow-man; and to help the often discouraged, poor, hard-working man; and if this, my new discovery, shall do them good, it will make me happy.

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Hints for March.



FLOWER-GARDEN AND PLEASURE-GROUND.

So far as we can learn, the very severe weather we had in early January has not been so destructive to vegetation as the usual severe weather we commonly have later in January or February. This is no doubt owing to the smaller amount of moisture the plants contain at that season than they do later. The roots are storing up sap all through winter; and towards spring when the vessels are filled to their utmost expansion, the addition of heavy frost is probably more than they can bear. At any rate when injury is apparent, the best remedy is the pruning knife. Half dead shoots continue to evaporate the plant's moisture, which leakage, as we may say, is stopped by cutting away the branch as soon as possible.

Many delay pruning Shrubbery until after severe weather passes, so as to see what injury may be done,—but with March all should be finished,—taking care not to trim severely such Shrubs as flower out of last year's wood, as for instance, the Wiegelia—while such as flower from the spring growth, as the Althæa, Mock Orange, &c., are benefited by cutting back vigorously.

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 be 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 foggy rules our handsome young ladies are disgusted with gardening. Let the girls lift the seedlings carefully from the soil in the pots, sets 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 difference 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 season, 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 much 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.

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 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.

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

This is the proper season to lay down box-edgings. To make them properly, the soil along the line of the edge should be first dug, and then trod very hard and firm, so that the soil may sink evenly together, or the line will present ugly-looking un-

dulations in time. Rooted plants should be employed; cuttings are sometimes used, but frequently die out in patches; a good edge can rarely be made from them. The plants should be set pretty low down, leaving the plants, when set, one or two inches above the soil, according to their stockiness. Sometimes box-edgings are laid around beds formed in grass. When so, a few inches of clear ground should be kept clean between the grass and the box, or the weeds will be so intermixed with the box, after awhile, as to render it a nuisance.

Chrysanthemums are now indispensable for autumn decoration of the flower garden. Now is the time to procure a supply. They do well in any rich garden soil that is not too dry. The Liliputian, or Pomponé class are still popular for conservatory or pot culture, but the large flowering kinds still remain the gems of the open ground.

Hyacinths, Tulips, Lilliums, and other hardy bulbs set out in the fall, and covered through the winter, should be occasionally examined, and when they show signs of active growth, must be uncovered; in this latitude this is not safe until towards the end of the month.

The improvements that the last few years have made in the Hollyhocks have rendered them very popular for ornamenting shrubbery borders, to which they add very great interest, and are peculiarly appropriate. They may be transplanted quite early in the season, and flower the more freely for it. They are propagated by dividing the roots in the spring, or by seeds sown as soon as ripe in summer. The choice kinds are increased by eyes made by cutting up the flower stems. These are struck in a gentle bottom heat.

FRUIT GARDEN.

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

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

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

For small places, a plentiful supply of Strawberries, Raspberries, Blackberries, Gooseberries, and Currants should be provided, and the Grapevine by no means forgotten. These seldom fail to do well. Strawberries do well on a rich, dry, but

deep soil. On banks that are not too poor or dry, they seldom fail to do well, and are often three weeks earlier than when on level soil. The Black-berry also will do on a dry, rich bank. We mention this as there are often such spots in small gardens which it is desirable to render useful. *Strawberries seldom do well in low, wet ground.* Raspberries and Gooseberries do better there.

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

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

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

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

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

In vineries where they have been forced early, the fruit will be setting, when it is usual not to syringe so freely about the flowers as before. Cold vineries will be about bursting their buds, and should have every encouragement to break regularly, which is most usually accomplished by bending the canes down as horizontally as possible. Most vineries are now built much flatter than formerly,

and less anxiety is therefore felt in regard to this bursting trouble. Where vines are grown inside altogether, care must be used to guard against the soil becoming too dry. Usually about the time of stoning, a thorough soaking is given to the soil about them. Where vines grow in outside borders, the objection is that melting snows cool the roots too much, and make too great an extreme between the temperature of root and branch. The best English gardeners now place hot stable manure on their borders, and cover these with boards, so as to throw off the rain.

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

VEGETABLE GARDEN.

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, Cauliflowers 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 crop 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 new early Potatoes, we think Goodrich's Seedling is the best; the best older variety is perhaps 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. 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 GREENHOUSES.

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.

Dahlia 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 in 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 roundish 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 half ripe 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 offsets.

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.

HOW TO PLANT.

BY CHARLES REESE.

As is my custom once a week, I drove out yesterday to the miniature fruit farm of my protege Grape-vine. The weather was unfavorable for outdoor work; and I found him, like a true worshipper of Pomona, in his cosy library, with books, magazines and papers spread out before him in generous profusion, on a large oak table, and pens, ink and paper, close at hand for notes, suggestions, &c.

His charming wife and daughters were sitting near him; one reading, another drawing, and a third sewing; altogether forming one of the prettiest tableaux I had ever seen. Happy fellow thought I, as I crossed the threshold, what does he care for the rise and fall of 5-20's or 7-30's, the fluctuation of the gold market, or the changes in sugar or cotton? He has all the heart really needs for its advancement, health, happiness and sweet contentment, the true riches which neither moth nor rust can corrupt.

Nor more visible to my outward eyes were the little statuettes of Faith, Hope and Charity, on the marble mantle before me, than to my interior perceptions were the presences of the bright angels they were intended to represent; and little vases of rosebuds, the last of the season, and bouquets of Heliotrope, Mignonette, Fuchsia, Salvias and fragrant Grasses on little wall brackets, seemed to whisper "The world is full of beauty when the heart is filled with love."

After the usual salutations were over. I approached the table, and found a host of familiar friends; *The Gardener's Monthly*, *Horticulturist*, *Country Gentleman*, *Agriculturist*, Downing's *Essays*, Barry's *Fruit Garden*, and *My Farm of Edgewood*; and turning to the library case I saw Stephens, Norton, Johnson, Thaer, Thomas, Meehan, Buchanan, Allen, Browne, Quimby, Flint, Todd, Dana, and many others, equally indispensable to a Horticulturist's library; all bearing unmistakable signs of having rendered good service to their owner.

"Ah!" I exclaimed, "here are authors whose names will live until men cease to love bright flowers and luscious fruits, green fields and sweet-scented lawns."

Sauntering leisurely round the room to admire for the hundredth time the pleasant landscapes and glowing portraits adorning the walls, I became completely absorbed in delightful reflections, and throwing myself into an easy chair I exclaimed, "Come, my boy, lay aside your note-book for a few moments, I am so charmed with your rural life that I have resolved to become a farmer. There is something so grand and elevating in the thought of being a producer,—of being an agent, however humble, to receive direct from the Almighty's own hand the riches of His earthly kingdom, for distribution far and wide, that all may be better prepared to inherit the riches of His eternal kingdom; that my fondness for city life, an active business, banks, brokers, &c., &c., which for some time has been growing small by degrees, and beautifully less, has totally departed; and in its place I see before me a vision of such exquisite loveliness, beckoning me onward, that, come what may, I will follow it."

"A few years ago you came to me for advice; I gave it; you followed it and were successful. In return for this you have given to me, from your own experience, a select list of fruits suited to this latitude. In other words, you have already told me *what to plant*, and I now wish you to tell me *how to plant*, and also, *when to plant*, that I may proceed in true order."

Looking at me with a surprised, yet quite pleased

expression, he calmly replied: "I am truly thankful dear uncle for your wise decision, and will aid you in every way that I can; but you must follow strictly my advice, for although younger in years I am somewhat older than you in knowledge of horticulture, and so will begin with lesson No. 1:

"In the first place you can afford it and you must subscribe for every one of these magazines and papers. They will be worth to you ten times the cost of subscription. The community owe a debt of gratitude to these publishers for their energy and enterprise that it will not be easy to repay. You must also read what Downing, and Barry, and Thomas say about transplanting, and then engage the most skillful and highly educated gardener you can find, no matter what his terms are, they cannot be unreasonable, as the supply and demand regulates this, as it does the value of every other commodity. If he is a thorough expert, and understands the selection of good trees; how to plant, prune, bud, graft and propagate by cuttings; three months service of such a man, if he is willing to teach, and you humble enough to be taught, will be worth more to you than three years labor of one of those 'experienced' gardeners 'with the best of recommendations,' who 'know how to do every thing upon a farm' before you engage him, but whose entire stock of knowledge upon the very points most desired by you, will be summed up in a few days after his wife and nine children, and pigs, and goats, and cats, are settled on your domains, in this wise: 'As to them cuttings, and graftings, and buddings, I niver had good luck with the likes of them in the whole course of me life; and as to plantin' a tree, divil a tree did ever I plant, but one, and that me brither shtuck in, and it wasn't a tree neither, but was a goord, that he tied to a shtick to keep it from running afther the potatoes.'

"No matter how much you may read of these interesting operations, you must, like the young disciples of Esculapius, enter the arena with knife in hand, and actually assist in performing them, before your knowledge will be of much practical use to you; and it is surprising how much more readily you comprehend the best authors upon these subjects, after you have witnessed the operation by a masterhand.

"Having said this much by way of preface, I will now proceed to answer your questions, beginning with my favorite No. 1—

STRAWBERRIES.

"If you have a fine open field, with a gently sloping southern aspect, and a good, deep, rich,

moist soil, you have all the requisites for good fruit. After a thorough plowing, sub-soiling and harrowing, lay off your rows fully four feet apart, and plant four feet apart in the row, just as if you were planting corn; and as you resolve when planting a hill of corn, that not more than two stocks shall grow there for the next six months: so resolve that not more than two plants of *Triomphe de Gand* shall occupy that hill for the next three years. Be sure to get good healthy plants in the first place; then dig two holes, six inches apart, about three inches deep and six inches wide; make a small mound one inch high in the centre of each hole, and sprinkle around the foot of each mound a small handful of finely pulverized bone dust, and spread out the roots of the plant like the ribs of an umbrella on the mound and fill up with fine dirt gently pressed down on the roots, until the crowns of the plants are just even with the surface and then remove one half of the leaves and the work is done.

"In one year, if properly cultivated, each hill will be fully one foot in diameter, and in the second or third year, two feet. This will leave but two feet between the hills for the cultivator to pass each way. By this plan you may have 2500 hills to the acre, which will produce the first year one quart, the second two, and the third year three quarts each, or an average of 5000 quarts; which at ten cents per quart, would be worth ten times as much as the product of an acre of corn, with no more labor in one crop than the other, when we consider the planting and replanting each year, and the hilling, and plowing, and husking, and shelling, before it is ready for market, to say nothing of failures, now and then, from cut-worms and crows, and droughts, and storms, &c.

Of course this plan is for field culture. They may be planted two feet apart, and each plant kept singly in garden culture.

"We will now proceed to favorite No. 2, the delicious melting *marvel of one season*, to say nothing of 'four'—

RASPBERRIES.

"These must be planted five feet apart each way. It is a very common error to plant small fruits too close together. Because they look small and slender when received from the nursery, they are too often crowded into small places, so that when they begin to grow, it is almost impossible to tell which is the parent plant, and it is impossible to have good fruit without due attention to this point; as soon as they are planted they must be cut down to within one foot from the ground; must not be permitted to bear any fruit the first year; if any blos-

soms appear, cut them off, encourage the growth of laterals as much as you can, and, in the autumn, cut all laterals back to six inches. Do not permit any suckers to grow for a year or two. If you do not like to see so much ground idle, a row of Tomatoes, or Potatoes, or Mangel Wurtzel may be planted between the rows for one or two years.— After that time you will find the spaces between the hills not any too large for the necessary cultivation. After the plant has become fully established, five or six canes may be left in each hill for bearing wood the following year.

"Blackberries must be planted six feet apart and treated just like the Raspberries.

"Grapes must be set out eight feet apart each way, Dwarf Pears ten, Peaches twenty, and Apples forty.

"The particular directions given above for planting Strawberries will apply to each of the others. Be sure to have the holes large enough and deep enough to accommodate all the roots without cramping them; cut away all the maimed and diseased portions, if any, with a sharp knife, and spread out all the fibres so that their hungry mouths will just reach to the feeding troughs at the foot of the mound, well filled with bone dust or finely-pulverized well-rotted barnyard manure, and then shovel in the dirt.

"In setting Dwarf Pears, I have found it best to plant the strong and vigorous growing sorts from four to six inches below the junction with the Quince, so that after bearing for a few years as dwarfs, they may root from the Pear and become standards.

Do not, on any account, permit very small trees to bear fruit the first year after transplanting.

"When you see the blossom burst, and the little green fruit set so beautifully on its slender stem, it will be a trial to remove it; but if you value the health and future usefulness of your pets, let them have one year of rest after their removal.

"Remember it is the great business of every plant to ripen seed that it may 'bring forth fruit after its kind;' and one pear or peach on a small and delicate tree, will exhaust its vital energies more the first year, than will half a dozen, the second or third year after it has become accustomed to its new home and new fare.

"It is from this cause more than any other, that so many thousands of young trees annually perish. The removal from the nursery temporarily checks the flow of sap and changes the leaf-buds prematurely into fruit buds, which blossom and show fruit in the early part of the season, but like the fond

mother who gives her life's blood to her hungry babes, they struggle on, taxed to the very utmost, until the hot breath of August passes over them and they wither away. There 'must first be the blade, then the ear, and then the full corn in the ear'—if you look for a healthy and orderly development of all the faculties. The operations of nature are slow, but the unalterable law of cause and effect is written in characters of fire all over the Universe, and if we expect good results, we must obey her commandments in every particular."

Promising my young friend that I would try to obey nature by putting into practice forthwith the excellent advice he had just given me, I rose to depart, and all the way home had the most delightful anticipations about model farms, orchards, vineyards, conservatories, &c., &c. Who knows? perhaps before the next number of the *Monthly* makes its appearance I may be the fortunate owner of one, and you may hear again from my young friend.

NEW ROSES OF 1864.

JOHN SAUL, WASHINGTON, D. C.

During the past summer and autumn I have made notes, as usual, on the New Roses of 1864; those on a few of the best varieties I thought would be acceptable to some of your Rose-loving readers. The great fault with many of the newer Roses is sameness of color; raisers run too much on Geant des Batailles and General Jacqueminot, though many are now breaking into more distinct strains. We have now got some good whites—but they are delicate, or, at most, moderate growers. We want some of this color of vigorous growth, with healthy enduring foliage and vigorous constitutions. English growers have, of late, given much attention to foliage,—without healthy foliage no plant can have a good constitution. A yellow Perpetual has been sought after for some years, and this a French florist now promises us; it is to be hoped we may not be disappointed, as it too often happens when these novelties are "let out."

The present year a magnificent yellow Rose, "Marshall Neil," made its appearance. My plants of this have not yet bloomed—but from the glowing descriptions given of it when exhibited in England, there can be but little doubt of its beauty.

HYBRID PERPETUAL ROSES OF 1864.

Abbe Raynaud—Is a large full beautifully formed flower, of a dark violet color.

Andre Leroy d'Angers—Ought to be good, as so it has proved, being large, full and finely shaped,

of a dark velvety purple; a very fine and distinct rose.

Alphonse Belin—Has large, full, well formed flowers; of a clear, distinct cherry red; very beautiful.

Centifolia Rose—This very distinct rose is a robust grower, having large, full, finely shaped flowers, perfect in form; of a bright clear rose color; very distinct and fine.

Claude Million—Here we have a beautiful imbricated flower, of a velvety crimson scarlet; distinct and fine.

Duchess de Morney—Cultivators in Europe regarded this as the finest flower of the season—with me it has proved very fine, and a free autumnal bloomer; flowers large, full, beautifully cupped, of a deep rose color; a distinct and beautiful flower.

Eugene Verdier—A flower of fine form, large and full; color a dark violet; a superb rose.

George Prince—This vigorous growing variety has large, full globular flowers, of a dazzling crimson, shaded with deep rose; a first-class new flower.

Jean Touvais—Flowers large, full and beautifully cupped; color a dazzling crimson; a beautiful new rose.

Leopold Premier—Has very large, full flowers, perfect in form; color a brilliant crimson; very vigorous in growth; an extra fine flower.

Madame Victor Verdier—We have here a flower large, full and of exquisite form, finely cupped; color a beautiful cherry rose; growth vigorous; one of the best new roses.

Marechal Souchet (Damaizin)—Have large, full flowers; perfect in form, of a beautiful rosy carmine; very distinct; a superb rose.

Pierre Notting—Flowers large, full and globular; color a very dark red; exceedingly distinct; this will prove one of the finest Roses.

Prince of Wales—This magnificent Rose was raised by W. Paul, the celebrated Rose Grower, and is considered the finest he has sent out. I have, however, found it at times variable. Flowers large, double, of fine form, beautifully cupped; color a light vermilion; a beautiful flower.

BOURBON ROSES OF 1864.

Madame de Stella—Flowers large, full, perfect in form, beautifully cupped; of a bright light rose color.

Madame Joseph Guyot—Has large, full, finely formed flowers; color a deep crimson; a beautiful new flower.

TEA ROSES OF 1864.

Jaune d'Or—A seedling from "Gloire de Dijon," not quite so robust a grower, but a free bloomer;

flowers large, full, globular; of deep yellow color; very fine; an exceedingly valuable new flower.

Lays—Flowers medium size, full; of a pale yellow; a very fine new Tea Rose.

Among the Roses of 1863 the following have again bloomed superbly:

Baron de Rothschild, *crimson scarlet*; Deuil du Prince Albert, *dark velvety crimson, almost black*; Hortense Blachett, *white*; Lady Emily Peel, *white, occasionally edged with carmine*; Lord Clyde, *crimson, shaded with purple*; Lord Macauley, *brilliant velvet crimson*; Madame Freeman, *flesh, changing to white*; Madame William Paul, *deep crimson*; Murillo, *deep carmine*; Prince Henri des Pays Bas, *brilliant crimson*; Seur des Anges, *delicate rosy flesh*; Vanquieur de Goliath, *crimson scarlet*.

MY CALADIUMS.

BY SWIFT.

The meaning of the word *Caladium* seems to be lost in obscurity; though so far as the cultivation of this class of plants is concerned, or any other for that matter, whether we know the meaning of the name, or the name itself is of little moment, for

"If we can name a thing,
We name it and pass on to what is next;
But having not this substitute to bring,
Are by the wonder fixed."

For indoor decoration there are some plants that are indispensably useful, which could not well be dispensed with; but the *Caladium* is not one of them. Beyond a prettily painted leaf, they have little to recommend them, bearing insignificant flowers and no fragrance. Inasmuch as they grow and thrive best at a time when flora has deserted indoors, and is bestowing, with a prodigal hand, her smiles and her beauties in the hedge-rows and along the wayside; and as they flourish in a temperature ill suited to many plants, they prove very useful in hiding the nakedness of the greenhouse during the summer months.

Before treating of the Stove varieties allow me to introduce that glorious old plant, *Caladium Esculentum*.

In one part of my garden there is a brick walk six feet wide—leading to a pump—down the centre of which runs the waste water to an underground drain. The third week in May I planted two small roots about the size of a walnut, one on each side of the walk, opposite to where the water enters the drain. They soon began to grow, and each succeeding leaf increased in size until they had attained the goodly proportions of two feet in length by twenty inches in width.

But now an evil presented itself for which I was unprepared. The last leaves in forcing their way from the sheath that enclosed them had cracked considerably, and when unfolded presented a ragged appearance, detracting from the beauty of the plant. Being at a loss to know the reason, and judging it to be either in the soil, or the roots or both, I spread some old hotbed manure on the ground around both plants.

Imagine my surprise when the next leaf on plant No. 1, opened whole and sound and *one foot* longer than its predecessor. Plant No. 2 divided, and instead of one leaf a dozen small fry made their appearance.

The largest leaf of the season measured four feet in length and thirty-five inches wide. If to the leaf be added the leaf-stalk which was fifty inches long, we have the enormous size of one leaf measuring *eight feet two inches*. When the first frost nipped the leaves the plants were lifted and stowed away in the cellar, being no more trouble to keep than so many Dahlia roots.

Every cottager in the land who is in possession of the smallest patch of ground should grow this plant. The leaves have a bright silvery color, and are shield-shape. The whole plant has a grand and imposing effect that will help the head and the heart to appreciate and love the beautiful works of the Creator.

GROWING NATIVE GRAPES IN POTS OR BORDERS.

BY GERALD HOWATT, YONKERS, N. Y.

Noticing an article in the "*American Agriculturist*" of January, on growing Hardy Grapes in pots, vs. Open Air, signed "Nurseryman," I thought my experience in both systems (of vineyard culture,) would not at present be out of place. First, I wish it to be understood distinctly, that I am no Nurseryman, nor either have I any plants to sell, either in or out of bed, in or out of pots; in fact, no axe to grind or razor to sharpen. My object is, to give my opinion, reasons and practice, hoping they may be the means of saving the public. This past Fall, I have planted a vineyard of over four thousand plants, three thousand five hundred of those are plants that were grown in pots; these though being raised in pots I could plant in September, the balance of my varieties I could not get in pots, and consequently were obliged to wait until November, to get them out of the *wide border*. While this item alone is greatly in favor of Pot Culture, my principal reason for liking the pot culture system is, that they can be removed at any time, saving their

lungs intact, you can take them without injuring a fibre; the freight is certainly more, but that is certainly better than having a lot of mutilated, dried up roots coming to hand, with probably half a dozen fibres attached to each plant, with all your mulching in mud and water; the first year your growth is nothing; then again, when you go to a Nursery to select your plants when grown in pots, you can do so; pick out the strongest. Go to a Nursery where they are grown on the border system, say even six inches apart, can you select the strong from the weak plants? Echo answers, decidedly not. You tear off the fibres of those that you take, and those left behind are spoiled; to any practical man this will be obvious. As "*Nurseryman*" remarks, what sane man would take a hot-house grape-vine, grown in a Border, to plant in his vinery; and certainly if we want excellence in a vinery, we want it in a vineyard; as that is now, I am happy to say, becoming one of the institutions in Horticulture that will pay, when properly managed. Not that I can agree with a very competent writer, who says they can be as easily raised, and at the same expense as a hill of corn; but that they will pay a large per centage, two to five hundred dollars net, an acre. I think that I am within the mark, when the proper varieties are grown. Perhaps the great reason may have been, why Nurserymen have not gone into the Pot Culture of Hardy Grapes, that the public would not pay for them; they must not suppose that plants can be raised for the same price in pots, as they can on the border system: it will pay the Nurseryman better to sell Border plants at six dollars a hundred, than it will at \$50 a hundred grown in pots; and I assure your readers, that I would rather pay \$75 a hundred in pots, than ten for those grown in borders. To the amateur this may seem strange, but such is a veritable fact; I am no novice in Vineyard and Wine making, having made over 500 gallons a year, besides our Market Grapes; and I assure them if I had a hundred acres to plant, I should have all Pot Plants; as I am confident by experience, that I would save over 100 per cent by it, as it is natural, that when we invest we wish as large a return as possible.

As to the wood ripening better in pots, than in borders, that must be a foregone conclusion to the greatest novice or supporter of Broad Borders. Grown in borders they are like the stage of a lean to greenhouse, packed with plants; the front side shows a good appearance, but look at the back; where are they a spindling set. When grown in pots, staked, tied and nipped, and placed at a

good distance apart, the sun and air have free access around them, and your wood and roots are both ripened.

This past Fall I had to travel around the Nurseries a good deal, to try and get the vines I wanted; a good many of those that I visited, say that they are going into the Pot Culture, as they see the other will not take. I may now say, that the majority of what I saw in Broad Borders, did not average over two feet high, and looked more like a strong blade of Timothy hay, than they did a vine; those on the other hand grown in Pots, run from four to six feet high, and wood well ripened; such plants pay to plant, and your returns are sure. The others I would not plant if they were presented to me.

The following are the Nurserymen that I find are making a speciality of growing Hardy Grapes in Pots. I do not do it to advertise those gentlemen, or their wares, but to inform your readers that they may be saved the expense and time that I was at in finding what I wanted, which was a considerable item, there are so many Nurserymen: Mr. D. D. Buchanan, of Elizabeth, New Jersey; Mr. Peter Henderson, Jersey City; Mr. G. Marc, of Astoria; and Mr. J. Cadness, of Flushing; those four embrace all that I saw around New York. If your readers may make use of them, these should remit to you the price of an advertisement, as it will save them a great deal of travelling and disappointment. I think that we can safely predict, that growing Hardy Grapes in pots, will become the rule; not as it unfortunately is at present, the exception; or at least when growers will see that it is to their interest to have them in pots. In a future number I shall give you my system of Planting Primary Varieties for different localities, varieties for Market, Wine-making, &c., &c.

ACHYRANTHES VERSCHAFFELTII, OR IRESINE HERBSTII.

BY G. SUCH, SOUTH AMBOY, N. J.

This plant, so highly esteemed for its ornamental foliage, was found thirty years ago, and dried specimens sent to Dr. Hooker. Since then it has been entirely overlooked, until Mr. Herbst lately introduced it into England, from South Brazil, and Mr. Baraquin, Collector for Mr. Verschaffelt, sent him a plant from Peru.

It is about 18 inches high; having roundish leaves of light carmine, heavily shaded with brownish purple maroon, veined dark carmine. The stem is carmine, and there is not a spot of green about

the plant. The mixture of colors is most harmonious and effective.

So far it has produced neither flowers nor fruit; being increased by cuttings, which root as quickly and easily as *Verbenas*.

Most of the florists in England and on the Continent, are loud in their praise of the *Achyranthes* as a bedding plant; disagreeing, however, as to whether it prefers moist and cool weather, to warm and dry, or clay soil to sandy. A writer in the *Gardener's Chronicle* says, it does well with him in light, rich soil, and a moist and sheltered situation. Another replies, that it does admirably with him in clay soil, on high ground, fully exposed South and West.

What concerns us on this side of the water is this: at the close of the season *all* agreed in saying the beds of *Achyranthes*, or *Iresine*, began to have their best appearance only towards the end of August. A fierce enemy of this plant for outside decoration, asks the British Horticultural public what value a bedding plant can have, that only puts on its fine appearance late in August. He is aware he says, that it was very beautiful at Kew, and elsewhere about London, in the Autumn; an Autumn, however, the *most brilliant* within the memory of man. "Very effective in bright and delightful weather," he owns.

My conclusion is, that, since "brilliant" weather is needed to bring the *Achyranthes* to a state of "perfect beauty," this happy condition will be realized in our climate, very early in the season, and continued until late in the Fall; and very late, too, as the plant endures several degrees of frost.

[The whole tribe of *Amaranthaceous* plants to which the *Iresine* belongs, is perfectly at home in the United States; and we guess from this, that this new introduction will be very desirable to us.—Ed.]

ROOT PRUNING AND WINTER PROTECTION OF FIG BUSHES.

BY WILLIAM FOWLER, BALTIMORE, MD.

The following method I have practised here for the last nine years, of protecting Fig bushes in winter: from the 10th to the 20th of November dig a trench around them, cutting away about one half of the roots they have made the past season, bending down the branches to the ground, and covering them with the earth out of the trench, from two to three inches in thickness; and in Spring uncover them, from the 1st to the 10th of April. They bear fruit abundantly, ripening from the 5th to the 20th of July, and continue bearing until Novem-

ber; and later if not destroyed by frost. Of about 20 Fig bushes, each covering at an average an area of about 18 feet in diameter, we have in one week 4 bushels of ripe fruit, four of the fruit weighed 1 pound 2 ounces.

The kinds that produce most fruit, are the Brown Turkey, and White Marseilles. We have some other kinds on trial, amongst them the Castle Kennedy Fig, and some seedlings raised here, of which I may report at some future time.

[Mr. Fowler had on exhibition at the last Fall's meeting of the Pennsylvania Horticultural Society, the best and finest American grown Figs we ever tasted. We are very much indebted for the foregoing remarks to so successful a cultivator.—Ed.]

PEARS AT HARRISBURG, OHIO.

BY E. MANNING.

Another years experience, has fully convinced me of the variability of the different varieties of fruits; and as the pear appears to be subject to greater variation, in different soils and localities, than any other fruit which I am acquainted with, it is difficult to know what varieties are suitable in this or that locality, only as we can see them growing in their different places.

But as the different varieties of pears vary in their chemical compounds, it is but a just conclusion that soils varying equally in different compounds, must produce different results. For example: can we suppose that a strong calcareous soil would produce the same results, as the sandstone formation? Soils deficient in different compounds, then must produce quite opposite results. The soil here, is clay, with a strong limestone and pebble subsoil; and for the benefit of those who are similarly situated, and contemplate planting, I will give you my experience, as far as I have sufficiently tested.

The different varieties in quality, are as follows: Bartlett; a good and regular bearer; quality, first.

Bloodgood; early, of medium size, with same age, a good bearer, nearly first rate.

Brandywine; of medium size, good bearer, of first quality.

Doyenne D'Ete; small, or below medium size; a great bearer, nearly first rate.

Kingsessing; rather large, of good second rate flavor; not a very early bearer.

Madeleine; medium in quality, and a tolerable bearer.

Osband's Summer; nearly first rate, a good bearer, very handsome, and an early bearer.

Beurre Amanlis; tree thrifty; a great bearer, fruit worthless; a hog would not eat them unless being very hungry.

Tyson; of medium size, a good bearer, nearly first rate, tree thrifty.

Queen of August; (Syn. Moore's Pound,) of large size, first quality, tree thrifty.

Rosticzer; the richest highest flavored, with a delicious aroma, superior in flavor to any other pear yet tested; not quite as sure a bearer, nor yet at all handsome.

Beurre Bose; I can well indorse all that Mr. Downing has said of it, large, beautiful, of first quality, a great and regular bearer.

Beurre D'Anjou; tree healthy, vigorous, fruit large, only second rate flavor, or hardly that, is from home here.

Beurre Diel; tree very vigorous, fruit large, dull green, little or no flavor, entirely unworthy of cultivation.

Beurre Clairgeau; very large, of first quality, tree of only medium vigor, a good and regular bearer, fruit very handsome.

Beurre Golden of Bilboa; large, very beautiful, of the highest flavor, the very best pear of its season, a great and sure bearer, ripening some time before the Bartlett. Its paradise is here.

Belle Lucrative; tree of medium vigor, a great and sure bearer, fruit entirely worthless, never have seen one fit to eat.

Duchess D'Angouleme; fruit very large, of second rate flavor, tree thrifty and productive.

Doyenne, White; tree of medium vigor, fruit of first quality, sometimes cracks and spots badly, showing conclusively the decline of the variety. Cannot depend on it.

Flemish Beauty; tree vigorous, fruit large, not quite first rate, a good and regular bearer.

Louise Bonne de Jersey; fruit large, good bearer, second rate, tree thrifty, sure bearer.

Onondaga; tree very thrifty, great and sure bearer, even while young, not quite first rate, but its large size and vigor render it one of the most valuable.

Paradise D'Automne; tree vigorous, fruit large; very handsome, of first quality; a great and sure bearer, even while young one of the best.

Seckel, quality first; fruit improved in size by good culture.

Urbaniste; tree thrifty, fruit large, have never ate one more than second rate.

Pius IX; fruit very large, nearly first rate, tree very vigorous.

Doyenne du Comice; fruit very large, a great and sure bearer, of the highest excellence.

Beurre Bachelier; fruit large, second rate, a great and sure bearer.

Vicar of Winkfield; fruit large, not quite first rate, when well ripened not very many better, tree vigorous.

Pound or Uvedale St. Germain; worthless.

Lawrence; fruit medium, second rate, tree good bearer.

Winter Nelis; fruit small, hardly second rate, unworthy of cultivation.

Doyenne d'Hiver d'Alencon; fruit medium, nearly first rate, a good bearer.

Besides quite a number of other varieties less known to the public, which I think not worth while to mention; all of which I shall top graft.

All the varieties I have mentioned, I have pretty well tested, and this is the result here.

THE JOURNAL OF COMMERCE ON "DARK COLORED FRUITS."

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

In a late number of the *New York Journal of Commerce*, under the head of Agriculture, we find some criticisms upon our articles in the *Horticulturist* and *Gardener's Monthly*, upon the color and hardness of plants, &c.

We would have preferred the name of the writer, and received from him a copy of the *Journal* containing his criticisms; but we have, through the kindness of a friend, received a copy, and presuming the writer to be an editor of the *Journal* we shall reply accordingly.

He charges us of using expressions that have a "poverty of meaning" and "outrageous assumptions," when we say that health and hardness of plants is in proportion to the amount of heat, electricity and carbonic acid absorbed (other conditions being equal.) "One who can, with confidence, use such language concerning heat and electricity must be either far behind or far before the science of the age." "One who can make such a sweeping assertion as to plants, should at least have tried some experiments upon their powers of absorption." From the above remarks we would infer that he does not admit that *plants absorb heat and electricity*.

If he will refer to *Youman's Atlas of Chemistry* he may perhaps find who is behind the age of science. On page 92 we find the following remarks upon the subject: "The extent of the antagonism of vegetable and animal life may be more clearly displayed as follows: 'The vegetable absorbs heat and elec-

tricity, the animal produces heat and electricity.”

It would appear from this quotation that we are in very respectable scientific company.

Again our antagonist says, “We are obliged, however, to infer from the articles already published, that so far as color is concerned, he has ascertained nothing which was not previously known, namely, that it has some connection with the vital functions of vegetation, and that an expert can prognosticate somewhat upon that basis. We do not intend to deny that dark color in fruit is an indication of hardness.”

Here we have an admission that hardness has some relation to *color*, and that it “*was previously known*.” Yet he says, “If any one can prove it, we would like to have him do so.” “We and many others are interested in knowing the exact truth.”

Here we are led to inquire why *prove* what was previously known?

Again he says, “The physician considers the color of his patients as among the symptoms to be noted; yet no one argues that black men can endure cold better than white because they absorb more heat.”

From these remarks it would appear that he either supposes we will admit his deductions or our arguments will make us do so, neither of which must follow.

In the first place we have not been simply discussing about plants withstanding *cold*, but all the conditions which lead to debility and disease.—Secondly, we cannot contrast animal life with vegetable, unless what we wish to compare is common to both, which will be apparent from the following quotation: “Plants and animals are both endowed with vital or living properties; they both grow, reproduce their kind and perish.” “Yet the life of these two orders of beings is of a different nature, and depends upon different—nay opposite—conditions.” The actions and changes in which vegetable life essentially consists are exactly reversed in the case of animal life.”—*Atlas of Chemistry*.

Although we admit the law of color to be of universal application and to apply to animal life as well as vegetable, yet the conditions upon which they depend are “*exactly reversed*,” namely, the health and hardness of animals is in proportion to the amount of heat, electricity and carbonic acid *produced*, and this is in exact relation to their color all other conditions being equal. The dark color representing the positive and producing power, and the light the negative.

He further says, “Such logic is easily reversed

when applied to fruit, in the style of this writer.”

“If dark colored fruits absorb more heat than light ones, then they need more heat in order to supply their absorption, and in that proportion are less hardy.”

We shall now try this writer's logic and see if his deductions are correct, namely, that they *are less hardy*, by the following illustration:

If hardy, healthy persons consume more food than debilitated and diseased persons, then they need more food in order to supply their consumption, and in that proportion are *less hardy and healthy*.

The absurdity of the conclusion is so apparent that we do not think it necessary to give another illustration.

Again he says, “He, however, is not alone, in fact he rather goes with the multitude in using language upon these subjects which would be alike puzzling to Drs. Black and Franklin, of former days, and to Faraday and Leibig, of modern times.” In reply to this we would like to ask this writer to tell us by what means he knows “which would be alike puzzling” to those *dead* and *distant* philosophers. He should be careful that he does not fall into the same errors he accuses others of making, “outrageous assumptions.”

He says further, “He has not given us one iota of new or valuable information, or proved one item of his theories.” In reply to this we would say it has not been so much our object to prove theories as to establish facts, and if some of our deductions should be incorrect, it does not follow that our premises are also false. We have demonstrated them by years of careful observations, we now ask them to be tested by facts. Finally, he has made an attempt to meet our arguments by apparent facts which are worth some consideration.

He says “New England white grapes grow wild, that not only surpass in hardness the toughest of his list, but seem to equal the darkest of their sylvan companions.” Here we are naturally led to inquire from his positive expressions, when and where did he compare his New England white grapes and find them to “*surpass in hardness the toughest*” of our list, namely, the *Native Hamburg* and *Osee*. “One who can make such sweeping assertions about” grapes “should at least have tried some experiments” with them and be acquainted with “the toughest of our list.”

But as his arguments might appear plausible to some, we shall be more explicit and show wherein his illustration and argument are deficient.

We have stated that the conditions must be

equal, therefore the comparisons should be made with the same classes, and to be exact they should be made with the same varieties.

For instance, we cannot compare our native grapes with foreign, neither can we compare wild Fox grapes with improved and cultivated ones, but we may white Fox grapes with black Fox grapes of the same order under similar conditions; but the most accurate and satisfactory examples are those produced from the seed of the same flower or fruit, and their light colored products compared with their dark ones. It appears to be very unfortunate for this writer, that out of all the various orders of vegetation he could only find "*New England white grapes*" and they "*but seem to equal the darkest of their sylvan companions.*"

But yet it is still more unfortunate for his case that he made that selection, for we have from the woods of New England the *white* grape that grew wild, and it has been fully tested and proved tender both here and in Illinois; while the black grape of the same class from New England has proved hardy.

Here we have the facts, and if they are "*serious deficiencies*" we will have to submit to them.

In conclusion, we would say that we have stated the facts in regard to our experiments and observations, and whether they have been *chemically* or *physiologically* considered, makes but little difference, so we arrive at the *facts*. Suppose an individual should discover that all the plants he had, that were very light colored, did not equal, in health and hardiness, the darkest colored plants of the same class, and that it was confirmed by the observation of others, and that he found this to be in relation to the amount of heat the plants absorbed. We ask, what difference does it make in the *facts themselves*, how, or in what manner the subject was investigated?

[It may add to the interest of this discussion if we observe, that the "*Massachusetts white*" grape is admitted by grape culturists to be a type of the White Fox Grape of New England; and though it grows with great vigor, as we should expect in a natural Fox grape, it does not grow with near the same luxuriant vigor the black Fox does.—ED.]

DISEASES OF THE PEAR.

BY THOMAS MEEHAN.

Read before the Penna. Hort. Society, Feb. 6, 1866.

Though I have made the "*Diseases of the Pear*" a matter of long study, I must confess that I am not satisfied with what I have learned of it; of one thing, however, I feel pretty certain, that many

separate causes often tend to produce Pear diseases, and that any course of study that proposes to look for any one cause for any one form of disease in this tree, will lead to disappointment.

Unfavorable soils, unfavorable seasons, unfavorable stocks, unfavorable parent trees from which scions are taken; parasitic fungi both precedent to, and accessory with, the phenomena which mark disease—all these have their separate advocates in the accounting for causes,—but, if I mistake not, none of them will satisfactorily account to me for the trouble; but frequently several of them, and perhaps all at times, are banded together in the production of certain forms of disease.

The most usual Pear diseases are called—

1. *Fire Blight*, which has been sub-divided by Pomologists into two classes, namely, "*Insect Blight*" and "*Frozen Sap Blight.*"
2. *Canker.*
3. *Leaf Blight.*
4. *Knotting*, or hardening of the fruit.
5. *Cracking.*

Fire Blight is known by its effects, which are often made painfully visible to the Pear grower during the early summer months, by the sudden death of branches of any size or age.

When the disease is confined to small shoots, of one or two years old, it is usual to refer the death of the branch to the attack of a small insect called *Scolytus Pyri* by Entomologists; but I do not think this insect is liable for near all the damage that is placed at its door; for we find in almost all cases where injury is done to the wood of trees by insects, the damage is done after the egg is deposited—either by the injecture of a species of gall with the egg, which circulates through the sap just as we feel after the bite of a musquito in our flesh; or by the effects of the larvæ in sustaining itself. The eggs of the *Scolytus Pyri*, are said to be deposited in July or August, but I do not remember ever noticing a case of insect blight after August. Most of this damage occurs in June and July. I may observe, however, that this insect is almost unknown in our neighborhoods, and what I have seen of its effects has been but casually in distant parts. The other section, of Fire Blight—as it is usually called where the distinction is made—Frozen Sap Blight, is unfortunately too common with us. In June and July the branches of some Pear trees die away as suddenly as if they had been stricken by fire. The small branches are not merely attacked, but frequently half the tree will die in one night. Some seasons it is worse than others, but it is evidently no worse now than it was a hun-

dred years ago,—and in this there is some comfort ; for as fine Pears have been had for many years past, we very reasonably hope that we shall, at least, do as well as our forefathers have done in Pear raising ; for all the injury Fire Blight can do us, annoying as it is, is to cause us once in a while, to lose a fine branch or tree.

I cannot help believing that this blight is in some way connected with injury received in the winter time ; though I, at the same time confess, that I fail to trace very clearly the way in which this is brought about. My only reason for looking to frost for the cause, is one of analogy. I have seen the Prairie and Noisette Roses, and the common Sweet Jasmine get through the winter apparently uninjured—that is to say, the bark apparently green and fresh, and the buds full and plump,—so apparently healthy in fact as to push out as freely into leaf as the shoot of a Pear tree blighted, as we are now discussing, and during a hot day in June or July die away as suddenly as the Pear shoots. On examination, such shoots have been found to have had the heart wood entirely decayed, and the sap not being able to get up in sufficient supply to make up the waste of a hot summer day, the life had to give way. But herein is the difficulty of this theory of winter injury. In all of these analogous cases of injury from winter causes, it is the shoots of the past year or two's growth—while in injury by fire blight the past season's growth is rarely injured, except by the death of parts below it. It is branches of three, four, five, or more years' old that are stricken, causing the death of all above the fatal spot.

The whole theory of frost injury is also weakened by the fact that if it is in any way to be attributed to the influence of climate on unripened wood, trees growing in wet or cold soils should show fire blight more readily than those on a warm or dry soil. But as I had an excellent chance of observing this year, by a widely extended tour through many parts of Pennsylvania, trees growing on the driest, and, we will thus suppose, most favorable condition for the health of the Pear, suffered as a rule as much as any other. One of the worst cases of fire blight I saw this year, was an orchard about fifteen years old, near Coatesville, which was growing on excellent Pear soil, as the otherwise general healthiness of the trees attested, on the side of a gentle limestone hill, with a South-eastern aspect, protected on the brow of the hill by the North, with extensive farm buildings, and a very healthy old apple orchard.

We all know what an admirable protector a

thick coating of old bark is, as a protective against the weather ; and we cannot but feel surprised that wood, under such thick old bark should suffer first, leaving the young, and we may suppose more sappy and immature wood of the past season, to go unscathed. If we are to allow there is any force in the analogy, that if roses and vines are injured in their young wood, in the manner of fire blight, the Pear blight may be possibly owing to the same cause.

I am sorry that I have not had the time or opportunities to make microscopic investigations of all the phenomena accompanying the disease. I strongly suspect, that in some way the vessels in some parts of the plant would be found weakened perhaps by frost or other injury, and that some species of fungi, the spores of which are always in waiting for their proper opportunity of developing the species, finding their proper nidus, at once develop themselves ; and as we know, when once a spore of fungi gets started on a diseased vessel, its mycelium or thready spawn will spread and kill all the healthy cells in the vicinity, with almost lightning rapidity. Wherever this rapid destruction of the cells takes place, completely through the stem, of course the transmission of fluid through that part is at an end, and all above speedily dries up and dies away.

One thing seems to be well established, that on very old trees, or say trees over twenty years old, the fire blight is very rarely seen ; and on highly cultivated trees, it is worse than in less vigorous and slow growing ones.

The Canker is a very common disease in the pear, which usually attacks the bark of the standard Pear. It does not penetrate usually into the inner bark until some time has elapsed ; and if it be taken in time, and scraped away, anointing the cleaned part with sulphur and soap, it generally recovers. I hazard a guess, as in the fire blight, that microscopic observations would show this to be the doings of a minute fungus, perhaps of a species allied, without the power however, of penetrating far in from the external air, as that has. This form of disease seems to have been overlooked in American fruit books, although the disease is by no means a very uncommon one.

Leaf Blight is entirely unnoticed by Downing, and only by Barry, in so far as it interferes with propagation, by budding of young stocks ; but it is one of the greatest foes to the ripening of the fruit of the Pear that the cultivator has to contend with.

Leaf Blight is, I suspect, a sort of premature

maturity. The plant is lulled as it were with a state of rest, while other active forces of nature are still urging on the necessity of growth; and we know how things work, when drawn by contraries,—something breaks. This is often beautifully illustrated in the Fall blossoming of fruit trees,—giving way to the voice of the tempter, the trees imagine it is time to rest, and throw off their Summer green leaves, the guardians of their growth and strength; but the proper time is *not* come, and regretting the ease with which the charmer gained the victory, they try to repair the injury by again expanding into leaf, throwing open in the effort their prospective Spring blossoms, but too late to repair the mischief done. No tree that takes time to ripen its wood in the proper time nature intended it should occupy for this purpose, ever blooms in the Fall. It is universally a premature ripening of the foliage, and those trees which flower the most profusely, in the Pear family, are those which have suffered the most from the leaf blight, or early falling of the leaves. Pears cannot ripen if they have not matured before the leaves fall. They will soften, and become in some sense eatable; but this is a chemical operation, and one deriving no aid from the vital functions of the tree, and consequently the flavor is insipid, and the fruit worthless. Many persons have thought it strange in the ripening of Winter Pears, say the Easter Beurre that they will preserve them in a certain manner one year, and they will ripen excellently in February or March, while another year they will entirely fail, though preserved precisely in the same manner. They continue green and shrivelled until the end. This is owing to the trees having suffered from leaf blight. No fruit can ripen properly without the leaves continue healthy, up to the time of full maturity. They are the nutritive organs of the plant, without them, everything is at a stand still.

The best preventive of leaf blight is a cool soil—not cold and wet—and a situation which is not likely to suffer great alterations of heat and cold. Though differing perhaps from some of my friends, I believe that the leaf blight in Pennsylvania would be nearly unknown in large trees if Pear orchards were kept in grass, and the grass prevented from growing too long, so as to exhaust the soil, by either grazing, or having several mowings through the season. A sod of short grass keeps the soil cool, open and porous; and is one of the best conditions for healthy Pear tree growth.

Knotting or Hardening of the fruit is another

disease I have never seen noticed, by fruit writers. It is not very common, but occasionally affects a whole tree. Last year I saw a tree of St. Germain, that was otherwise remarkably healthy, but the fruit of which were all as hard as stones, and remained so to the last. The tree, I was informed, had been getting more and more so every year. I suspect this also to be of fungoid origin, and should recommend such trees to be regrafted with other kinds, or from healthy trees of the same variety.

Cracking, as it is often understood, is confined pretty much to the White Doyenne, or Butter Pear. This is certainly of fungoid origin. About July very small discolored patches are discovered under the tissue of the leaves and young fruits, which become blacker, and spread perhaps a quarter of an inch, and then seem to have reached maturity, and cause a check to any further growth in that immediate quarter. In the fruit which has to swell, the parts unaffected have to separate from the affected parts which do not swell; hence the cracks which we are so familiar with. The fungus does not seem to spread much, and is otherwise short lived, for it does not wholly destroy the leaf, as the usual leaf blight does. The leaves of a Butter Pear affected by this disease, will stay on the tree until quite late in the season.

The spores or seeds of this fungus, are probably in the cells, and not in the sap; for if a tree affected with this disease of the Butter Pear, be grafted with any other variety, that variety is free from the disease. If it were in the sap, it would of course circulate through with the liquid drawn up through the stem of the Butter Pear. Yet some people assert that spores can be made to enter the plants system, with the moisture it absorbs through its roots, and that these spores can be made to germinate when they come up into the leaves, in the most perfectly healthy plants. I remember some years ago, reading of some experiments made by a celebrated vegetable Physiologist, Edward Queckett, who watered wheat plants with water in which smut, a species of fungi, had been mixed, and these healthy plants watered, bore smutty wheat. But the fact that these wheat plants were perfectly healthy, had to be assumed of course, and so far the argument is not quite conclusive.

There is another kind of cracking which is becoming quite common among Pears. Just before the fruit is ready to mature, one or two deep cracks from skin to core, makes your promised fruits as bad as the fruits of the Dead Sea, which ought, if travelers tell true, turn to ashes on our lips. The Beurre Giffard has with me, a provoking habit of this kind, so as to make it nearly worthless, as a dependable fruit. I can detect no trace of fungi in this appearance, and am utterly at a loss to offer any explanation. Most probably some of our friends have had more opportunities of observing this disease than I have; and as the main object of what I have said, is rather to bring out the opinions of others, than to offer any convictions of my own, I beg here to leave them atter open to your further discussion.

The Gardener's Monthly.

PHILADELPHIA, MARCH, 1866.

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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ARE DARK COLORED PLANTS OR FRUITS HARDIER THAN LIGHT ONES?

It is not more than two years ago, we believe, in an article on Raspberries and Blackberries, that we pointed out the probability of light colored fruits being the tenderest,—but by the articles of Dr. Stayman, who had, previous to our suggestions, been experimenting particularly on this subject, the matter has become one of great interest to intelligent cultivators.

We stand, we believe, entirely alone in sustaining Dr. Stayman's views,—all of our contemporaries, who have noticed the subject at all, oppose it.

It is not unfrequent—indeed it is the rule, when any new subject of philosophical inquiry is presented,—that controvertists mistake the position they oppose, and hence mystify and obscure what otherwise would be clear enough. Dr. Stayman's views are going through this ordeal.

A writer recently remarked, that "if this new fledged science of the Kansas philosopher were a living thing, the black man would stand cold better than the white; and the Black Hamburgh Grape be the great vineyard grape, and the White Fox tribe of Maxatawnys and Rebeccas, only to be grown in hothouses or glazed structures,—but as we know this is not the case, the animal is little more than still-born at best."

The only merit of this criticism lies in its fancy. The real matter is this:—paleness has long been identified with sickliness; that is to say, the pale man or the pale plant is not considered so hale and hearty as the ruddier neighbor; paleness being used as a comparative term between closely allied individuals. Varieties of fruits we class distinct from species of fruits—varieties of fruits, in fact, are precisely as individuals amongst men. No dozen children, from the same parents, are like each other; and no dozen seedling apples are more like their parent fruit than these. As the pale-faced child will generally be more tender than his

brother who is darker,—Dr. Stayman so shows the rule holds good with seedling fruits of the same individual families.

This we believe to be our correspondent's claim to a new discovery, and no more—and they have our hearty endorsement. No writer has before put them into a shape to be of practical use to cultivators,—and Dr. Stayman deserves the credit of discovering a valuable rule in pomological science.

NEW BUILDING FOR THE ACADEMY OF NATURAL SCIENCES OF PHILA.

The readers of this journal have no idea how much they are indebted to the Philadelphia Academy of Natural Sciences, of which we gave some account a few months ago. The widely extended popularity and favor with which the *Gardener's Monthly* is every where received, comes home, of course, directly to the editorial management; but we do not conceal from ourselves that very much of the information we are able to impart to our readers is due to our connection with the Academy, and to our acquaintance with other persons who are more worthy members than ourselves.

Horticulture is immediately connected with the Natural Sciences,—and their advancement is therefore the interest of Horticulture. It will, we are sure, gratify our readers to learn that the Academy propose to build a magnificent fire-proof building, to hold the collections for which the present large structure is entirely inadequate,—and, further, we are sure that every intelligent Horticulturist, who has the means, will contribute liberally toward the object.

On the 24th of March the Society will have been incorporated fifty years, and what it has so far done has been by the unaided exertions of its members alone. Its library contains 30,000 volumes. The collection of birds exceed 25,000 mounted specimens. Its Herbarium is second, probably, only to that of Dr. Asa Gray's, in the United States; and its other departments are proportionately full.

Although all this is, as it were, the private property of the members, it has been freely at the use of all the world; and thousands annually visit it, and hundreds have been afforded there the means of becoming proficient in various branches of science without fee or charge, but rather encouragement. Students, from all parts of the States, educated in Philadelphia, well know the advantages this Society have afforded them, and through them to all the people of the United States.

\$100,000 are required for the contemplated build-

ing, which it is to be hoped, will be one of which the whole Union may be proud. Many gentlemen of Philadelphia, have already contributed \$1000 each, and we trust our readers will not be backward in helping on the good cause.

Every subscriber of \$1000 or upwards, will receive the thanks of the Society, handsomely engrossed, signed by the officers, and mentioning the amount contributed. He will be entitled to life membership in the Society, free admission to all the lectures, and to receive all the publications of the Society for life. Every subscriber of \$100 or upwards, will have free admission to the Museum of the Academy, and to the lectures, and the right to purchase the publications on the same terms as members. The subscriptions will be so worded, that the subscribers shall not be liable, unless at least one hundred thousand dollars are raised.

We should be very glad to receive the names and amounts, which any of our friends are willing to contribute, to hand to the Building Committee. The money will not be called for before next Spring; but we want the names *now*.

GRAPE GROWING.

Go where we will just now the subject of all subjects is the Vine—the Grape-vine. No branch of American Gardening has progressed so fast as Pomology,—nor any section of Pomology so fast as Grape Growing. We hear much of grape failures, yet the success is marvellous, and far beyond what a few years ago, would have been thought visionary notions.

The first attempts with the foreign grape were disastrous. It became a fixed principle, that foreign grapes were not adapted to our climate, and foreign grapes were universally abandoned. Then came attempts with natives, in Pennsylvania, Maryland, and Ohio; but all these proved failures, with the exception of Mr. Longworth's vineyard, at Cincinnati. We believe the latter was the Noah's Ark, which carried Grape Culture safely over the deluge of disappointment that followed the early attempts of the grape culturists.

To be sure, of late years Cincinnati has lost ground as a successful grape region; but we take it this is but a temporary check, with which nature seems to delight to toy with her most favorite fruit regions, at times, in all seasons, and in all countries of the earth. On the Schuylkill river, in Pennsylvania, where the early attempts at large vineyards of Native grapes were once so successful, and then so entirely abandoned as

complete failures, are now some of the greatest successes of the State; and we know of many similar instances in other parts of our country.

To our mind no reason for failure has ever been entirely satisfactory: some will tell us, they must have a deep and well trenched soil; but then some other ones point to their thin, rocky soils, where their grapes arrive at great perfection. But yet, again, the deep soil man will show how admirably his do, against some neighbor's miserable things on shallow soil.

We find them, sometimes, doing very well in exposed places, at others suffering; and again, with the same contrasts, where they are well sheltered. So with regard to soil: though it is generally assumed they must have a dry bottom, we have recently seen some remarkably fine fruit, and healthy vines, where the roots were almost always, and almost wholly under water, in a swamp.

And so we find the different systems of pruning, long cane or short cane—tall trellis or wide trellis: it seems to make no difference how opposite the theories; all find strenuous advocates, simply on the ground, that they have been successful, while others have not.

We have endeavored to weigh well, all the conflicting evidence, and to deduce some general principles from it, that would serve as a guide in general cases. We can find plenty of exceptions to these rules, but we think on the whole, they are as near correct, as the present state of grape knowledge will warrant:—

A compact soil, loamy or clayey, that bakes in Summer time, is not good for the Grape-vine. The best soils, are those of a shaly or stony nature; what are called by geologists, "drift" formations, are usually preferred by the Grape-vine.

When these favorable soils can be employed, it is not necessary to underdrain or subsoil in order to have healthy vines, or very good fruit; a deep plowing is all that is necessary, to prepare the ground for the vines.

The best manure, is well decayed stable dung, spread several inches thick, say in the average of cases, two or three inches on the newly ploughed ground, and well harrowed in.

The top of a hill is not the best position for a vineyard, nor is a low place in a valley; but either is better than the side of a long hill, which is faced within a half mile or so, by another long hill. The currents of wind along such hill sides, are unfavorable to good Grape-vines. The best position, is the South-east slope of a roundish piece of rising

ground, that has no other rising ground comparatively near it.

Shelter of any kind from cutting winds, is advantageous; but that from evergreens particularly so.

Vines do best on upright poles; and when these are so constructed, that the little tendrils can find something to attach themselves to, they do still better. This is apparently the reason they usually do better when running over trees, than elsewhere; why, no one knows, except that it is a whim of theirs.

"Tis no use to argue, for when they won't, they won't,
And when they will, they will; and there's an end o' it."

Pruning the Grape, is for the purpose of keeping the vine within bounds; for inducing vigorous growth, where it is wanted; for checking vigorous growth where it is not; or for improving the size and quality of the fruit. We are writing in this chapter, only of practices as they influence health.

No one system of pruning is more injurious than another,—nor very injurious any way.

When *branches* are cut away, *some roots die*. A vine constantly pruned severely, does not extend its roots far, and the continually accumulating debris of its own decayed roots, in time *may* be injurious to the health of the plant. Additions of new soil may help it; very severe Summer pruning, which is for the purpose of checking too vigorous a growth, may be overdone, and as it is a well known fact, that Hemlock hedges, severely Summer pruned, are subject to a mildew, which unpruned ones never are; it is fair to infer, that severe Summer pruned vines, might be more liable to grape mildew, than others would be.

PEACH CULTURE.

We have good authority for saying that Peaches which are injured by the Yellows, can be restored to health by a severe cutting back to the main stump, so as to secure a thoroughly new growth of branches,—and that trees so restored, will not be again attacked; but live to a good and honorable old age.

There is a strong opinion existing, that Yellows is caused by injury to the sap vessels, by which the fluid is prevented from flowing properly,—by opening up new channels from the sound wood, this is remedied. Again, it is well known that after a Peach gets over three or four years healthily, its age is indefinite. This severe trimming seems to help it over this critical time.

Perhaps, whether a three year old tree had the Yellows or not, this severe treatment might benefit it, but this is a mere surmise.

Receipts 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.

PEARS AT CANTON, MISS.—*R. H. G.* writes:—"This is a great country for fruit, particularly Pears, Peaches and Grapes. I am dabbling a little in Pears, and am much pleased with the Dwarf Pear. I have Duchesse d'Angouleme, 6 years old from the bud, which bore last year over 100 specimens, many of them weighed over 1 pound each; I had one Julienne, 7 years old, from which I gathered last year 62 dozen fine specimens; one Glout Morceau, 6 years from the bud, from which I gathered 100 beautiful specimens. The Louise Bonne has not done well with me—it bears freely but rots badly. Flemish Beauty, spare bearer but beautiful. Winter Nelis, magnificent, have kept specimens till Christmas. Julienne is my favorite summer variety.

The principal manures I use are ashes and hen manure, which I apply in the winter, although I use every thing which will decompose—rags, feathers, leaves, &c., &c.

HORT. READING ROOM AT FORT WAYNE.—A circular signed by I. D. G. Nelson, Mr. W. Huxford and H. J. Ruddisill, committee of the Agricultural and Horticultural Society, of Indiana, gives the details of a Reading Room established in the Court-house at Fort Wayne, where Horticulturists and Agriculturists, from any part, can always go and get the latest information of interest to them all.

LETTUCE AND RHUBARB.—*A Subscriber, Chicago, Ill.*, says:—"Will you, through the *Gardener's Monthly*, please give me a plan of a cheap house that will do to grow Lettuce and Rhubarb through the winter; one that the sash can be removed and used for frames during March and April, if needed. I have a ridge of 3 or 4 acres, laying North and South, and wish to make the most of it?"

[This query is much like one below, although evidently from another correspondent. The remarks to J. M. will also apply to the Rhubarb one, forces well in a temperature of 55°, but does not need light as Lettuce does.

We should suppose it would be very easy to make a span roofed frame to hold sash, which could be taken apart readily, on which to set the frames,

and when set, let them run up and down the hill. A furnace which could also be constructed temporarily for a few dollars at the one end could have flue-pipe in three feet length, connected with the furnace, and run in an ascending line through the centre of the house. This would give quite heat enough in a house 100 feet long to force Lettuce, Rhubarb, Asparagus and Strawberries. The pipes could be taken down and put away in a half a day, —and in a day's work for two men be put together again when wanted next winter.]

AMERICAN FERNS AND LYCOPODIUMS—*J. B. Gardener, Boston, Mass.*, Inquires for the best work on these. Dr. Gray's Manual of Botany is the best. A species in each genus is illustrated and all the others fully described.

MARYLAND AGRICULTURAL COLLEGE.—Our correspondent, Mr. Daniel Barker, has been engaged as superintendent of the grounds,—which are to be improved and made of first-class character, for the education of students—N. B. Worthington, Esq., formerly of the *American Farmer*, is the principal professor, and the intention is to make it one of the principal institutions of the United States.

GARDENING AND GARDENERS—“*A subscriber*” writes that he has “patronized the *Monthly*” for some time, but owing to our “attack on gardeners” in our article, he means to “stop the paper at the end of the year.” This was an entirely new view to us. We supposed we wrote that paper entirely for the elevation of gardeners. Certainly our intention was to do them good, and we know all the real gardeners in the United States appreciate it. We have before heard that to help a pig up a plank by pushing him, is the surest way to have him back down on you. We did not suppose we had any of this quadrumanous genus amongst our readers. Finding there are a few, and we wish to do good to all, we will pull their tails some day, instead of pushing them along, when they will, no doubt, go on their way rejoicing,—and “patronize” us immensely.

LETTUCE IN WINTER—*J. M., Jefferson, Cook Co., Ills.*, wants the best way to grow Lettuce in winter. This vegetable does not do well in a temperature over 55°—or away more than two feet from the glass—any house or frame that will command these conditions will prove a success on your southern ridge, we should judge common hotbed sash would bring them forward sufficiently for your purpose.

STANDARD PEARS BEARING EARLY.—Our types made Mr. Douglass say his experience was derived from Pears on “any ground” instead of “my ground.” Mr. Douglass was speaking only of his home experience.

A WEEKLY PAPER—*A Correspondent from Cincinnati* says:—“I wish you could get subscribers enough to start a weekly paper some thing like the *Gardener's Chronicle* in England. I think this country would support one.” [We have no doubt of it, and would like to see it tried. Our friend, however, has no idea of the immense capital it would take to insure its success without embarrassment at the start; and the amount of labor and close attention it would take to conduct it. We have no heart ourselves for any such heavy work—though we would like to see others in it.]

FRUIT PRESERVING HOUSE—*Patented by J. R. Beckwith, Cleveland, O.*—We have a circular in our drawer of this department, describing this; but so far as we judge without comparison it is but Nyce's system under a new name.

GARDENING IN UTAH—*A Correspondent from Great Salt Lake City, U. T.*, writes:—“There has been great progress with regard to the raising fruits which seems to most absorb the minds of the settlers. As we had to raise what we needed for our sustenance, Wheat, Oats, Barley, Potatoes are raised to great perfection, though in some localities very light; but on the best soils 60 bushels of wheat is raised per acre. We have as fine a sample of Apples as any part of the States.—Pears do well; that is some kinds. Plums are very prolific. Cherries are scarce. Gooseberries, Currants and Raspberries do very well. The Wild Currant (*Ribes Missouriensis*), is mostly raised at present. We use the Cottonwood and the Box Elder for shade trees, but they are now giving way to the Locust. I am of the opinion that the Maples would do well. Black Walnuts are coming into reputation, there are some trees here that are as much as 25 or 30 feet high.”

COLOR OF VARIETIES—*Mr. J. Stayman* writes:—“I send by mail to-day a package of Scions that will illustrate the truth of the principles which I have advanced better than any article I could write, which I wish you to carefully examine, and if worthy any remarks, would be glad to hear from you through your *Monthly*.

I have put them up in small packages represent-

ing their colors, and they are herein named in the order of their hardiness, both the parcels and the varieties in each, except some seedlings (named) amongst some of the packages which are less hardy and lighter colored than their parents.

1st. 8 Scions—Duchess of Oldenburg, Early Red, Ben. Davis, Wine Sap, Red Astrachan, Red Russet, Lady Apple. Oskalousa.

2d. 3 Scions—Red June, Early Joe, Fleiner.

3d. 4 Scions—Talman's Sweet, Keswick Codlin, W. W. Pearmain, White Pippin, light colored fruit, but dark wood and hardy and healthy.

4th. 1 Scion—Fort Miami, dark wood but much speckled and less hardy.

5th. 2 Scions—Vandevere Pippin and a Seedling from it less hardy and of lighter color. Indiana Favorite.

6th. 4 Scions—Yellow Bellflower, White Bellflower and two Seedlings from the Y. Bellflower, of lighter color and less hardy; Selby Green and Selby Bellflower. I place the W. Bellflower in this list supposing it may be also a seedling of the Y. Bellflower.

7th. 3 Scions—Buckingham, Rawles' Jennetting and a Seedling from Jennetting, of lighter color and less hardy, New Jennetting.

8th. 3 Scions—Jonathan, Fulton and Milam.

9th. 2 " Hover, Herman.

10th. 1 " Hetrick.

11th. 2 " Nickajack, Kittageskee.

By comparing the extremes, the first and last packages named, you will see plainly the difference; and the others in like proportion.

12th. 2 Scions—Cazon Crab, Hughes' Crab, of the same class, but less hardy and lighter colored.

13th. 2 Scions—Showy Crab and Yellow Crab, both of the Siberian class and the latter less hardy.

14th. 2 Scions of Seedling Peaches, one red and the other white and less hardy, and healthy, and lighter color.

15th. 2 Scions of Grapes, Native Hamburg, a black grape and the other Red Fox of lighter color and less hardy, of the same class.

16th. 2 Scions—Black Taylor and Taylor's Bullitt a white grape of exactly the same class and less hardy, of lighter colored wood.

17th. 1 Scion—Osee, the most hardy grape, dark shining black and dark wood.

18th. 1 Scion—Iona, killed all except what was covered; light wood and fruit tender and unhealthy.

All these Scions were under as near the same condition as they could be placed.

[This set of specimens prettily illustrates Mr. Stayman's position. Buckingham, and Rawle's

Jennetting, and the Caston Crab, were not so well marked as being in regular order as the others; but in other respects the illustration was perfect.]

PROFIT OF FIGS—A Correspondent from Baltimore, says:—"I see no reason why Figs might not be grown in every garden in the Middle States.—My employer prizes them much, eating a few every morning before breakfast. We generally send from 12 to 14 bushels to market of our surplus crop, and we have got as high as \$10 per bushel from a huckster. I think it would pay as a market fruit. So far as I know the Fig is exempt from disease and insects in out-door culture.

WINTER BLOOMING FLOWERS—G. S., South Amboy, N. J.—In your January No. I notice your selection of Flowers for winter bouquets. Among the very best for that purpose you will find Double White Primula and Monthly Carnations. Within a year several white Monthly Carnations have been sent out, just as free bloomers as the best of the old colored ones.

[Another very nice thing which was not named is Lantana delicatissima, which has beautiful Lilac shaded white flowers on long stems. The flowers do not drop or wither as early as the varieties of the common species of Lantanas do, and it is of the easiest possible culture, and flowers profusely.]

VIRGINIA FRUIT AND FARMING—Our old friend Oliver Taylor, writes from the Valley:—"I have just been able to raise \$2, which find enclosed, for the ensuing year. I do not wish to miss all the good things of life though money is hard to get here.

We have had a very regular winter here so far, the thermometer only 4° below zero, though I see by the papers in nearly the same latitude near the sea, in Delaware, it was 11° below zero. I think the Peach buds safe here yet. Tell the nurserymen North to grow largely of fruit trees to send South, as they cannot send us more than ought to be planted; but also send us some more Northern men, as we like to see a good many more farmers than we used to have. Carpenters and all sorts of mechanics are much needed here to help build up our burnt barns.

"WHAT TO PLANT—C. B. O., Bucks Co., Pa., says:—"On thy 4th page of the present volume of the Monthly, 'What to Plant, by Charles Reese,' I think you ought to give Mr. Reese's place of residence, because beginners in fruit culture in our section of the country would surely be led astray with the list of Apples he recommends, except the

Baldwin. The Newtown Pippin is a miserable thing here, and as to the Bellflower I would about as soon expect a crop of fruit from Willow trees. I think you should make a note of the above before planting season begins."

[Mr. Reese is writing for the neighborhood of Baltimore, Md., where the kinds of fruit he named do remarkably well. As C. B. O. remarks, that region of Pennsylvania is unfavorable to Newtown Pippin and Bellflower. The latter, however, does pretty well near Philadelphia as well as near Baltimore. The Newtown Pippin, however, is nearly worthless. Baltimore seems to be the new world for the Newtown Pippin—we were presented, last year, with some specimens from there by H. B. Chew, Esq., from his farm, which were equal to the finest we ever saw.]

CROPS IN GENESEO, ILLS.—*J. S., Ills.*, writes:—"This is a country village, not a county-seat.—We go out a few miles and cut great quantities of hay from the uncultivated prairies, but there is improved land, patches about. Grain, mostly corn, comes in every day in the year, often 50,000 bush. of grain in a week. Corn is again being burnt for fuel, it is cheaper than coal for farmers. Corn 25 cents per bushel, delivered."

LEAD LABELS FOR FRUIT TREES—*W. H. W., Reading, Mass.*—"Enclosed I send you a sample of home-made labels, which I have found better than any thing else I have ever used. I generally bend the lead around one of the lower branches, or if these are too large, suspend it by a piece of lead wire. The name is distinct and indelible, and the lead is flexible as to yield readily to the expansion of the limb."

[The names are punched in the lead by iron letters. There are few better—probably on the whole no better plan than this one.]

NEW CHINESE YAM—*Mr. Prince* says:—"I have prided myself on having first introduced the Chinese Yam, or *Dioscorea Batatas*, now called *Dioscorea Japonica*. The great objection to that esculent was its length $2\frac{1}{2}$ to 3 feet. I have obtained from Asia a short oval variety, about 6 to 7 in. long and 4 to 5 inches in diameter, equal or superior in excellence to the former variety. It is, I assure you, the greatest acquisition in the department of vegetable food we have ever obtained, and I look to its future career as completely surpassing our ordinary Potato."

THE LATE PROF. MAPES.—A friend thinks we have not done full justice to this distinguished gentleman—we think it quite likely—and may take occasion to explain the difficulties we lie under in making out our sketches.

When a man departs, who is distinguished in politics or science, a newspaper writer has but to turn to his Encyclopædia to make out a pretty full article,—there are no such advantages to a Horticultural editor, who would honor the memory of the distinguished men of his circle. We could do as was done before our day, simply say such and such a person died duly honored and respected by his friends, with all the "compliments" usual to such literary notices,—but we have thought it due to our co-laborers to say more than this, and to endeavor to give a truthful analysis of their public lives and especially in relation to their Horticultural career. We have no sympathy with the maxim which teaches us "to say nothing but good of the dead,"—but rather what is just. We write not for the dead, but as an example to the living.

With this view we endeavored to get friends of deceased Horticulturists to furnish us with memoirs,—but we found some wanted many months to do it in—others a whole number occupied,—others fulsome adulation of good points, or vindictive expostions of weak ones,—and we soon found that to give any notices at all suited to our notions of the wants of Horticulturists, we had to give our own *impressions*, and trust to subsequent corrections of others for imperfections where necessary. We are satisfied that had we not adopted this course, liable as it must be to occasional errors, scores of our friends, to whose memories we have been enabled to do some justice in our pages, would have passed away without a tribute but what their grave-stones might offer them.

We had this difficulty with Prof. Mapes—we never had the good fortune to meet him; never saw his farm. On several occasions we sought him in New York, without success. What we said of him was a fair judgment on his career as *generally understood* throughout the country. He had warm friends and bitter enemies, as many a good man has. We summed up between the two to the best of our honest belief. We shall be very much indebted to any friend who may supply omissions,—not only in this case, but in any similar sketch it may fall to us to have to give of others who may follow.

FALL CAULIFLOWERS AND EGG-PLANTS—*H.*, *Springfield, Ill.*, says:—"In the Editorial Notes of your February number you say 'every gardener ought to have Fall Cauliflowers as easily as Cabbage.'

I have always failed with Cauliflower plants started in the spring. They suffer greatly from our excessive summer heat, and do not form their flowers before frost; and come to nothing if transplanted with earth in the cellar, as recommended. If you know how to obviate these difficulties you will do a favor to many in this country, who like myself, have not succeeded with the Cauliflower, by giving your views.

In the same article you say, 'that with proper care Egg-plants may be successfully potted.' I find no difficulty with the vegetable in new ground, but after a crop or two, a small dark-colored fly appears on the leaves in vast numbers, and completely destroy every plant. The gardeners here call it the ground flea. It is very brisk in its movements. I have for several years tried many remedies that I heard of, but without any success."

[This seems one of the cases we had reference to, and which early sowing would remedy. We recommended to sow with late Drumhead Cabbage, middle of March. This will do in most cases. If in any climate or soil, even this fail, sow yet earlier. In February with early Cabbage for instance.

With regard to the Egg-plant fly we have heard it stated by good vegetable growers that by sowing Turnips between the Egg-plants, the fly will prefer them to the Egg-plants, and when the Egg-plants are large enough not to be much injured by the fly, to hoe the Turnips out.]

PRICES OF STRAWBERRIES—*J. M. M.*, *New Bedford, Mass.*, says:—"May I call your attention to the fact, that W. R. Prince & Co., advertise in their last fall's Catalogue the Jucunda Strawberry, at 50 cents per dozen? and to ask if they sell the genuine, how it is that J. Knox, of Pittsburg, ask a price for the same strawberry so much more than above?"

[The prices of all goods, we take it, are regulated by what the holders think they will bring. If W. R. Prince & Co. supposed, when about to fix the price at 50 cents per dozen, their stock would disappear "like hot cakes," in two or three days, they would have hesitated about offering it. We suppose they did not appreciate the variety, supposed others did or would not, or had an immense stock, which they would be glad to have "a run on" at a low figure. It is the probable demand, as the holders expect it to be, that regulates prices.]

TILDEN TOMATO—"A friend has called my attention to an article in the *Gardener's Monthly*, for December, under the heading of the 'Tilden Tomato,' by 'Novice.'

As I am a great lover of that excellent and healthful esculent, I have for years past cultivated it with extra care, trying in succession most of the new varieties that have been introduced to the public, through laudatory editorials, and equally commendatory certificates of superior quality, early maturity, and unsurpassed productiveness. But of all, I have found nothing superior to Fejee and the old Smooth Red. Tilden, it seems, is now the new candidate for public favor, backed by similar endorsements to those which have from time to time ushered in its many defunct predecessors, and though it is presented to the public by a new "Novice," under but one year's trial, I must confess that my weakness for novelties has triumphed over my teachings of the past; and this failing, which, as you are aware, is by no means uncommon, says, "try Tilden," while judgment says, "don't touch it." Now, to compromise the matter between these two conflicting monitors, I have concluded before investing to propound a question to "Novice," whose answer will settle the matter for me, and perhaps many other equally doubting gardeners, and fully reconcile our monitorial friends, Weakness and Judgment, and at the same time afford your correspondent an opportunity to clear up a point upon which its only merit over others rest—early maturity.

"Plants," says 'Novice,' "from late sown seed set out ten days after the 'Large Red' variety, may tured their first fruit twenty days in advance of the latter. From this statement we are led to believe that Tilden will mature its fruit thirty days in advance of the Large Red. Ten days later in setting out, and twenty days earlier, makes, as you see, thirty days in favor of Tilden.

Now the question is, *were all things equal*, the seed sown at the same time, in the same or adjoining beds, both under glass or in open culture, similar soil, treated in the same way, and equally forward when set out, and afterwards manured and treated in the same way, in the same soil, and cultivated in equally favorable exposures? An answer in the affirmative will settle the question greatly in favor of the 'Tilden,' as to early maturity. As to productiveness, if it is equal to Fejee or old Red, it will answer my purpose.

[We handed our correspondent's note to "Novice," and append his reply:

"The seed of the 'Tilden Tomato' was sown in

the same bed as the Large Smooth Red and Fejee, though a day or two later, and were planted in the open ground May 9th. Their culture, manuring, distance of planting, soil, and exposure were alike; and all were planted in the open field, and received only field-culture. The Tilden first ripened July 10th, and continued in bearing all through October. The Large Smooth Red was first gathered July 31st, and the last of the Fejees on the 22d of September.

The Large Smooth Red is oftener wrinkled than smooth, and the Fejee in wet weather cracks, and decays rapidly."

Books, Catalogues, &c.

NURSERY CATALOGUES.—As usual, at this season, our table is covered with the Catalogues of nurserymen. Among the wholesale list we find: *R. Buist, Jr.*, Philadelphia, Garden Seeds. *D. D. Buchanan*, Elizabeth, N. J., Fruit Trees, &c. *J. N. Darlington & Co.*, West Chester, Pa., Fruits, &c. *Frost & Co.*, Rochester, N. Y., Fruits, Ornamental Roses, &c. *Hoopes, Bro. & Thomas*, West Chester, Sheet List of Fruits, &c. *R. Buist, Sr.*, Philadelphia, Greenhouse Plants. *W. S. Little*, (*H. E. Hooker & Co.*) Rochester, N. Y., Fruits and Trees. *A. Douglass*, Waukegan, Ill., Seed List. *J. M. Thorburn & Co.*, N. Y., Seed List. *Mahlon Moon*, Morrisville, Pa.

DESCRIPTIVE LIST.—These are unusually full, showing great activity in the retail trade. We have: *J. Vick*, Rochester, N. Y., Seed Catalogue. The most beautiful one we have. *Hoopes Bro. & Thomas*, West Chester, Pa., Ornamental Trees, 33 pages, the largest published on trees alone. *H. A. Dreer*, Philadelphia, Garden Calendar, 76 pages. *Ryan & Dempsey*, Rochester, N. Y., a large full list of Fruit and Ornamental, 30 pages. *Hoopes Bro. & Thomas*, W. Chester, Fruit Department, 30 pp. *B. K. Bliss*, Springfield, Mass., 112 pages, beautifully illustrated, rather a book than a catalogue, and well worth the 25 cents asked for it, the plates alone being worth the money. *R. G. Hanford*, Columbus, O., Trees, Flowers and Fruits, 52 pages. *F. Troubridge*, Milford, Conn. *J. W. Bailey & Co.*, Plattsburg, N. Y., Grape Vines. *M. W. Johnston*, South Bend, Ind. *Prince & Co.*, Flushing, N. Y., Grape Vines. *H. Michel*, St. Louis, Mo., Dahlias. *Hargis & Sommer*, Quincy, Ill. *Henderson & Fleming*, N. Y., Flower and Vegetable Seeds. *Prince & Co.*, Paeonies. *R. Buist, Sr.* Philadelphia, New or Rare Plants,

G. Marc, Astoria, L. I., Roses. *D. D. Buchanan*, Elizabeth, N. J., Trees and Fruits. *A. Bridgeman*, N. Y., Vegetables. *B. Dowling*, Philadelphia, Flower Seeds. *Peter Henderson*, Bergen, N. J., New Plants. *F. G. Yeomans*, Walworth, N. Y., Fruits. *Jabez Capps & Son*, Mt. Pulaski, Ill. *J. W. Mattison*, Jacksonville, N. Y. *H. A. Terry*, Crescent City, Iowa, Flower Seeds. *G. W. Thurlow*, Newburyport, Mass. *J. W. Adams*, Portland, Maine, Evergreens. *Francis Brill*, Newark, N. J. *A. W. Corson*, Plymouth Meeting, Pa., Small Stock. *Elhwanger & Barry*, Rochester, N. Y. Fruits, 60 pages. *T. C. Anderson*, Moorestown, N. J., Strawberries. *John Saul*, Washington, D. C., General Stock. *J. C. Smith*, Des Moines, Iowa. *Barnes & Kelley*, Coal Creek, Iowa, 16 pages. *Dr. W. A. Royce*, Newburg, N. Y., Grapes. *E. A. Barnum*, Rahway, N. J. *T. D. Ramsdell & Co.*, Adrian, Mich. *J. Perkins*, Moorestown, N. J. *F. K. Phoenix*, Bloomington, Ill. *Topage, Walker & Co.*, Roxbury, Mass., 25 pages.

TRANSACTIONS of the Worcester County Massachusetts Horticultural Society, from 1857 to 1864, in one volume, from Ed. W. Lincoln, Secretary.

SOUTHERN JOURNALS.—Amongst our this year's book-table, are some Southern Journals:

The *Southern Cultivator*, W. N. White and D. Redmond, published at Athens, Georgia, was well known to our readers before the rebellion, and alone of the agricultural press survived the general wreck.

It was particularly distinguished before the war in preparing the way for the new order of things, which it did with an energy and spirit which was at least intelligent and able; and we cannot but feel a regret, in view of the efforts making to produce a thorough reconciliation and fusion of sections, that much of what we cannot but think this mistaken course still inspires it. In a recent number we find an article published without comment, in which the writer tells us that henceforth "the cultivation of cotton, rice and sugar, on the best land of the Southern States, can be set down as dead institutions." "White men cannot work, and black men will not." Schemes are spoken of for "confounding the everlasting Yankee, and for causing the mills of Lowell to be the habitation of bats and owls."

Disregarding these unfortunate blemishes, the *Cultivator* is an admirably conducted paper—well worthy of the support of even the "everlasting Yankee," the "bats and owls of Lowell," or "any other man."

New and Rare Plants.

IMPROVEMENT IN THE CHINESE ASTERS.—The Aster has been introduced within the memory of the writer. It was a large coarse flower, with a yellowish centre, and a single row of flabby, dirty rose petals around the base of the clumsy central disk. The plant was about a foot or so in height, and bore but a few flowers on the rough single stem.

The French and German cultivators took it in hand, and there are now as many races of them as

there are of dogs,—and many of them as far beyond the original rough introduction as the beautiful greyhound is to the original wild foxy type.

On a glance at the collection of Mr. Henry A. Dreer, Seedsman, of Philadelphia, we observe that the Aster fanciers have enumerated at least *forty distinct* strains, with as many odd names as if they were so many fancy chickens.

We have taken for illustrations some of the most distinct classes, which will give a pretty good idea of the various forms into which the original Aster has run.



Fig. 1.—1-10th the Natural Size.



Fig. 2.—1-2 the Natural Size.

Figs. 1 and 2 is the class called "Rose Aster," and is one of the most showy of all the classes, as it should be, as by its name it would aspire to a comparison with the rose. It reaches usually about 2 feet high, and grows pyramidal in shape.



Fig. 3.—1-10th the Natural Size.



Fig. 4.—1-2 the Natural Size.

Figs. 3 and 4 represents the "Hedge Hog" Aster, in which the petals are turned in like the quills of a porcupine. It grows about eighteen inches high, and the plant is of a dense globular form.

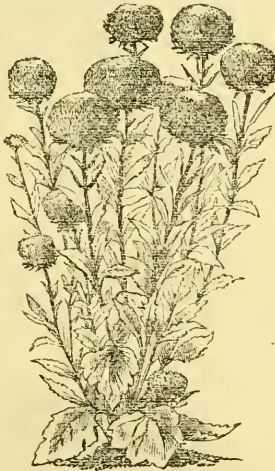


Fig. 5.—1-10th the Natural Size.



Fig. 6.—1-2 the Natural Size.

Figs. 5 and 6. "Pæony Perfection Asters," does not seem to be a class with any striking habit of growth, but the flowers are the most perfect in form of all the Asters; being as perfect as Eclipse is among Chrysanthemums, which these flowers somewhat resemble in form.



Fig. 7.—1-10th the Natural Size.



Fig. 8.—1-2 the Natural Size.

Figs. 7 and 8 "The Pompone Asters" are small, taking the place of Pompones in the Chrysanthemum class. The flowers are partly anemone-flowered, and partly broad petaled, so that besides their small size they have a special feature of their own.



Fig. 9.—1-10th the Natural Size.



Fig. 10.—1-2 the Natural Size.

Figs. 9 and 10, "Reid's Improved," is another rather straggling grower, but a very distinct class from all the rest. It is what is known as Anemone-flowered, having few or no ray florets, but a compact mass of beautiful minute florets in the globular disc.



Fig. 11.—1-10th the Natural Size.



Fig. 12.—1-2 the Natural Size.

Figs. 11 and 12, "The Imbriqué Aster" is peculiar from its recurved petals which are also prettily imbricated.



Fig. 13.—1-10th the Natural Size.



Fig. 14.—1-2 the Natural Size.

Figs. 13 and 14, "Robust Dwarf Aster," this will be the most popular for pot culture. The foliage is so remarkably healthy, the flowers large and full, and the plants profuse bloomers.

Mr. Dreer informs us that in almost all the classes, nearly all the colors and shades from deep carmine and crimson to purple and white, are now to be had of all the different classes.

The most remarkable thing about these classes of Asters is the complete "quietus" it gives to the old Linnæan definition of what is a species—that which from "like seed produces like." We know these to be varieties, and yet the different classes when once produced reproduce themselves with as much regularity as if they were real species. So to its great beauty which, as Queen Margaret," has made the Aster popular and welcome every where, a scientific interest is also added.

Foreign Intelligence.

LATIN MADE CHEERFUL.—Though every garden boy is sensible of the benefits derived from a knowledge of the Latin language, they often shrink from the task because they see no "fun in it." We extract for them the following from a London paper, and give the translation for the benefit of those who wish to find out the "color of a white Blackberry when it is green." We may add for the benefit of the boys learned in family history, that the original name of the Elderberry was Samuel Bucus, or, as we used to call him at school for short, Sambucus. But this they will see in the Latin text:

Morum te nigram juraveris: morum vero albam fecisti. Solvi. vixdum rubum cæsium, vaccinium tuum myrtillum: teste virgine berberin circumvoli-

tante, et bacca sambuci patre tuo. Dederas et cheirographum: sed atramentum oxycoccus palustris. Equidem non pendo unius fragarii ribes taxi baccæ simile: permittem tamen omnibus chiococcum, te rubum Idæum prosus exstitisse: vaccinium autem, senior, dic, which is translated:

You may swear yourself black, Berry; but you have made a mull, Berry. I paid your bill, Berry, as soon as due, Berry; as the young woman in the bar, Berry, and your father, the elder Berry, know. I don't care a straw, Berry, for a goose, Berry, like you, Berry; but I'll let folks know, Berry, that you've made yourself a regular ass, Berry: and whort'll Berry senior say?

PLANTS FOR CONSERVATORY PILLARS.—Twelve of the best plants and climbers for the pillars of a conservatory are, *Jasminum gracile variegatum*, *Lapageria rosea*, *Plumbago capensis*, *Rhyncospermum jasminoides*, *Cestrum aurantiacum*, *Luculia gratissima*, *Habrothamnus Aubletii*, *H. elegans*, *Sollya linearis*, *Tacsonia Van Volxemi*, *Tecoma jasminoides*, *Bignonia grandiflora*, and none of these are more graceful than *Mimosa prostrata*.—*Cottage Gardener*.

WEST INDIA FIBRES are produced by the following:—

Abelmoschus esculentus, Okro (cultivated.)

" *moschatus*, Musk Okro.

Adansonia digitata, Baobab Tree.

Ananassa sativa, Pine-apple.

Anona palustris, Cork-wood or Alligator Apple.

" *muricata*, Sour Sop.

Agava Keratto, American Aloe.
 " "sissilana."
 Arum macrorhizon.
 Artabotrys odoratissima.
 Bambuso gigantea, Bamboo.
 Boehmeria nivea, Rhea fibre of India.
 " cordata.
 Bixa Orellana, Arnotto.
 Bromelia Pinguin, Pinguin.
 " Karatas.
 Calathea zebrina, Zebra Plant
 Carludovica palmata.
 Caryota urens, Kittool fibre, a Palm.
 Cariolinea insignis.
 Coeus nucifera, Coconut Palm.
 Cordia macrophylla.
 Cureuma longa, Turmeric.
 Cochlospermum hibiscifolium.
 Daphne tinifolia, Burn-nese Bark.
 Eriodendron anfractuosum, Silk Cotton Tree.
 Gossypium hirsutum, Cotton Shrub.
 Gauzuma ulmifolia, Bastard Cedar.
 Helicteris jamaicensis, Screw Tree.
 Heliconia braziliensis, Wild Plantain of Brazil.
 " Bihai, Wild Plantain of Jamaica.
 Hibiscus rosa sinensis, Shoe-black.
 " Lampas.
 " Sabdariffa, Indian Sorrell.
 Ismene calathina, a gigantic Lily.
 Kleinhofia hospita.
 Kydia calycina.
 Lagetta lintearia, Lace Bark.
 Malachra capitata, Wild Okra.
 Malvaviscus arboreus, Wild Mahoe.
 Momordica Luffa, Vine Strainer.
 Musa sapientum, Banana,
 " paradisiaca, Plantain.
 " Cavendishii, Chinese Plantain.
 " violacea.
 " textilis, Manilla Hemp.
 " Ensete.
 Ochroma Lagopus, Down Tree.
 Pandanus spiralis, Screw Pine.
 " moschatus, Screw Pine.
 " variegatus javanica.
 Pothos violacea, Wild Cocoa.
 Paritium elatum, Mahoe or Cuba Bast.
 " tiliaceum, Sea-side Mahoe.
 " latifolia.
 Ricinus communis, Castor Oil Plant.
 Sansevieria, zeylanica, Bow-string Hemp.
 " guineensis.
 " angolensis.
 Sida jamaicensis, Broom-Weed.

Sida mollis.
 " dumosa.
 " hirsuta.
 Triumphetta semitriloba, Burweed.
 Theobroma Cacao, Chocolate.
 Tillandsia serrata, Wild Pine, Epiphytal.
 Urena sinuosa.
 " Typhalæa.
 Varronio curassavica, Black Sage.
 Yucca aloifolia, Dagger Plant.
 " gloriosa.
 " filamentosa, &c.

ARUNDO CONSPICUA.—Seeing this plant noticed last year as being a rival to Pampas Grass, I obtained a plant early in the spring; it has grown pretty freely, but has not shown any symptoms of flowering, although the Pampas Grass near to it has done so profusely. Will some reader be good enough to inform me what sort of a bloom it has, and whether the plant requires a wet situation or not? Mine is planted on good ground, rather dry than otherwise. Perhaps it is not old enough yet to bloom, yet it is a full yard in diameter. If it in a smaller degree resembles the Pampas Grass it will be a great acquisition, but if it blooms sparingly, and requires special treatment, not easy to be given everywhere, it will not become popular.—*J. W. C.* [It is a native of New Zealand in moist places, grows 8 feet high, and has large white panicles of flowers from 1 to 2 feet long, with drooping branches.—*Gardener's Chronicle.*]

EUGENIA UGNI.—This is grown at Lower Knowle, Kingsbridge, in the open air, and is trained against a south wall, where it receives no protection. It is in fact quite hardy in Devonshire. In summer it is studded all over with beautiful fruit, of the size of a large Black Currant. It is my impression that the Eugenia will become an important plant, and that it will be much valued and cultivated for its fruit alone. We have this season preserved four jars of the latter, and it is said by all who have tasted it, that it is the richest and best preserve ever eaten—it has a delightful aromatic flavor, which partakes something of that of a Pine-apple. Even when gathering the fruit a rich odor is left on the fingers. So freely does the plant bear, that I have even seen bushes of it only 1 foot in height, with fruit on them.—*Gardener's Chronicle.*

Horticultural Notices.

NATIONAL POMOLOGICAL SOCIETY.

The President, Hon. M. P. Wilder, has fixed on September 4th, as the day of meeting for the National Society, at St. Louis.

Everything denotes the probability of this being one of the most interesting meetings ever held by the association.

Mr. Wilder's health has improved much the past year, and we hope it will enable him to pre-
side personally.

PENN'A. HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, FEB. 6TH, 1865.

President D. R. King in the Chair.

Thomas Meehan presented an Essay on

"DISEASES OF THE PEAR."

(For Essay see page 77.)

Mr. Schaffer remarked that his Pear trees had not been much affected by sap or fire-blight, but during the past season were badly injured by Leaf blight, thinks it is possible it might have been caused by cultivating the ground in root crops, after it had been left in the grass for several years. But on the other hand he had trees of the same age in a healthy condition and of more vigorous growth in his cultivated vegetable garden, not affected with leaf-blight, and bearing as well as any he had in uncultivated ground or sod. In regard to Fire-blight he instanced the orchard of A. Barker, of Chelton Hill, who had lost many trees by blight, but for several years past his trees had been healthy and productive. Mr. Barker attributed the improved condition of his trees, in a great measure, to the use of rusty iron, which he hung upon the trees, as suggested to him by Mr. Baxter, of this city, who had adopted it, and whose success in cultivating Pears was well known to this Society. Mr. Schaffer suggested that the advantage derived from the use of rusty iron might be the production of oxide of iron, which was said to be beneficial to the Pear tree. His (Mr. Schaffer's) summer, autumn and winter Pears were equally affected the past season with leaf-blight, many had cast their leaves early, and the fruit was nearly worthless. Has frequently had trees on Pear stocks injured by borers similar to the Apple tree borer.

W. Parry had no experience in cultivating trees in grass sod.

T. Meehan referred to A. Barker's orchard, said they were all standards, and had been planted, he

thought, about 13 years. The orchard was cultivated for some years, during which time it was seriously affected with Fire-blight, and apparently failing, when changing the mode of treatment by leaving the orchard in grass sod, it had continually improved to the present time, and was now a successful orchard, bearing abundantly, as he understood. T. Meehan thought the grass should be frequently cut, which would prevent it from extending its roots so deep as to conflict with the Pear tree roots, whilst at the same time the sod would become compact and keep the surface soil cool, which was of much importance in Pear tree culture. Dwarf Pears on Quince stocks are not as much subjected to diseases if cultivated, as standards, and he would prefer having them cultivated.

Mr. Cruicknell was of the opinion that Pears on Quince stock would never prove successful,—on Pear stocks and transplanted one year after grafting they could be perfectly trained and dwarfed. During the past season the leaves of those under his charge on Quince stocks fell in August, whilst those on Pear stocks remained perfect till October and November. Had no trees planted in sod, believed the injury done by cultivating in orchards was the cutting of the roots; was also opposed to Quince stocks from their making the tree so short-lived, not lasting longer than 12 years, though he knew an orchard older, but believed the trees had all rooted from the Pear stock above the graft.

W. Brinckloe spoke of an orchard in Bucks Co., part of which had been cultivated in root crops annually, and part left in grass for several years; the latter had grown and produced finely, whilst the former were failing.

T. Meehan had rarely known roots to be produced from Pear stocks above the Quince, believed it was more an exception than a general rule.—Thought in nearly all instances where attempt had been made to dwarf the standards by severe pruning it had proved unsuccessful. He said that Mr. Saunders, when in Germantown, had tried it, but, with all his well known skill, did not succeed. Also remarked that the object of planting dwarfs was to obtain fruit earlier than could be had on standards. It was never expected the trees would continue to live to a great age.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

The Spring meeting was held at Harrisburg, on the 17th day of January, partly in the Court House, and partly in the Hall of the House of Representatives, where a session was held, by the

invitation of the members of the Legislature, one of whom, Hon. Edwin Satterthwait, is an active member of the Fruit Growers' Society.

The first part of the session was taken up, in the discussion of the Curculio, in the Plum question. Mr. Hildrup had success by covering the surface of the ground around the tree, with coarse wool. Mr. David Mumma had good crops, where ashes were put thick under the trees. Mr. Shaffer had seen them bear good crops in chicken yards. Mr. Ellis had seen good crops, where the fruit was dusted with air-slacked lime. Dr. Kellar had seen good crops, where the fruit hung over water. So far on the favorable side. On the reverse, Mr. S. Miller had abandoned hope, and Hon. E. Satterthwait considered Plums might be raised in districts where the Curculio was not abundant; but where much wild fruit abounded, and gave encouragement to the enormous breeding of the Curculio, he feared all these plans would fail to produce good crops.

The election then took place for members for the ensuing year, which resulted in Dr. Gross, of Harrisburg, for President; H. Shellenberger, Harrisburg, Secretary; C. Dingee, Westgrove, Cor. Secretary; Treasurer, Robt. Otto, West Chester; Vice Presidents, A. W. Harrison, Philadelphia, S. W. Noble, Jenkintown, A. Bombaugh, Harrisburg.

Discussing the best Grapes for table use, Hon. G. Seiler, member for Dauphin county in the House of Representatives, gave his experience in favor of Diana. It improved in quality with the age of the vine, and was less subject to disease, than the Delaware, Catawba and Isabella, under the same treatment.

Mr. Knox, of Pittsburg, valued Diana for its keeping qualities, but it bore less, and was not so free from disease as some others; with which view Mr. Merceron of Catawissa coincided, with the remark, that it did best when close pruned. Dr. Kellar of Elizabethtown, Pa., had seven years experience with Diana, on rich sandy soil; it bore well for two or three years, but poorly since. Mr. Fehr, the large wine grower, of Reading, found Diana very liable to disease. Mr. Miller, of Lebanon, had similar experience with Mr. Fehr; and with Mr. Mumma of Dauphin, the Diana fruit cracked.

Of the Delaware, Dr. Seiler spoke well; but Mr. Knox spoke of it with some reserve. Mr. Fehr spoke of it as an entire failure. Dr. Kellar had good success at first; but the last few years could not perfect them. Mr. Mumma thought the un-

favorable reports of the Delaware, were mostly confined to last year, when most grapes did badly. Mr. Mish suggested, whether propagating from immature wood, might not enfeeble vines in their after growth. Mr. W. Saunders referring to Mr. Mumma's remark, believed the Delaware always had a great tendency to mildew. Last season, however, was a bad one—saw even Concord mildewing badly in Indiana. The mildew was not so bad under covered trellises. Several gentlemen expressed their belief, that the Delaware's bad character during the past year, was but temporary, and would be fully made up hereafter.

On the Iona, Mr. S. Miller fruited it last year, quality of the fruit, best; but the vine mildewed badly. Mr. Knox found it mildewed very badly, but the fruit equal to a first class Catawba; sincerely hoped it would prove more reliable than he feared it would, for its quality was excellent. Mr. Parry had not fruited it, but it made a very healthy growth on his soil—better than Delaware, Rebecca, or Diana alongside of them. Mr. Knox said that in the extremely favorable region of Lake Erie, Mr. Griffith has had excellent success with the Iona, as he has with the Delaware and Catawba. Mr. Hoopes said they mildewed with him, last year, at West Chester; but so did 100 other varieties, all, except Hartford Prolific and Northern Muscadine.

Of the Concord, many members spoke, all that it retained its character as the most popular grape known; Rev. Mr. Colder only objecting, that its skin might be thicker, to make it a first class variety for transporting long distances. On the Creveling being called for, Mr. Merceron was asked for his experience, but, he said he would rather others whom he saw present, and who saw his vines last year, would speak of it for him. The bunches he said were long and loose; but were rendered compact by planting a Concord alongside of the Creveling vine.

Mr. Harrison testified to the beauty and health of Mr. Merceron's Creveling last year. It was a better grape than Isabella, but not quite as early as Hartford Prolific; the berries were improved in size, and the bunch in compactness, by planting Concord with the Creveling vines. Mr. Knox spoke very highly of Creveling, as to its general health, earliness, productiveness, and capacity for wine. It was unfortunate, he thought, that it originated so many years ago—were it now only a new grape, while the tempest of fashion for novelties, not half so good was raging, it would make a large fortune for its raiser. He praised Hartford Prolific, for its freedom from thrip and mildew.

The Yeddo, Mr. W. Saunders very highly praised for its encouragement of mildew, where superb specimens of mildew were desired by the curious in such matters. Mr. Harrison, Rev. Mr. Colder, Mr. Fehr, Mr. Merceron, all preferred Clinton to any other, as a Wine grape. Mr. Harrison valued it as a table grape, Mr. Fehr said it took $1\frac{1}{2}$ pounds less of the fruit, to make a gallon of wine, than the Isabella or Catawba did. Mr. Miller thought the Concord a good parent grape; had raised several good seedlings from it. The Franklin was thought well of as a Wine grape, by Mr. Miller and Dr. Kellar.

The old Elsinboro, Mr. Hoopes and Mr. Knox praised, for general reliability, and good quality for table and for wine; and Mr. Saunders remarked, that vines from the family of the *Vitis Cordifolia*, were best adapted to our climate.

Some one inquired, if any members had experience in growing grape vines in sod. Mr. Harrison said, he had had strong growing kinds in that way, which did very well, but the grass must not be left to grow long; and the mowings may be left to rot where it falls. Mr. Knox thought it a very important question, and had not been able to decide it. Certainly, where he had Strawberries and grapes together, and the soil little disturbed in the culture of the Strawberries, the Grapes did best. He had come to think Strawberries and Grapes in this way, were made to grow together; he opposed deep trenching for Grapes, encouraged surface roots. Mr. Satterthwait advocated rich culture, and soil stirring; might as well try to grow corn in sod, as grapes. Stirring the soil might injure the roots in a small degree, but those which were left, were benefited to so great an extent, as to throw the balance of advantages largely in its favor.

Mr. Saunders thought there was much truth, and much error on both sides of this question. Mr. Satterthwait's views were correct, where luxuriant growth was desired, but when fruit was wished for, vigorous growth must be checked.

It was sought to be ascertained, whether the views of the Society, as to the best Grapes for general cultivation, had undergone any change since last year. A vote was taken, with the understanding, that only those who had actual experience, should take part in the vote. The following was the result:—

Concord, 25,
Creveling, 19,
Hartford Prolific 16,
Elsinboro, 9,
Clinton, 9.

For Wine.
Clinton 15,
Franklin 6.

These were named as the hardiest, easiest of cultivation, strong growers, subject to few casualties, and affording most profit with least labor.

STRAWBERRIES.

Mr. Knox was asked for information of his No. 700, H. He said it was the most valuable variety he had. He had endeavored for several years to trace its name. Most well informed pomologists had settled on it, as being Jucunda, which he believed it was. Mr. Saunders considered it a very fine fruit, very productive, high color, holding its fruit well up; but not of first class flavor. Mr. Parry had not found it to make a good growth on his sandy soil; Samuel Miller found it this season equal to any 25 varieties he grew. Mr. Evans, of York, has fruited Jucunda, which agrees with what has been said of Mr. Knox's 700, except it is not as firm with him, as 700 is represented to be. Of the Agriculturist, Mr. Parry gave a very favorable opinion, as it does on his sandy soil. Mr. S. Miller considered to promise well on his heavy soil, so far as succession of fruit was concerned. Plants were two months in fruit. Russell's Prolific, P. Mr. Miller found a fine variety, Mr. Knox also; different from McAvoy's Superior. Mr. Parry termed it one of the best pistillate varieties.

With regard to the distinction between these varieties, a motion was made and adopted, by the meeting, that Russell was a distinct Strawberry, but that Buffalo and McAvoy's Superior, were identical. *Lady Finger*, Mr. Parry said was raised by Benjamin Prosser, Burlington, New Jersey, a good and profitable market fruit in some soils. *Green Prolific*, P., the parent of the Agriculturist, did well on Parry's sandy soil. *Fillmore* did not do at all with him. On Knox's clay soil it was one of his best. Hoopes on his clay soil, would not like to do without Fillmore. *French's Seedling*, H., originated near Cinnaminson, N. J. Parry said, in their sandy soil, was ripe 17th of May, and their best early berry. Mr. Knox had not found it worth much at Pittsburg. *Golden Seeded*, Knox, Hoopes, and Harrison, praised it simply for its earliness. *Abington Blush*, S. Noble said was distinct from Lennig's White, and of superior flavor. Mr. Parry spoke of *New Jersey Scarlet*, a seedling of Benjamin Prosser, as the most promising of any new early ones he knew, as large and fine as Hovey, and ripe by 17th of May. Of the Tribune Strawberries, the *Brooklyn Scarlet* was considered best.

ON RASPBERRIES.

The discussions were spirited and interesting, turning chiefly on whether it would pay, as Mr.

Knox contended it would, to protect the best varieties, as Hornet, Brinckle's Orange, &c., or whether it would not, as Mr. Parry upheld; but that hardy ones, though inferior somewhat in flavor and size, should be the fruit. The Philadelphia was unanimously considered the "Concord" amongst Raspberries; "Iona," "Delaware," and "Rebecca" men being typified by *Hornet*, *Orange*, *Souchetti*, and so on.

On Blackberries, there was not much discussion, Mr. Parry thought 100 bushel to the acre, an average yield. Thought Kittatinny and Wilson's Early, would prove superior to Lawton and Dorchester. Knox's experience was that with the same care that has been given to Strawberries and Raspberries, they might make a better return.

Of Currants, many spoke as as a profitable crop, except Hoopes, who had not found it so. Merceron could make 1600 gallons of Wine to the acre, always worth \$2 50 per gallon; 1 gallon of juice required 2½ pounds sugar, and 2 gallons of water. Harrison remarked, good Currant Jelly always sold well. The *Gardener's Monthly* receipt, made the best Jelly of any he had ever heard of. The Cherry, Versailles, and White Grape, were named as the best.

On the *Apple Question*, a very interesting discussion took place. Samuel Miller's had not done so very well the past year, but the *Krauser* for baking and the *Keim* for table, proved the most reliable. The *Fulloater* or *Tulphocken* was F. F. Merceron's favorite; Mr. Hoopes objecting to it, that its large size and short stem permits it to fall from the tree too much before maturing. J. E. Mitchell exhibited specimens of an apple, the tree bearing which was said to be the produce of a bud of Talman's Sweet, and Rhode Island Greening, cut each longitudinally through the eye, in halves; and the two halves of each set together forming one bud. The fruit resembled Rhode Island Greening, but had a slight trace of sweetness in it. It was from the farm of Lorin Blodgett, Esq., in Warren county, Pa. S. Noble named the *Princely* as growing rapidly in favor, in his section of Montgomery county. In E. Satterthwait's region, the apple crop was of little account,—through fruit dropping young. He approved of high cultivation and manuring

Rev. J. Colder gave an interesting account of a friend's orchard, in Lebanon county. The Apple crop this year was poorer than usual in most places; but this orchard had a very fine crop of splendid fruit. The owner trimmed out his branches where required; in Summer, kept it regularly in

soil, which he manured on the surface every winter, and cut the grass early, leaving it to decay where it fell. A vote was taken on the best apples, resulting in, for Summer 3: Red Astrachan, Primate, Sweet Bough; 4 Fall: Maiden's Blush, Porter, Fall Pippin, Rhode Island Greening; 6 Winter: Baldwin, Smith's Cider, Fallowater, Hubbardson Nonsuch, Long Island Russet, Talman's Sweet.

Pears: A vote on the best resulted in 3 Summer: Julienne, Doyenne d'Ete, Manning's Elizabeth; 8 for Fall: Seekel, Bartlett, Beurre d'Anjou, Beurre Diel, Buffam, Sheldon, Beurre Bose, Howell; 3 Winter: Lawrence, Winter Nelis, Columbia.

In a discussion of the merits of other varieties, S. Noble found Rostiezer do with him well, E. Satterthwait spoke both against it and Sheldon; he thought Howell more profitable than Bartlett; Both Doyenne d'Ete, and Beurre Giffard cracked with him; Tyson he praised, though not so productive as others; the Dwarf Pear generally did well with him, though he believed most of them sent out Pear roots after a few years. W. Parry thought no Pear would in a series of years, excel Bartlett in point of profit; Bloodgood was the best early Pear for profit, though no early Pear he thought very profitable; Beurre Giffard had done badly last year. Mr. Hoopes spoke well of Doyenne d'Ete, Howell, Sheldon, Buffam, Beurre d'Anjou, and Julienne; he liked the Ott, particularly, as it held its leaves late.

Henry Engle has about 2000, about five years planted, so far the experiment was very encouraging. The Pear slug E. Satterthwait had cured by using fine air-slacked lime.

Peaches: W. Parry had formerly grown 70 varieties, of these he would now select Hale's Early, Troth's Early, Early York, Crawford's Early, Crawford's Late, Old Mixon, Ward's Late Free, Smock's Late, Stump the World, and Late Heath Cling. His most approved way of cultivating, is to prepare the ground thoroughly, grow garden crops between the trees, then do nothing but keep the coarse weed cut down. The Yellows had nearly disappeared from his section.

On motion, the list of W. Parry was adopted by the Society for recommendation. The thanks of the Society were presented to the citizens of Harrisburg, for their kindness and hospitality; to the Legislature of Pennsylvania, for their courtesy; and to L. Blodgett for his collection of Apples, and on the motion of Mr. Shellenberger, that

Whereas, much delay in proceeding to business is occasioned by a want of preparation of subjects in advance, it is *Resolved*, that Messrs. William Saunders, A. W. Harrison, J. E. Mitchell, and Thomas Meehan constitute a committee to prepare business for the next meeting, and that they be requested, to add to their report, any suggestions that may facilitate the proceedings.

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THOMAS MEEHAN, EDITOR.
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Hints for April.



FLOWER-GARDEN AND PLEASURE-GROUND.

Prepare ground for planting. Soil loosened two feet deep dries out less in summer than soil one foot deep. Rich soil grows a tree larger in one year than a poor soil will in three. Under-drained soil is cooler in summer than soil not under-drained. The feeding roots of trees come near the surface; therefore plant no deeper than necessary to keep the tree in the soil. If there be danger of its blowing over, stake it, but don't plant deep. One stake set at an angle is as good as two set perpendicular. Straw or mat set round the tree keeps the bark from rubbing. Large stones placed around a transplanted tree are often better than a stake. They keep the soil moist, admit the air, and encourage surface roots. Shorten the shoots at transplanting. This induces growth, and growth produces roots; and with new roots your tree is safe for another season. Unpruned trees produce leaves, but little growth, and less new roots.

Place broad-leaved evergreens where they will get no sun in winter, yet away from where the roots of trees will make the ground dry in summer. Deep soil, but shallow planting, is all important for them. In transplanting, take care of the roots. Good roots are of more importance than good "balls." Balls of earth are useful in keeping fibres moist; but don't sacrifice the best fibres five or six feet from the tree for the few fibres in the ball at the base. When roots are rather dry, after filling a portion of soil, pour in water freely. After all has

settled away, fill in lightly the balance of the soil, and let it rest for a few days. This is as a remedy, not as a rule; for watering this way cools the soil, ultimately hardens it, and in other respects works to the injury of the transplanted tree.

Unless inside of a round ring, or circular walk, don't plant trees or shrubs in clumps. They are abominations in the eyes of persons of taste. Meaningless irregularities form the opposite extreme. Remember, "art is nature better understood."

In your flower-beds, if the plants sickened last year, change the soil. Renovated earth is renewed health to consumptive flowers. Sow Annuals as soon as the ground is warm. Too early sowing and deep covering rots seeds very often. This is frequently the cause of one's seeds being "bad." Prepare flowers in their winter quarters for the summer campaign, by gradually inuring them to the air before setting out finally. Set out when all danger of frost is over. Don't set out a plant with a dry ball; but water well while in the pot an hour or so before.

Arranging flower beds affords room for a display of taste. Narrow, thin beds as a rule, have better effects than thick or heavy ones. Edgings to beds are common. The evergreen Ivy is good—so is Periwinkle. The variegated, large-leaved Periwinkle is a treasure. Daphne encorum is also good—for large beds, Shrubland Pet Rose Geranium is very effective. The new *Iresine Herbstii* will, no doubt, prove a very popular bedding plant,—better even than *Coleus Verschaffeltii*. The old tribe Scarlet Geraniums make splendid American bedders, Lord Palmerston and Stella are two of the best, but yet scarce and high priced. Lanata, Rosamond, Christine, "Really Good," Chance and Lallah, are six of the best bedders. The old Harkaway is an enormous bloomer, though for the single flower poor enough; it is one of the best bedders.

VEGETABLE GARDEN.

South of Philadelphia, the more tender kinds of garden vegetables may now be sown, beans, corn, cucumbers, squashes, etc., that it is not prudent to plant in this latitude before the first of May; and tomato, egg-plants, etc., may also be set out in those favored places. Cucumbers, squashes, and such vegetables can be got forward as well as tomatoes, egg-plants, etc., by being sown in a frame or hotbed, and potted off into three inch pots. They will be nice plants by the first week in May. Rotten wood suits cucumbers and the squash tribe exceedingly well as a manure. Tomatoes and egg-plants that are desired very early are best potted, soon after they come up, into small pots. They can then be turned out into the open air without any check to their roots. Of course, they should be gradually inured to the open air—not suddenly transferred from a warm and moist air to a very dry one.

Bean poles may be planted preparatory to sowing the Lima bean in May. Where bean poles are scarce, two or three hoop-poles, set into the ground one foot from each other, and tied together at the top, make as good a pole, and perhaps better.

Dwarf beans should have very warm and deep soil,—sow them only 2 inches apart. The Valentine is yet the best early, take it all in all.

Peas should be sown every two weeks for a succession,—do not make the soil very rich for them.

Lettuce, for a second crop of salad, should be sown about the end of the month. The Drumhead cabbage is usually sown for a summer crop; but the old kinds of Cos lettuce would, no doubt, be found very valuable in rich soils.

Early York Cabbage for early use should be set out early this month. It is an excellent plan to make the holes with a dibble first, where the cabbage is to be set; then fill up the holes with manure-water; and, after the water has soaked away, set in the plants. It is rather more laborious than the old way; but the cabbage grows so fast afterwards that it pays pretty well.

It is not a good plan to cut all the asparagus as soon as they appear. A few sprouts should always be left to grow from each, to strengthen the plants.

Celery, with most families, is an important crop, and should be sown about this period. A very rich moist spot, that will be shaded from the mid-day April sun, should be chosen; or a box in a frame by those who have the conveniences.

Few things mark a well-kept garden better than an abundance of all kinds of herbs. Now is the time to make the beds. Sage, Thyme and Laven-

der, grows from slips, which may be set in now precisely as if an edging of box were to be made of them. They grow very easily. Basil and Sweet Marjoram must be sown in a rich warm border.

Salsafy and Scorzonera like a damp rich soil.

FRUIT GARDEN.

Grafting can be continued till the buds of the trees are nearly pushed into leaf. Sometimes, from a pressure of other work, some valuable scions have been left on hand too late to work. It may be interesting to know, that if such scions are put into the ground much the same as if they were cuttings, they will keep good for six weeks or two months, by which time the bark will run freely, when the scions may be treated as buds, and will succeed just as well as buds taken from young summer shoots.

In planting dwarf Pears, it is very important to have them on a spot that has a moist subsoil, either naturally, or made so by subsoiling or mixing some material with the soil that will give out moisture in dry weather. Trees already planted on a dry gravelly-subsoil, should have a circle dug out two feet deep and two or three feet from the tree. This should be filled up with well-enriched soil. If the dwarf Pear does not grow freely, it is a sign that something is wrong. It should at once be severely pruned, so as to aid in producing a vigorous growth.

Strawberry beds are very frequently made at this season, and though they will not bear fruit the same year, are much more certain to grow, and will produce a much better crop next year than when left till next August. Though it is a very common recommendation, we do not value a highly manured soil. It should be well trenched or subsoiled: this we consider of great value. In rich soils there is too much danger of having more leaves than fruit.

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 hereafter have it depart.

Above all, do not allow the month to pass without posting yourself afresh on the various methods recommended for destroying insects, or preventing their attacks. The advantage of a stitch in time is never more decided than in the great struggle with fruit destroying insects. A mass of information on these points lies scattered through our past volumes, that will well repay a careful reperusal for the purpose alone of refurnishing ones ideas in that line.

GREENHOUSE PLANTS.

To turn all the plants out in "the first week in May," without reference to any contingency, should not be done. All plants should be early inured to the open air—the ventilators and sashes should be kept open as much as possible, yet by degrees.—Sudden changes of temperature engenders mildew, and a species of consumption fatal to many plants. The hardiest things should be placed out first, in a somewhat shaded spot, and if possible on a bottom of coal ashes, to keep out worms—Azaleas and Rhododendrons, Daphnes and Camellias may go out when their growth is finished; no spot will be too shaded, provided they can get an abundance of air all around. If plants are well rooted, and have not been repotted, they should be so before setting out, as they will, otherwise, suffer at times for want of water. It is objectionable to turn out every thing, leaving the greenhouse for the season like a lumber loft—such as will stay in advantageously should be left, and the idea is becoming prevalent that Cape and hard wooded things are better in than out.

Abutilons, Habrothamnuses, and Cestrums, indeed many similar plants, if taken out of their pots, turned out into the open border, and lifted and repotted early in the fall, will make fine growth and do well. As fast as Hyacinths in pots are done flowering, turn them out into beds. Calceolarias should be kept in the coolest part of the house, and have a good supply of water; as they frequently die after flowering, cuttings of desirable kinds should be taken off now; if they show signs of flowering before fall, do not allow it. Cinerarias should receive the same attention, as they also die out after flowering. As soon as the Chrysanthemums, planted last month, have shot forth, take cuttings for next season's show; they strike very readily in sandy soil, in a somewhat moist and shady situation. Dahlias need not be put out before the second or third week in May; they do not like the scorching heat of summer, and if put out early become stunted and do not flower till later. Pelargoniums should have all the light possible till they begin to open their flower-buds, when they should be somewhat shaded and kept cool; by this the flowers are rendered finer, and last longer. Everblooming Roses, grown in pots, should be pruned in a little after their first flowering, kept a little drier for a week or so, then repotted, and placed where desired out of doors; they delight in a rich loamy soil, and are benefited by manure water while growing; those who have not a collection should begin; there is no finer class; six of the best for pot culture may be

Souvenir de la Malmaison, salmon white; *Devoniensis*, pale lemon; *Hermosa*, rose; *Agrippina*, crimson; *Lyonnais*, pink; and, as a free-blooming white, *Cels*.

Justicias, Aphelandras, and Acanthaceous plants which have been the mainspring of beauty in this department most of the winter and spring, and have now done flowering, should have the lightest and driest part of the house, to ripen well their wood, preparatory to being cut back and repotted for next season's flowering. The Achimenes and Gloxinia will be coming on to take their places; they like a moist heat circulating among their roots, and do well with much rough material in the soil. *Pentas carnea*, or similar soft-wooded plants grown for flowering early in the fall, may be still repotted if the pots become filled with roots. As the weather becomes warm, shade the house a little to keep the sun from scorching. We like to see all plants under glass have a slight shade in summer time. Water in the morning, keep the syringe going in the evening, keep the temperature regular, between 60° and 70°, and all will go well.

Communications.**DRAINING FLOWER-POTS.**

BY "YOUNG LEARNER."

I observe some writers are endeavoring to show that it is a waste of time to "crock" pots. My opinion is that many old fashioned notions are not of much account; but in this matter I must say I think our reformers are too fast. If pots had no holes would the plants thrive? assuredly not. The hole in the bottom is for a good purpose, that is to admit of the escape of moisture, and any "crocking" or drainage that will permit or aid the hole to perform its functions as it was intended it should, must be beneficial. I think your position, in the December number, I believe, that plants must get dry at times, so as to make them get fresh water, with fresh food continually about them, before they can grow well, is a correct one. Certainly, my plants never seem to grow so well as when they want watering often. Drainage assists this process, and is so far good. I put a little broken charcoal for drainage in all my pots, and sure I am that it is not time lost.

NATURE'S LAW OF COLORS.

BY PETER HENDERSON, SOUTH BERGEN, N. J.

When I sent you the article under the above caption, I certainly thought that some of your amateur

readers might take exceptions to some of its points; because in my experience as a florist I have been asked scores of times for black Roses, blue Dahlias, &c., particularly by old ladies of an enquiring turn of mind; and it was partly to endeavor to save myself and others in the trade from such inflictions, that I penned the paper; but I never dreamed that any gardener of Mr. Ferrand's intelligence would, at this day, attempt to controvert an opinion which is now almost unanimously acquiesced in by the profession. But in making the attempt I think he has misunderstood my subject.

As I wrote, and as Mr. Ferrand quotes me, I said that "*scarlet, blue and yellow colors never occur in varieties of the same species.*" Mr. F. gives examples,—not from *varieties* of a *species*, but from *species* of a *genus*. Mr. F. will see that particular stress is put on their difference by the sentence being italicised. A wide difference often exists between different species of a genus, the difference often being apparently much more marked than in different genera. But conceding this, in the examples he takes, he says "we have *Lupinus polyphilla*, blue; *Lupinus sulphureus*, yellow; and *Lupinus Dunnettii* and *superba*, scarlet." The most charitable view that I can take of this, is that Mr. F. does not mean by the term "scarlet" what I do; for *Lupinus Dunnettii* and *superba* are not scarlet.

In Pentstemons, he is quite as far from being correct,—here we have a violet, called in descriptions a "bluish violet," which is scarlet this time true enough,—but have we yellow? I do not know *Pentstemon Lobbianz*, that Mr. F. describes as a "pure yellow," nor no list or work that I have access to describes it as such. Has Mr. F. seen it himself, and is he sure it is really yellow? May it not be of allied genus *Linaria* or *Antirrhinum*, and not a *Pentstemon*?

He gives examples of *Aquilegia* and *Hyacinths* as combining the three colors—scarlet, blue and yellow. Mr. F. can scarcely have seen a *scarlet* *Hyacinth* or *Aquilegia*, or even a clear yellow of either, any more yellow than the *Verbena* before referred to. What I understand by scarlet is the color of *Salvia splendens* or *Verbena Defiance*.—The very convenient and comprehensive term "red" which Mr. F. uses as if synonymous with scarlet, is not a very clear definition of color when applied to flowers, yet it is often very loosely used. I once had a salesman who was not much of a plantsman, in fact he hardly knew one plant from another, but whenever "Mac." was questioned about the color of any particular variety, of which he knew

nothing, he was almost sure to answer that it was a kind of a red; for "Mac." had discovered that there were more flowers of a "red" color than any other, and hence, in the condition of his knowledge, judged it his safest reply.

I trust, Mr. Editor, I am not occupying too much of your valuable space with this matter, yet I think it of importance enough to be briefly brought before your readers, some of whom may yet save in pocket by being set right on the subject. I remember some dozen years ago that my attention was called to an advertisement of *Roses* to be sold by auction in New York; they were offered by a gentleman from France, who described himself as the grower, and that the new varieties of *all* colors were to be shown by colored plates; such an unusual announcement drew a fine crowd, and Johnny Crapeau was beginning to have golden dreams.—The plates were hung around the room, fortunately for his modesty, rather a dark one,—but their coloring embraced every hue of the Rainbow, and something more, for he had them of Coal Black. Time was up, and the auctioneer began, and most unfortunately began to illustrate his first sale with a plate daubed as dark as Erebus. New York auctioneers make no special study of Floriculture, and the vender of Monsieur's *Roses* looked as innocent as the drawing itself; but his efforts to sell were short-lived, for such a storm of laughter and ridicule saluted his ears which I have no doubt he will remember as long as he lives. The gentleman from France had made a mistake,—he had laid the paint on much too varied,—New Yorkers were not quite prepared to invest in Black or Blue *Roses*, and he no doubt betook himself to some more congenial atmosphere, where his genius and stock were more appreciated.

I will again say that there is no record of ever *blue, scarlet and yellow* colors ever having occurred in *varieties of the same species* of plants.

Mr. F. flatters himself that my remarks will have the effect to prevent an effort to produce that yellow *Verbena* that my Ohio correspondent was sure he had found. But as an inducement to Mr. F. to use his personal efforts in the matter, I will make him the following offer:

For a single plant of *Verbena* (of the *Melindris* type,) that will produce flowers of a clear yellow, I will pay \$1000. For a scarlet *Aquilegia*, having flowers of the color of *Salvia splendens*, I will pay \$2000. For a bulb of a scarlet *Hyacinth* of the color of *Verbena Defiance* \$4000, and for a blue *Dahlia*, when any one gets it, \$10,000, and to the Editor of the *Gardener's Monthly*, who allows me

thus to advertise my wants in the reading columns, I will present a most unexceptionable beaver.

[Mr. Ferrand evidently overlooked Mr. H.'s distinction between *varieties* and *species*; yet it may be said in behalf of Mr. F. that although Mr. H. is probably correct in the abstract, it is rather a nice point to decide when purple or violet exactly passes into a blue, or a red into a scarlet. To our mind the purple Crocuses usually called blue are not very far from it.]

MY CALADIUMS.

BY SWIFT.

In May I received my stock of Caladiums, all differently named, and every one of them misnamed, two out of the lot proved to be identical. They were potted in three-inch pots, and placed in the propagating pit, where they remained during the winter, and as they advanced in growth were shifted until I had them in ten-inch pots. In July they were set down in the tank which held about two inches of water, and in which they seemed to thrive admirably.

I have before remarked that I had two of one variety, that being *Bicolor picturatum*. One was put in the tank, the other on the side bench, both received the same care and attention throughout. Now mark the difference: the largest leaf of this variety in the water measured fifteen inches by seven, fully twice as large as any produced on the plant standing on the bench, and the bulb weighed (in February) twice as heavy. A difference of some importance to the commercial grower when we remember each small plant brings, in the spring of the year, from fifty cents to two dollars, according to the kind offered for sale.

In October, as they showed no signs of resting, they were placed in a row on the ground, the rims of the pots touching the flues, and the pot nearest the furnace not more than twelve feet distant. The want of room alone prevented me keeping them growing through the winter. Every bulb kept sound as could be wished for, although they had no water given them from October to February, and were so situated as to receive none from any other source.

I am of the opinion that one proper way to winter these bulbs successfully is to keep them perfectly dry and in a temperature not less than 55° or 60°. A low confined atmosphere and damp soil are almost invariably fatal. I have conversed with men on the subject, whose well known success is proverbial, and they too concur in this opinion.

Compare this with the advice given on page 275

of last year's volume:—A friend sent to me, in midsummer, a small bulb of *C. Van Voorsti*, and he took the unnecessary precaution of cutting away the leaves. It is now pushing for the first time since sent to me, having remained dormant nearly seven months, during which time it got no water, yet it retained that fresh plumpy appearance suggestive of a healthy condition.

I prefer February to any other month for starting them, as then I have time to increase them at pleasure, and the offsets make good plants for summer use. For this purpose I fill one of my hotbeds with fresh stable dung and plunge the pots therein. In two or three weeks the leaves will appear above ground when they are knocked out of the pots the soil shaken from the roots, and wherever a bud has grown it is cut clean out, with a piece of the old bulb and rootlets attached. I give each one a separate existence in a three-inch pot and return to the hotbed where they grow rapidly.

C. marmoratum, the leaves white and green, is a strong grower, and makes an excellent bedding plant. *C. argyriles*, is a very dwarf growing variety, six or eight inches high. The leaves are irregularly blotched, being nearly all white with faint markings of green. I think this one the prettiest and most interesting of any, and the best adapted for making a *specimen*. The way this is done is by planting twelve or fourteen bulbs equidistant in a twelve-inch pan, keeping it near the glass which will need shading to prevent the leaves burning.

From a collection of twenty varieties I select the following best six, which are all good, and will do to form the nucleus of a collection: *Baraquina*, *Belleyme*, *Broggart*, *Chantini*, *Neumani* and *Wightii*; the last named has a rich olive-green leaf, marked with white and red in such a manner as to forcibly remind one of the odd looking characters, whereby the Chinese hand down to posterity the chronicles of the past.

IS THE QUALITY OF FRUIT CHANGED BY HYBRIDIZATION?

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

In reading your article in the October number of the *Gardener's Monthly* upon the change produced by hybridization, we were much interested with your remarks upon the subject, and hoped it would call forth the opinions and facts of others based upon accurate observation.

Believing that Horticulture should rest upon a scientific basis founded upon facts, and that conjecture, imagination and mere opinion should give

place to a more sound philosophy, and believing these views to harmonize with yours from the able, scientific and independent manner you have discussed the various subjects since you have edited the *Monthly*. With these considerations we beg leave to make the following remarks upon the subject:—

It is a true saying, that it has become a popular belief that melons, squashes, cucumbers and pumpkins mix and affect the quality of the fruit the first season when grown close together.

There is, apparently, some plausibility in the theory from the well known fact of the seed hybridizing and producing mixed varieties very different from the original.

Your illustration of "Indian Corn" is a very striking and apparently convincing example of the effects produced which might satisfy the minds of many.

The hybridization and crossing of sorts when grown in close proximity, and the immediate effect produced upon the *seed* perhaps few will deny; but that it effects the quality of the fruit in any respective thing may be doubted.

The example of Indian *corn* is a very positive proof that hybridization does not effect or produce any change except in the *seed*, for the covering and receptacle of the seed remains the same as if not hybridized, which bears the same relation to the grain that the fruit does to the seed.

It may be supposed by some that the cases are not analogous, for the covering of the corn is on the ear before hybridization takes place, consequently it cannot change it; while in the fruit it is different, because it takes place in the flower before there is any fruit, therefore it effects both.

It is very true that the arrangement of the organs of reproduction are different; but that does not effect the general principle, for there is a great difference in every order, species, and variety of vegetation and the various classes of animals, yet we have no authenticated case of the effects of hybridization extending beyond the ovules and ovum.

Whatever difference may exist in the various orders of vegetation the pollen has no effect except upon the organs of generation for the purpose of perpetuating their species, which does not extend to the pericarp, &c., for they have nothing to do with the germ, except to shield, protect and nourish it until it arrives at maturity.

In a physiological point of view, it appears impossible that the fruit is effected by the pollen, for the stigma absorbs and conveys it through minute pores to the ovules which contains the undeveloped

seed and then stimulates them to action by its presence which increases in size by absorption from the ovary which gives them nutriment and protection until they arrive to perfection, consequently the pollen has no power to change the pericarp, nor the pericarp the seed, any more than it can change the stock or plant.

It is as if were grafting in the germ by the pollen of some other variety or species, and has no more effect upon parts not engrafted than top or root grafting has.

The pollen when conveyed to the germ-cells sets up a vital electrical action, which produces a chemical change in the molecules in exact relation to the impression produced by the constituent elements of the pollen, whether of its own order or different species. This action might be called a living organic fermentation, for the cells increase in size and multiply rapidly as soon as the stimulus impresses them, but they generally assume a different form in harmony with their order.

Many facts might be given in illustration of these principles in vegetable and animal physiology to prove that each system is distinct, although they bear a very close relation to each other. Such as seed without a pericarp and a pericarp without seed; and in the animal a fetus without a placenta; and in hybrids and crosses no change of the placenta, decidua, chorion, &c., while the ovum and fetus partake of the character of both.

And in the oviparous we find eggs without a yolk and neither the albumen which form the white nor the shell membrane with its testaceous covering exists in the ovarian ovum, yet in hybrids we perceive no change in either.

In leaving this part of the subject, we shall give the result of our experience. For many years we have grown numerous varieties which mix easily in close proximity, and also separately for the object of saving pure seed; and having observed closely the result, and in no case have we been able to perceive the least effect produced upon the color or quality of any part except the seed; so well are we satisfied of that fact, in planting we pay no attention to the matter except when we wish to preserve pure seed.

We had once a controversy with a *President* of a college upon the mixing of potatoes in the *hill*; he was firm in the belief, and gave what he supposed proof, namely, that he found different varieties from what he supposed he had planted.

A very similar case, this season, occurred with us. we bought some large yellow-skinned potatoes, and selected with care about half a bushel of the

largest which we thought were pure seed, we cut and planted them alone, but in taking them up we found some red sort mixed with them, but the distinctness and uniformity of that variety and its distribution amongst the rest, proved conclusively that it must have been overlooked, and cut and mixed in the planting, as all similar cases are.

BLACK KNOT ON PLUM AND CHERRY TREES.

BY HORTICOLA.

Although I have but few varieties of the Plum and Cherry, yet I am every year troubled with a pest so destructive in its effects on such trees as suffer from it. Among them is also the so-called English Hawthorn (*Crataegus oxyacantha*) and its double red and white varieties. The spores of the fungus, however, inducing the black knot are not so easily received by the bark of the Hawthorn, a circumstance which affords great facilities for watching the incipient growth of the fungus. That it is a fungus, was proven many years ago, (see *American Agriculturist*, 1863, April.) I have examined it myself repeatedly by the aid of a microscope of no great power, and have always arrived at the same result that is reprinted in the number of the *Agriculturist* referred to.

Mr. M. D. Brown (see *American Agriculturist*, 1865, August, p. 289,) advises to cut the knot off and to pare it even with the healthy bark; then chloride of lime, in the proportion of a tablespoon full dissolved in a quart of water must be applied.

Knowing that common salt destroys, with certainty, fungoid growths in hotbeds and on the outside of flower-pots which are often covered by little green plants of the lowest order; and knowing also that a solution of copperas (sulphate of iron,) protects the timber used for building against destruction from fungi; I experimented with both of these solutions combined on Plum and Cherry trees, always with perfect success. For this purpose I dissolved as much salt as a certain quantity of water will take, and add as much sulphate of iron as that solution will dissolve. It has exactly the same effect as the chloride of lime. I have never seen a black knot in the same place again when so treated.

Last summer I found on the trunk of a beautiful double white Cherry tree, which is very much disfigured by frequent excisions of the black knot, a place where the bark was raised a little. It yielded to pressure, and when cut open showed that spongy texture which is an infallible indication of the beginning developments of the black knot. I immediately applied the solution of salt and sulphate of

iron, introducing it with a sharp-pointed goose quill as deep into the wound as possible. The wound healed and the black knot was destroyed.

This is all good enough as far as it goes, but it does not go very far; for the remedy cannot be applied before the fungus actually appears, and has made some progress in its growth. Might it not be useful to wash the trees or sprinkle them over either with the salt solution or that of chloride of lime in the spring before the leaves expand? The solution of salt after that would injure them.

Dr Trimble mentioned recently in one of the meetings of the Farmers' Club, that lime was a certain remedy against the black knot; but did not explain how it is to be applied, nor whether it would destroy it when it showed itself, or whether it acts as a preventive. I am inclined to think that *whitewashing the trees in the spring* would make them proof against the fungus, the spores of which cannot grow in a crust of lime. I shall try it this season. The readers of the *Gardener's Monthly* will be informed of the result.

[The cause of the black knot was thoroughly discussed in our volume for 1862, and proved conclusively to be a species of fungus, and not the curculio, as it was previously almost universally believed to be (see page 196, 232, &c., 1862),—there is, therefore, every reason to confirm "Horticola's" experiments, which afford good hopes that we have got on the track of a remedy if not a preventive.]

MR. FENDLER'S THEORY OF DEW.

BY YARDLEY TAYLOR, LINCOLN, VA.

In the last two numbers of the *Monthly*, is an essay on the "Formation of Dew, by A. Fendler." As some of the views of the writer are, I conceive, at variance with facts, I shall take the liberty of criticising them; and in doing so I will say my object alone is to arrive at truth—nothing else.

The idea generally with philosophers is, that the heat we have on the surface of the earth is derived from the sun, and that a large part of the heat rays are reflected again into space. These rays are supposed to pass through the cold regions of space without diminution, and even lose but little in passing through our atmosphere, as it is well known that the snow line exists even under the equator. I apprehend that there are facts, that if duly weighed will prove this theory erroneous.

And first let me say, that such a supposition would make nature act extravagantly, which she never does; her laws are always perfect, and no more power is used than necessary to accomplish the ob-

ject designed. What need so much heat to be cast off into space where it can be of no possible use.

Again consider, we can have no idea of heat emanating from a body without diminution; as heat is ponderable and must have body, it enlarges substances brought into contact with it. The earth is but a mere speck in the Universe, and can receive only the smallest possible proportion of the rays emanating from the sun; and even taking all other planets into account, the amount thrown off into space must be inconceivably great. To suppose such an amount given off without diminishing the sun's body, is taxing philosophy rather heavily, as there is no evidence of diminution.

Light, we know, does emanate from the sun; but may not heat belong to this earth, and had its origin in its creation. We can have no conception of heat on the surface of the earth, without contact with air, and the air will become heated; and heated air, if unobstructed, will rise until it meets with a space of equal density, when it will stop and can rise no further. Even the heat in the air can warm the cool strata above but little, and can rise but slowly. Witness the cold region on high mountains in tropical countries, and the reports of aerial voyagers in balloons, always reporting cold in high regions.

That there is a warm belt a little above the surface of the earth is being understood generally.— Around the Southern Alleghanies is a remarkable evidence of that fact. There the mountains are higher than any where else in the United States this side of the Mississippi River, and the valleys are proportionally deep. Along the valleys of the branches of the Upper Tennessee River, there is a space of about 250 feet in height where frost and dew are seen as in other places, and where frost sometimes injures fruit while in blossom. Above this is a warm belt of about 300 feet in height where frost or dew are never seen, and where fruit never fails. There wheat is never subject to rust or mildew; while it is in the lower region. Above this region is a colder one again, with a more rarified atmosphere; and where on the summits of those mountains the Strawberry does not ripen till the latter part of 7th month (July,) while in the same latitude, on tidewater, this fruit ripens two months earlier. Something of the same is witnessed here, as we often see our mountains covered with snow or sleet when it is raining here, showing that it is warmer below. Sometimes only the highest summits are covered, this again partly down the sides, then sometimes the whole moun-

tain is covered to its base, and not in the valley below.

To suppose that the rays of light emanating from the sun, and coming in contact with our atmosphere, and thus producing heat by friction, and carrying the heat back again to the earth, is not more opposed to what we conceive to be the laws of nature, than to suppose this heat can be passed through the cold regions of space, and thus conducted to the earth. Of the two this seems the most reasonable. We have evidence in zirconites that they in coming in contact with our atmosphere, do generate heat, and give out light; and the rays of light far less solid, yet they move with far greater rapidity, and may they not be able to thus generate heat that accompanies them. This theory recommends itself for its simplicity at least.

The essayist, in speaking of heat radiating, says: "heat passes through air scarcely warming it at all," and instances the fact of heat from "a glowing fire in the open air; we feel the heat at a considerable distance from the fire, although the intervening air is far below the freezing point."

This does not seem to be well taken, for it must be a fact, that a large part of the heat from the fire is carried off by the air, and must to that extent be heated; but if the fire is in a room, the air, however cold at first, will be heated, and he would be warmed by contact with warm air as well as by direct rays of heat. There can be no contact of heat with air without warming it.

In speaking of "a perfectly clear sky," he says, "by its deep azure tint that gives proof of a pure transparent atmosphere not laden with any large quantities of moisture or vapor." There is reason to believe that the most transparent atmosphere is often heavily laden with moisture. One evidence is, that such an occurrence is a pretty good precursor of rain. We know that water in evaporation is perfectly transparent, and it is only when it becomes condensed into vapor that it is visible at all.

We had here last summer a beautiful illustration of the fact of a transparent atmosphere being heavily laden with moisture. One day there was a heavy and dark cloud rising from the north-west, and had overspread the whole horizon from a little beyond the zenith to the entire west, with its eastern line well defined, the rest of the horizon eastward was very clear and of a deep blue; and while watching this, I observed clouds began to form in this clear blue sky. At first I could just discern a little mist, not larger than "a man's hand," as the servant of the prophet reported to his master, but presently it increased, and that rapidly, until it

formed a considerable cloud, at the same time it moved upward briskly, and at last joined the large approaching cloud. There were many, very many, small clouds, thus formed in this clear atmosphere, all moving rapidly and absorbed by the larger one. There must have been a strata of air heavily laden with moisture and meeting with a colder strata it condensed and formed vapor, but this air was perfectly transparent and the sky was very blue.

The essayist asks the question, "why is it that basin-shaped depressions of ground," "clothed with grass are more subject to early frost in autumn. and late frosts in spring, than elevated ground?" and then undertakes to answer it; but I do not think his answer strictly philosophical.

He conceives that the particles of air in immediate contact with "radiating bodies are cooled first," and "being cooled they sink to the ground and glide down to the lowest place they can find." Now, I presume the fact is, that the heat or caloric in the air rises in a still time, as is common at night, and thus produces the cold in the valley; for cold is the negative of heat and is not positive as heat is, and if this using of caloric is continued long enough frost will ensue. He further says, in relation to thawing, "the rays of the sun strike the bottom of that basin warms the ground first, and then the lowermost strata of air, &c." This is not strictly true, for many times the ground is covered with grass or other matters—and the rays of the sun striking the crystals of frost dissolves them first while those in the shade will not dissolve until the sun shines on them or they melt by the heated air. This takes place often when the earth is not heated at all, being covered up, but is done by the direct rays of the sun. He also speaks of the settling down of the colder air of the higher grounds into the lower grounds, but I conceive the true fact is the rising of the caloric from the lower parts gives protection to the higher grounds. There was a remarkable illustration of this view here some 30 years ago. Just after the leaves of the forest trees had attained their full size and were very tender, we had here, three nights in succession, frost severe enough to make ice on pools of the thickness of window glass, the consequence was that fruit was killed, and even the leaves of forest trees in low situations suffered. Near Alexandria, Va., a broad valley opens up from the river with branches into the hills on either side, passing along the road that crossed one of the three branches was a plain instance of the foregoing theory. At a particular height was the division between the green leaves

and the killed leaves on the trees; below this all were killed and above it they were not.

This height was as level as water, up the hollow the height reached the ground as the bottom of the valley rose, but downward it reached higher up the hill, the leaves on the lower branch of trees standing a little below the line were killed, while those on the upper limbs were not, plainly showing that degree of cold sufficient to kill the leaves, reached only to a certain level. Experiments have been made here by placing two thermometers in different elevations, say about fifty feet, one above the other, and in summer mornings there would often be as much as six degrees difference, the upper one that much higher. A few degrees difference this way explains why it is that orchards in low grounds suffer from frost, while those on higher grounds do not; for four degrees below the freezing point would do injury, while two degrees above would be harmless.

It would seem to be quite as reasonable to suppose that heat belongs to the earth and is kept there, as to suppose that all the heat in the air is drawn from the sun, and that most of it again flies off into space. Why may not the rays of light in passing through the air carry down with them a portion of the heat in the air, as the two substances (if substances they can be called) are so similar in many of these manifestations. Convex glasses concentrate light to a focus, and thus manifest heat; while the prism decomposes light and shows heat only in the red rays. May it not be the fact, that heat only is reflected at the same angle that the red rays are, and not at the angle of other colors?

There is one thing in connection with air, and what it contains that would be well to consider. The laws that govern other fluids do not govern air. Other fluids, as water for instance, will not mix with those of different densities, but will settle one above the other. Oil we know will always flow on top of water, and so of other things, if heavier they will sink, if lighter float. But the three gases that make up the air are of different densities, yet in thin mixture they are always and in all places, whether high or low, in the same proportion, and float equally alike. It holds water, that is a much heavier fluid, as it were in solution, and may it not hold heat without its flying off into space. I think it will be found that there is always, particularly in still time, a warm stratum a little above the earth with colder above, and that at such times the mercury falls lower than in windy weather, when all is mixed together.

GRAPE GROWING IN KANSAS.

BY A. M. BURNS, MANHATTAN, KANSAS.

I find, through letters by mail, that many of your eastern people are anxious to learn how the grape succeeds in our locality. Our geographical position is peculiar, half way between the Atlantic and Pacific Oceans, as well as mid-way north and south. Those desiring information about the temperature for ripening grapes are referred to the reports of the Department of Agriculture for 1863, where they will find, that of ninety-seven localities reported from the loyal States, that we have a higher temperature for ripening any or all of the native grapes than any other part, and that it is great enough to ripen the most tender foreign wine grapes. I can hardly realize the fact that the report from our county shows we have the best region of any loyal State in the Union, and that 160 acres of good grape land can be procured under the Homestead Law, by residing on it for five years.

I have fruited the Concord, Diana, Delaware, Isabella, Catawba and Clinton four years, and consider them suited to our climate. Although some of my vines are nine years old, I have a great many varieties too young to produce grapes. I planted about fifty varieties last spring, which, with those planted in 1864, will not bear fruit for two or three years yet. I expect to fruit twenty or more varieties next year. The first grapes I had was in 1859, and more or less every year since,—during these years I have not seen a single bunch or berry diseased, yet the mildew is within one hundred and ten miles of us, on the Missouri River, but we are free from the atmospheric humidity that visits other regions, which may account for it. I have had some yellow leaves on yearling vines, propagated from green wood, yet the second year they sent forth healthy verdant foliage. From my reading, and the little experience I have had with the grape, I am satisfied that the bluffs of this region are the homes of the different varieties of grapes, not even excepting California, which boasts that the east will be supplied with the best wines as soon as the Pacific Railroad, which will pass through our city, (they are at work now and the cars will be here in spring,) is completed. Let me say to our California friends that the reports show that our temperature, at the right season of the year, is better than theirs, although our mode of culture may have to be different. We are in about the right position for N., S., E. and Western grapes. I believe that any grape that will stand the hot days of summer can be successfully grown here; in fact the eastern people don't know what a *real* "out-door" ripened

grape is; some of them appear astonished when I tell them the Concord, Clinton and other grapes are *very* excellent here. Even the great William Saunders, in a derisory way, said, "I suppose your climate will not change a Turnip into a Pine-apple." All I can do is to refer them to the article of J. S. Lippincott, Esq., pages 494—496, of Agricultural Report for 1863, if that is not sufficient they must come here and judge for themselves, *then* they will believe.

I am anxious to test every native grape, and would be thankful to every grape-grower to send me their grape catalogues, it would facilitate me in making my collection. I would be glad to test any new seedling not for sale, giving a pledge not to distribute any wood, and make its merits known.

RECOLLECTIONS AND REMINISCENCES OF PEARS, NO. 2.

BY W. HEAVER, CINCINNATI, OHIO.

My last had reference to Pears in the London market, about the year 1825; in the present article I shall confine myself to recollections of the Pear about Cincinnati for some 30 years back. About the period named, the late Capt. Brigham, formerly of Boston, and afterwards President of the Cincinnati Horticultural Society, imported from France a large (or what was then so esteemed) variety of Pears, embracing among other whose names are still well known, were also the following which are not found in the catalogues of the present day: Bezi Conchatan, Beurre la Devere, Beurre Angleterre de Noisette, Beurre Angleterre, Beurre Spence, Colmar, (this variety was introduced with highly laudatory character, it was afterwards questioned or doubted whether we ever had the genuine, I have yet never seen the fruit;) Catillac, (now called Pound Pear,) Bourgo Meister, (now Beurre Diel,) Holland Bergamott, Prince du Printemps, Russet Girs, Sagret. I have fruited the majority of the foregoing, most of them are worthless or cooking winter fruit.

About the year '36 the late A. H. Ernst, commenced making collections, and to the time of his death paid great attention to the cultivation of the Pear, yet so little was really known about them that in '54 or '5, on some specimens of *Onondaga* being sent to the Horticultural Society from Western New York, without name, they were pronounced *Bartletts*, the difference in their season being attributed to their place of growth. For many years it was considered that our soils or climate was not adapted to the Pear, owing to the preva-

lence of blight (Fire blight or frozen sap-blight, as it is variously called, and for which as many remedies have been recommended as in the case of the curculio,) with an experience of twenty-five years in the growing and cultivating of the Pear, I can positively say I have found them to bear and produce more regularly and certainly than any other fruits, and the supply in our markets is increasing with every successive year, both in quantity and variety. Twenty years ago it was a rarity to see Pears exposed for sale in our market, except an occasional bushel of the Pound, the White Doyenne or the Summer Bon Chretien; now we have Pears fully six months in the year, although they are still in limited quantities, except in the late Summer or early Fall, when so many fine varieties ripen about the same time.

One of the most popular Summer Pears, with us, is known as Mear's Summer Butter, or, according to Elliott, the Summer Butter of Cincinnati; its *true* or original name is still a matter of doubt, and uncertainty with Pomologists, it is believed to have been introduced into this vicinity by Silas Wharton or Worton, a nurseryman from New Jersey, a member of the Society of Friends, and one to whom this section of the country is largely indebted for the early introduction of many of our best varieties of fruits. I have no record of the date of his first settlement in Ohio, or the time of his death, but certain it is that we owe him a debt of gratitude for the dissemination amongst us of many of our finest Apples and Pears of the present day.

Experience is fast removing the unfounded prejudice of past years as to the unfitness of this region to the growth of the Pear, and the demand for Pear trees is increasing every year; whilst time and opportunity is fast improving our knowledge of the pleasures and profits attending the cultivation of this fine species of fruit.

I am not acquainted with any species of fruit that possesses such a diversity of character in quality, color, form, or appearance, as the Pear; it may take an enthusiast to realize that full enjoyment or measure of pleasurable interest which the tending, cultivating and watching, and discussing all the variable points of character exhibited by this fruit, and if so, Mr. Editor, I am content for you to class the writer in the category of Enthusiasts, for certainly I experience no greater pleasure in any pursuit than when discussing the merits of my favorites with some intelligent or experienced *Brother Pomologist*.

GROWING GRAPE-VINES FOR VINEYARD PLANTING.

BY CHARLES GRUNEBERG.

There is a good deal written about the cultivation of Grape-vines for the above purpose in various periodicals. The vague manner in which the subject has been treated has prevented young growers from profiting by their reading. One writer directs or rather suggests that Grape-vines should be entirely and individually cultivated in pots to ensure strong growth; and another even goes so far as to recommend the use of exciting composts, and still more exciting liquid manures, which is like making a short cut at the edge of a precipice; all this is very good and may be over done, but so long as the vulgar notion prevails, that size is the criterion of a good vine, fit for planting out, and so long as the nurseryman has to use every means to produce artificially and apparently strong grown vines, so long will the vineyards be supplied with a stock, which sooner or later will prove the fatal effect of nursing Grape-vines into large size the first year.

The Grape grower should study the after treatment the vine requires, and begin its cultivation accordingly, from its infancy, and not place it in a narrow compass, in which the naturally spreading roots of the Grape-vine must be confined, and through which process an unnatural dryness is occasioned, which can only be prevented by saturating the plants in pots with water. It is like confining a young healthy youth to a straight-jacket; besides, measure only the surface of a 4, 5, or 6 inch pot, and one will find a great surface exposed to the heat and dry atmosphere of a hot summer's day, which must effect the roots; many in order to avoid this exposure plunge their pots, and then the evil is worse, the plants rooting through.

I have visited many of the first vineyards in Italy, Styria, Cretia, Bohemia, Austria, Hungary, Germany and France, but I never have seen one of the millions, nay billions, of Grape-vines grown in a pot, which have supplied these thousands of acres of vines; nor have I seen any means used to obtain that strong growth so much desired and spoken of in pot culture; and still there they are from generation to generation, without being previously grown in pots.

Even during my stay at Cincinnati, in this country, during two years, I have seen the Grape (especially the Catawba) cultivated on a rather large scale, but not any cultivated in pots for vineyard planting.

It is an easy task to grow Grape-vines for show of size, but they are like the countryman's wagon made "to sell."

If any one ought to know any thing about the subject, I ought to, for I have fond inclination and love for it, devoted my whole lifetime to this business, and worked in it in the leading establishments of the world practically, and therefore think I have a right to speak candidly, and in the interest of the promoters of Horticulture. I have learned through experience how to produce good healthy, stocky plants, to give every satisfaction to the cultivator and also a reasonable profit to the grower, and to enable the vineyard proprietor, who intends cultivating largely, to procure his supply to advantage.

One can easily conceive the impossibility and impracticability of growing vines in pots, when the demand in the American market, at the present day, exceeds the supply by hundreds of thousands.

I am at this present moment engaged in growing for the coming autumn rather more than 200,000 Grape-vines, the larger quantities consisting of Concord, Delaware, Hartford Prolific, Rebecca, Diana, Catawba and also a considerable number of Iona, Maxatawney, Adirondae, etc., for the sole purpose of vineyard planting, and I can pride myself, with good conscience, that the plants produced by me, for that purpose, shall be second to none.

My method is simple and practical, my vine eyes are already struck, and most of them planted to ensure a long season for their development without forcing them to monsters.

Any one wishing to see my operations is kindly invited; or if desired, and I am permitted, I will, in a future number, detail my method for growing Grape-vines for vineyard planting in this country.

[With a superabundance of strong cuttings and a favorable climate, it will be readily understood that Europeans will be able to raise all their young plants entirely in the open air. As we understand the argument of the pot-men, it is mainly that if a little bottom heat, potting, sand-boxes, forcing-houses or glass-frames of any kind is so good for eyes early in spring, instead of putting them at once in the open air as they do in Europe,—why may not a little longer than some persons advocate, be also good? If Mr. Grunberg means that he raises his grapes from the first, entirely in the open air, from eyes, as they do in Europe from cuttings; and the vines as good as by any artificial aid, his plan will be a great boon to Grape growers.]

ORNAMENTAL PLANTING OF GROUNDS.

BY C. H. MILLER, GERMANTOWN, PA.

Read before Pa. Hort. Society, March 6th, 1866.

Gardening as an art, has flourished in all countries and in all ages; and has possessed in all times such distinctive features as the climate, the nature of the soil, or the physical formation of its surface, as well as the character of the people have created. In the several branches of gardening, art is chiefly employed in the cultivation of plants, fruits and vegetables, with a view to obtain their product; but in the branch now under consideration art is exercised in disposing of ground, building and water, as well as the vegetating materials which enter into the composition of verdant landscape.

This is what is called landscape gardening or the art of creating or improving landscapes; and landscape gardening, as actually practised, may be defined as the art of arranging the different parts that enter into and compose the external scenery of a country residence, so as to produce the different beauties and conveniences of which that scene of domestic life is susceptible, what the beauties and conveniences are must of course greatly depend on the locality, climate and taste of the individual.

This art would be, and is a very simple one in new countries or settlements, where men have few wants, and scarcely any desire for refined enjoyments, but like all other arts, would become more elaborate as mankind became wealthy and more refined in taste and manners.

Taking a glance at the past and present state of landscape gardening in all countries, we see that the objects desired in the country residence of the wealthy who wish to display their taste and wealth, are fundamentally the same. These were and are adaptations to the habits of more gentle life; as to matters of use and conveniences for the time being, and in general a distinctive character from the common scenery of the country in matters of taste and beauty. Thus the first aim would principally be directed to the mansion and surrounding buildings, and these would at first be merely of greater dimensions than those of the common people; but as society improved, this would be distinguished by the greater taste and more perfect execution incident to the habits and character of more genteel life. The second object distinctive in the surrounding scenery, was and is affected by such dispositions of the common materials of the landscape, as ground, water, trees, etc., as indicate the employments of art and labor. In the first stage of the art, this would produce regular level or sloping

grades and surfaces of grounds, water and trees bounded by straight and geometrical lines, would distinguish the country residence from the more natural-like scenery of the surrounding country. This has often been condemned by men who advocate a wilder style as unnatural and absurd; and so it is if we look upon it merely as an imitation of nature; but as it never aspired to this, but on the contrary, is avowedly a display of the power of art over nature, it ought to be judged like any other work of man by the end in view, and be considered as designed to distinguish the garden scenery of the man of taste and means from the common unimproved scenery of the surrounding country.

Since the introduction of the modern, or as it is termed, natural style of gardening it has been the common practice of some to condemn indiscriminately any other mode as unnatural and absurd. Now, if the modern or natural style be considered as merely planting and dotting trees, shrubs, &c., indiscriminately over the whole surface of the park or enclosure, as has been in many cases adopted here, to the manifest injury of gardening as an art, I must confess I fail to appreciate the natural system, and would fain look on nature in another form.

Gardening as an art is destined to create scenes in which both beauty and utility are combined, admitting, therefore, that both styles are alike convenient and disapproving therefore, of absolute preference of the modern or natural style to the total exclusion of all others. I have in many cases successfully appropriated, or rather adopted, in my practice, a mixed or transitional style, combining the uniform formality of the one system with the freedom and natural grace of the other, at once showing the effect of art and design in the improvement of nature.

The expression of design is displayed by such forms and dispositions as shall at once point out that they are works of art, thus regularity and uniformity are always pleasantly recognized in the rudest works of man, and point out his employment of art and expense in their construction.

Thus the lines, surfaces or forms of geometrical gardening should be different, and in some way opposed to those of general nature. Irregular lines, surface, or forms, are alike equally useful works of art, and considered with reference to other beauties may be more agreeable than such as are more regular, but if too prevalent they might be mistaken for the production of nature, in which case they would lose the beauty and expression of design, but form perfectly regular and uniform, immediately excite the belief of art and design, and this be-

lief creates the admiration which follows the employment of skill and expense.

Ground laid out in regular slopes, or in hills or dells of symmetrical shapes; plantations of straight line boundaries; trees planted equidistant in masses or in straight rows; water in architectural basins, regular lakes and fountains; walks and roads of uniform width and perfectly straight; handsome walls and their hedges, are all easily distinguished from nature's management of those materials and highly expressive of the hand and art of man.

The ambition and aim of the landscape gardener should mainly be directed in uniting utility and convenience with beauty, no design, however beautiful, will compensate for entire want of utility in any scene of architecture or gardening: objects at first sight thought beautiful, soon lose the expression of design when found to be useless and inconvenient. To unite different kinds of beauty to dignify ornamental forms by use, and to raise merely useful forms into beauty, is the great object and science of landscape gardening.

Some of the various forms and modifications of utility and convenience blended with beauty and expression of design as applied to the improvement of country residences may here be enumerated.

The dwelling and offices first demand attention, as the centre figure of art and design. In selection of situation a great variety of circumstances, some of a general and others of a local nature, require to be taken into consideration, for example, good air and water, a genial climate, fertile soil, cheerful prospects, and, which is all important, a suitable neighborhood; the shapes of the ground near the house, the views from the several apartments, and the character of the surrounding scenery than can be appropriated. The art of appropriation is a very important one in creating landscapes, or such an arrangement as shall either in reality or appearance render all or the greater part of what can be seen from a country seat to have a real or apparent connection with the principal. The simplest way of effecting this is by planting out all objects that do not correspond with the idea of appropriating and harmonizing the scenery, by adopting some of the forms, colors and arrangements which appear in those of the neighborhood situated in the surrounding country, and as seen from the dwelling and other prominent points of view.

The line of sight from the principal rooms should, if possible, traverse the whole extent of the park or enclosure in the direction of the most prominent objects of interest. The outline of the planting or

belting should be of that character that would at once stamp it as belonging to the place, and not to that of a neighbor; a view from a dwelling, situated near a neighbor's improved grounds, or from a public square or park, is to say the least of it cheerful and beautiful; but it wants the appropriation, it wants that interest, that charm that belongs to ownership, the exclusive right of enjoyment with the power of imparting or refusing that pleasure to others.

Ornamental planting of trees, as a material, enter largely into the operation of landscape gardening; and here I will take the opportunity to say that the very greivous error, and much to be lamented system adopted by some persons in this country, is the method of planting or dotting in a confused manner over the whole surface of the lawn, in the immediate proximity of the dwelling, all kinds of trees that come to hand; shade is their only and grand idea in planting, ignoring altogether the fact that too much shade imparts a gloomy and melancholy feeling about the place, almost intolerable in damp weather; this mistake has been brought about, I have no doubt, by a futile effort on the part of the operator, to carry out a strictly natural system—at once losing sight of all idea of appropriation, artistic design or arrangement. This unscientific way of planting trees close to the house defeats the great object designed in the comforts of a country home, namely, that of shade with a free circulation of air and wholesome sunshine, which is so necessary to our whole existence, by leaving open spaces or plots of grass in the arrangement formed by planting intersecting groups of trees at a distance where their shadows fall on each other, a free circulation of air could be facilitated from all points of the compass. Those groups should mainly consist of deciduous trees such as Maples, Lindens, Chestnuts, Magnolias and others that make good shade; tall Evergreens, such as Norway Firs, Scotch and Weymouth Pines are too large, and should be sparingly used near the dwelling, as they obstruct the view of the lawn, effect stagnation of air and completely shutting out the cheerful rays of the sun so desirable to health and comfort. Moreover, the effect produced by planting tall Evergreens in close connection with the house has the effect of neutralizing the appearance of the mansion as the principal feature, giving a low squatty inferior look; as the trees increase in height and size, this defect is especially noticeable in flat surfaces, and in such situations the spaces on open grass plots should be roomy and the glades wide and sunny.

In relation to the material employed in landscape gardening generally, there are none more neglected and misunderstood than the skillful management of Ornamental trees, in the difference of their relative uses, as to use and ornament, or in bringing out their value as to form and color. The designer or operator should thoroughly understand his business in detail, and be competent to so arrange his materials in a way to prevent such a confusion in arrangement one so often meets with, and which is so often justly complained of. A few tall growing Evergreen trees distributed here and there in groups around single specimens, about the park will have a fine effect. They should also form the principal masses for screening the offices and vegetable garden, and other less sightly objects. They also form good shelter, and should be liberally used on the north and east side of the dwelling and other buildings that require shelter and protection,—but I am disposed to think that in the park and pleasure-ground the large Pines and Firs should not be planted in separate groups or used as a screen along the boundary lines, without a judicious mixture or blending of Deciduous trees. Evergreens, even in winter, are lightened up and set off to an advantage by intermingling of trees of a different character.

In Summer and Autumn the harmonizing effects of the mingling are even more striking. In fact, one cannot conceive any thing more grand, more varied, or more beautiful than a diversified plantation of trees and shrubs—during the Autumn months. Take for instance, the side or breast of one of our fine woodlands, where the Evergreen or Deciduous trees of great variety and luxuriant growth, commingle in one broad bank of particolored verdure—what delicate tints wave and lift their perpetual changes from the deep green of the Hemlock Spruce to the silvery tints of the White Maple, Poplars, Beeches—and when the frost of Autumn has mellowed and toned their foliage, what can compare with the beautiful golden orange and lemon tints of the Sugar and Norway Maples, the fiery brillianey of the Gum and Dogwood and many other of our Deciduous trees when relieved with the unchanging hue of Evergreens. Water, as a material in landscape gardening, is so captivating and interesting, so varied in the composition of natural and artificial scenery the temptation to achieve something grand on the part of the operator is almost irresistible, and the many failures so often met with, almost excusable.

The general impression, that no view in landscape scenery can be considered perfect without this feature, I think is about correct; and this prevalent

idea has often induced persons to imitate lakes, ponds, &c., on so small a scale that borders on the ridiculous,—lakes and ponds are the most beautiful forms in which water can be displayed in the park of a country residence, and should be some distance from, and considerably below, the level of the line of sight from the house.

They should never be introduced where there is not a sufficient quantity of running water at all times to maintain an overflow, for nothing can be more unpleasant than a green, slimy, stagnant pool; as nothing is more delightful and beautiful than pure, clear, limped water. But, however beautiful and grand is the effect of water in the landscape, it greatly depends on trees as an accompaniment. The variety and intricacy of outline, the reflection of forms, and the shadowy recesses, and stay lines of light all depend on trees planted along and around the margin. Water, as a material, generally forms a part in the ancient or geometrical style of gardening—waterfalls, cascades and fountains are most charming and elegant decorations for the pleasure-ground; but fountains of a highly artificial character are happily situated only when in connection with buildings or ornamental and architectural forms; a single fountain in the centre of the flower garden, or in the neighborhood of a terrace walk is an appropriate place for it, there the spring draining and spreading in the sunlight or a summer's evening is an agreeable feature in the scene, as seen from the windows of the principal rooms.

In the landscape gardening the term residence denotes not only dwelling but the whole place occupied by the proprietor, and employed by him for domestic use. The term *villa* is applied to places of considerable variety in dimension from the house with a small plot of ground attached, to one surrounded with several acres of pleasure-ground and park. The park villa is generally considered to be an enclosure of seven to ten acres, with one-half or two-thirds taken up with the pasture land, arranged in one or two small lots, and the remainder by the house, offices, gardens, lawns, &c. In this way the whole should be planted and arranged so as to present a perfect representation of a park and pleasure-ground on a large scale. The pasture field should be planted with intersecting groups of trees for shade and effect, and to impart a park-like appearance, it should be divided from the lawn with light iron fences or light iron hurdles, which are better adapted for such purposes than the common wooden fences, walls or hedges.

A curtain or belting of trees should encircle the lines of the enclosure so as to screen the boundary

fences which are too conspicuous. It sometimes happens, however, that the extreme verge of the park may seem to pass imperceptibly and harmonizingly into the adjoining property, and if no unsightly objects require planting out, the view may thus be deepened. The lawn or dressed ground should be between the house and the park, and should be laid out and arranged so as the one should appear to be a continuation of the other.

Abrupt terminations, however, are often unavoidable as in examples of small villas, where the owner having but a small plot and no control beyond his boundary fences, all that can be done, therefore, in such cases is to create as much beauty and interest as possible within the given limits. Where one villa joins another this abruptness is in some measure lessened and seldom felt as a deformity, though connection and general harmony with the outside, will add interest and beauty to what is within.

Far behind as we are in Horticultural attainments compared with the people of *England* and *Western Europe*, where so much wealth and patronage abounds, we are modestly and hopefully, according to our opportunities, diligently following in the track which may lead to matured excellence in this interesting and delightful science and art. When through the execution and taste of individuals and the efforts of our Horticultural Societies, we are still aiming to accomplish that perfection so delightful to an enlightened community.

NOTE ON THE BROWN THRUSH.

BY "A BOY READER."

MR. EDITOR: In looking over the *Gardener's Monthly* for Dec., I noticed some statements from Mr. J. P. Norris' article on "Familiar Birds" at variance with my own observation in this region. Of the Brown Thrush he says, that it usually builds its nest in hedges or on shrubbery. This is in accordance with Wilson. I have been a close observer of its habits in this region for years, and I have never found a nest of the Brown Thrush any where but in a brush heap, or on the ground.

Of its food, he says, it consists entirely of insects and seeds, but it never disturbs fruit. In this locality it is one of our most greedy fruit devourers. I love it for its glorious song, as it sits perched on the topmost bough of some tall tree, and therefore cultivate its friendship; but it is trying to have it eat our choicest cherries, raspberries and Lawtons; even the strawberries do not escape his keen vision. Wilson says he feeds on berries, as well as insects and worms, still we should not grudge him the fruit he eats, when he destroys so many of the worst enemies of the farmer and gardener; my observation agrees with Wilson in regard to its eggs, which are five in number.

The Gardener's Monthly.

PHILADELPHIA, APRIL, 1866.

✉ 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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NURSERYMEN AND THEIR CUSTOMERS.

Whenever one attempts to write on a personal subject, he is sure to get into hot water. We have been scalded several times. One supposes we are "hitting at him;" another concludes we mean something else than what we say; and another class, of which there are always some in every community, assume from the start that you are "opposed to their interest," and see a good chance for a glorious fight. Mr. Downing and many of the most delightful writers and best wishers to our cause, have hesitated to point out evils that may have existed in the profession, through a disinclination to provoke enmity from these several quarters. We are not ourselves amongst those who "love to be despised," but we do think it our duty to prune away any rotten branches that may, from time to time, appear on the horticultural tree, without being frightened at the crashing noise they make as they fall.

Our article on Gardening and Gardeners has received strong and marked attention throughout the United States, and will be the means—subject to the drawbacks above noted—of our receiving the thanks of hundreds of employers who are embarrassed by pretenders and mountebanks, and by the good gardeners whom these ignoramus disgrace. We hope to see the time when good gardeners will be appreciated—when they will be paid as well as they are appreciated; and that they will study, by the energetic love and pursuit of their profession, so to thoroughly understand it as to merit the appreciation they deserve. This subject we think we exhausted at the time, and we now propose, in the same candid spirit, to say a few words on some of the complaints made between *Nurserymen and their customers*.

We are in receipt of letters on this as on the other branch of the subject, some of them taking the form of communications; but as it is one we do not care to see the pages of our journal employed

in debating, we decide, as we did before, to insert no articles of this kind, but to say a few words ourselves, and there let the matter rest on the well-favored maxim that a word to the wise is sufficient, while any amount will be lost on those who are not. A few will, no doubt, abuse us, but if we feel the cause will be the better, we do not mind. One letter says the writer ordered "10 Ott, 10 Canandaigua, and 10 Winter Nelis pears, amongst many others named; and had sent him 10 Bartlett, 10 Seekel, and 10 Lawrence pears, the nurseryman assuring him that they were "quite as good as those he had named;" "which," says our correspondent, "might be all true, but I already had the others, and wanted the ones I named. On complaining, I received a bill-head on which was printed in very small letters "*Unless otherwise instructed with the order, we consider ourselves authorized to substitute other varieties when out of those desired.*" And he asks "Is this honorable?" We think not.

Another writes: "I ordered a lot of plants from ——— & Co. I heard nothing that they received the order. Two months after I received a lot of plants, not one-fourth of the number I ordered, and three-fourths of these what I did not order, although I ordered the day after receiving a new catalogue. I got no advice of shipment, nor any invoice to compare with the plants till long afterwards."

Another says: "Mr. ——— is very much lauded by certain horticultural editors as a garden architect. My house cost me a heavy sum, and is an entire failure. I hardly know which to censure most—the papers which praise what they know nothing of, or he who undertakes whereof he is ignorant; but as a victim entitled to grumble, may I not ask, should not such things be exposed as a warning to others?"

Still another says, "In sending remittances to nurserymen, I frequently receive no receipts without having to write again for them, and at other times receive them without stamps attached. I could affix the stamps myself, to be sure, but as the law requires the signer of the receipt to cancel the stamps with his initials, my stamping them is of no use. It looks mean to complain, and yet seems mean in the nurseryman to neglect compliance with the law for the sake of saving two cents. Would it not be as well for you to give a hint as to what the law requires?"

These happen to be all the grievances we have just now on hand, but we could name scores of others which we have had during the past, and many others which we have had by word of mouth

many and many a time.

We think precisely the same line of argument may be adopted here, as we employed in the article referred to. There are "shams" among business men as well as among gardeners. A botch tailor may make a sorry garment out of a good piece of cloth, as well as a botch architect spoil what might have been a good conservatory,—and the man who sends you an elephant when you merely ordered a horse, is no better than the one who sends you a Seckel when you desired an Ott. These sort of things are found in all professions,—and the only remedy we know is to do as we would do with our tailor—try to find out those which are prompt and punctual, have good business habits, and have the intelligence to know your wants and energy to supply them. Nurseryman, like gardeners, will find it to their interest to study their profession thoroughly. He who knows the most, and has the best business habits, will be found most likely to "win."

So much for the customers—and now a word for the nurseryman.

Many start with the idea that "there are more rogues than honest men in the business," and when a mistake occurs, as in such a very intricate business must occur at times, it is at once attributed to the "rascality of the profession." A man has in his catalogue a plant which is very rarely called for—he has perhaps but half a dozen specimens which he supposes may meet the demand for as many years—all at once, by some chance, they all go, and the next applicant considers his catalogue a fraud and a swindle. Not knowing the half of his customers personally, he is much more often the victim of swindlers than customers are victimized by him. A very common dodge is some thing like that of one, something like which we have recently had our attention called to. "To ———, Chester Co, Pa. Send us ——— thousand grapes at ———, and collect on delivery. ———, St. Clair Co., Ill." They are sent. Then comes: "Gentlemen, the boxes were so rotten they broke to pieces. The grapes will most probably many die. Please direct that the box be delivered to us, and for what live, of course, we shall pay you for." Instead of this, the box is ordered returned to the shipper, and found all right, and everything in good order; an expense, to be sure, but yet less than the losses thousands suffer every year.

He sends things to some customers who complain of such "stunted looking squabby things;" and to others, who rebuke him for such tall "whip switches." One hates the "miserable cutting;" the other the "old stunted plant." The seeds

which were sown too deep, or too shallow, or too early, or too late, or were too wet and rotted in the ground, or too dry to sprout at all, were "very bad;" just as often, probably, as the really old seeds sold by some sharp dealer rotted because the "customer did not know how to manage them."

There are real causes of complaint on both sides, and many imaginary ones. We have endeavored to point them out in a spirit of "charity towards all and malice towards none." Many are the results of haste, thoughtlessness, and want of system which consideration and intelligence would remedy; and others could be avoided by dealing cautiously with ignorant or stranger customers or nurserymen.

EVERGREEN SHRUBS.

The past winter has not been very injurious to coniferous trees and shrubs, but the few broad-leaved Evergreens we have, suffered terribly. Most of the *Euonymus japonica* have been cut to the ground, but they grow so readily, and can be raised so cheaply, and do so beautifully in partial shade three years, at least, out of four, that this Winter's trial will not ruin its reputation forever.

Evergreen shrubs are a great want with us, yet those we have are not appreciated. The *Mahonia*, though suffering always a little, gets through tolerably well. There are two good things, however, which are almost neglected. One, the *White-berried Pyracantha*, is quite hardy, which the common one is not, and which makes a compact bushy growth, which the common one is not either. It is one of the most desirable hardy Evergreens we know. Though not a shrub, as a hardy Evergreen the *Yucca filamentosa* is particularly striking. Large masses of it have an admirable Winter effect, and its sweet waxen flowers—pure as the purest lily—make it seem strange that we do not see lots of it in every yard.

ORCHIDEOUS PLANTS.

We have often directed attention to these rare and curious plants, and we are quite sure, if all our readers could have seen the two beautiful specimens of *Dendrobium nobile* exhibited by Mr. Wm. Joyce, the excellent gardener to Mr. Baldwin, which were exhibited before the Pennsylvania Horticultural Society at its February meeting, not one but would want to have something of the kind, if any means were at hand to manage or care for them. These magnificent specimens were grown in 12-inch pots, and the stems neatly tied to light stakes. On one

plant we counted 125 flowers, and on the other 110. This variety is not of difficult culture, and any one who has a greenhouse could manage it; though, of course, not one in a hundred would be able to produce such superb plants as what Mr. Joyce is able to exhibit.

EARLY FLOWERING AZALEAS.

There are some varieties of Azalea which have a natural tendency to flower much earlier than others, although they may be grown all alike under the same circumstances. Passing through the greenhouses of Mr. Buist recently, we saw a very beautiful white one that was in full bloom, while most of the others did not appear to be near opening by perhaps several weeks. It is worth while to mark such varieties particularly, and we should be very glad if Mr. Buist or others, who have large collections of Azaleas, will give us lists, with colors, of these desirable early kinds.

HIRAPS AND QUERIES.

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

☞ The Editor cannot answer letters for this department privately.

THE MADRAS RADISH is one of the latest novelties in the English market. It is advertised—Price in sealed packages, *three seeds*, half a guinea (\$2.50). *Seven seeds*, one guinea (\$5).

This has been "kicking about" over the United States for the past twenty years. The pods are a little more succulent than the common Radish, and may be eaten as radishes or pickled as Nasturtiums. Our people have never seemed to value it at 10 cts. a packet. It will be curious to see whether they think more of it when introduced from England, as it will, no doubt, be next year at a high figure.

ACKNOWLEDGMENT OF FLOWER SEEDS. — We are indebted to Mr. Benjamin Dowling, Seedsman, Market St., Philadelphia, for a lot of the rarer kinds of flower seeds out this season. We take every opportunity to learn everything that is going on for the benefit of our readers, but with all we are apt to miss some. We are, therefore, obliged when any of our friends kindly help us to see for ourselves, at home, the things that are to be seen.

FLY ON THE EGG PLANT. — A correspondent says, dusting the plants with gypsum or plaster drives away the insect and improves the growth of the Egg plant.

WINTERING CABBAGE. — "An Orange County subscriber," N. Y., writes: "I came here first from England last year, and got a place near New York, where I saw for the first your *Monthly*, and have subscribed to now. I do not quite hold with your remarks on Gardeners, but yet would not stop your paper for that, as your other subscribers will. But let me say, I think, to do right, you should not advise any interference at all with a properly learned gardener, who understands his business, and who has studied in the best places in the old world. To show how this interference works, I may tell that last Fall, when the time was come to save our cabbage for Winter, the boss laughed at the pit I was making for to save them, and bid me plant them in the ground with their heads in and the roots a sticking out. I thought at once he was running me, but when I saw he was in earnest about such a foolish idea, which he probably read in some paper, I thought it my duty to stick out against such absurd notions of dictation, and of course I left. I think it is quite plain that when a gardener knows his business, it is not fair to interfere with him. For those who do not know, your remarks should have the good will of all gardeners."

[Our friend writes kindly, and we have, therefore, given him full space to be heard, merely correcting the spelling for him. Why cannot objectors always write in as good temper? Still we think his instance an unfortunate one, and he had better not "have left;" for without any "running of him," the plan he speaks of is as good a one to keep cabbages as to keep situations.]

GRAPES IN POTS. — In order that the discussion of this subject may not extend far into the future, we insert the following here, although rather later in the month than we usually pass to the printer matter for this column:—

"CLEVELAND, O., March 14, 1866.

"Friend Meehan: Permit me to ask a few questions of your intelligent correspondent, Mr. Gerald Howatt; and as it is fashionable to cast a slur on any one who has anything to sell, as if thereby there was a *prima facie* presumption against their honesty, permit me to say I have not had half enough vines for my customers, and that without any advertisements. I have an axe to grind, however, for the benefit of my customers, that is, to grind out the *best* vines I can for them. I hope I may be honest in that. But I have no razor to sharpen, for I do not believe in saying or doing sharp things. 1st. Is there anything medicinal in

the pot to promote the health of the vines? 2d. Does the coiling of their roots promote their health and vigor? 3d. If the plants be placed the same distance apart in the pots and in the border, why should they be better sunned and ventilated in the pots than in the border? and why taller and more stocky than the other under the same treatment? Why should not the *freight* be as much on the one as the other? Cannot as much moist earth or moss be put around the one as the other if the plants are equally heavy? I suppose, of course, you shake out the pot earth and spread the roots before planting. Suppose the nurseryman should decline digging you one here and there, but require you to wait, as I suppose any nurseryman would, until they were all taken out with their roots whole, could you not then select from the assorting table as well as from the pots? What does 'echo answer?' Presuming that it is as little labor to plant, take care of, and dig from the pot as the border, do both cost \$44 per 100 to make the difference you state? Were the borders you refer to under glass or in the 'open air.' I presumed, from your reference to 'open air' in your first paragraph, that it was out-door culture you are running a tilt against. I have grown them in pots under glass and out in the open ground, putting them out as soon as I feel secure against frost, in rows 30 inches apart and 6 inches in the row, and cultivate them as I would corn, pinching back in season to ripen wood and roots, and, with varieties not much subject to mildew, I can make better plants, shorter jointed, stronger, and heavier both in top and root, for they will correspond usually, by fifty per cent., out doors than any I have ever raised or seen raised in ordinary pot culture. I can get all the roots too. If I can get a plant with well-ripened wood that will weigh four ounces instead of one grown in pot weighing two ounces, I must beg leave to prefer it, as I have no doubt Mr. Howatt or any other sensible man would.

"Yours very truly,

"EDWARD TAYLOR."

[It was our fault that Mr. Howatt's reflection on the motives of those who may have anything passed into print. We are quite sure Mr. H. meant no insinuations against any one, but we have never permitted any one to impeach another's motives in our pages; and if we had supposed that the remark might bear that construction, as we now see it could, it would have been struck out.

We scarcely think the remarks of our correspondent, Dr. Taylor, require any reply from Mr. Howatt. The case stands thus: Persons who, perhaps,

have very indifferent vines grown in greenhouse borders, contended that they were much better than good plants raised by others in pots. Mr. H. asked in his way, as Dr. Taylor has in his, "whether there was anything medicinal in the border more than the pots," and "whether crowding the plants in a border was better than giving them room in pots?"

The open-air question is a sort of side issue, and resolves itself into the form exactly which Dr. Taylor has put it. "If one can get a perfectly healthy vine weighing four ounces instead of one not weighing two ounces," it will be preferred by any one without inquiry whether it was raised in a pot or in the open air. It is evident that superior healthy, and in every way desirable plants can be raised in pots, as also can they be in the open air—which way is best depends on circumstances.

Dr. Taylor and Mr. Howatt do not differ so much, we think, as they may appear to do at first thought.]

DOUBLE FLOWERS.—A. H., Rochester, N. Y.—Will you please inform me, through the *Monthly*, whether there can be any such a thing as a double Dahlia, a double Zinnia, or any other double composite flower, botanically speaking?

[The florist has two kinds of double flowers. One as in the Rose, where the stamens are transformed into petals; the other as in the plants our correspondent refers to, where the petals or corolla are considerably developed beyond their normal form. In composite flowers like Dahlias and Zinnias, the stamens are very seldom transformed as they are in the Rose and other double flowers, but they are, no doubt, sometimes. It is, at any rate, not impossible. It makes this difference, that where "double-ness" is the result of transformation of stamens and pistils, there can be no seed; but where, by a mere extension of the corolla, it makes no difference to its reproductive organs.]

HAWTHORN AS A LIVE FENCE.—A Rockford correspondent of the *Canada Farmer* finds the Hawthorn to make a beautiful fence, but the borer is so destructive on it that it must needs be abandoned in that part.

THE FUNGUS ON BLACK KNOT, Dr. Fitch says, is a species of fungus of the genus *sphæria*. The learned gentleman, however, does not decide, we believe, whether the swelling is by a disease, and on which the fungus afterwards grows; or whether it is caused by the fungus.

WILD SAGE.—A. H., Rochester, N. Y.—I see in the February number, that a correspondent asks what the plant is that is so abundant in our Western country, that is there called Wild Sage, with some account of its uses, etc. It is *Salvia lyrata*.

It is also called Meadow Sage, Cancer-weed, Lyre-leaved Sage. The *Salvia*, as also the whole order to which it belongs, is pervaded by an aromatic, volatile oil, and a bitter principle; the former rendering them eminently tonic, cordial, and stomachic; the latter, where it prevails, febrifugal. None of the species are poisonous.

[We did not suppose our correspondent could mean any *Salvia*, least of all *S. lyrata*. Since we wrote that paragraph we note that Dr. Torrey, in one of his works, speaks of some of the western *Artemesias* as "Wild Sage," and we suspect this is the plant the lady refers to.

We are, nevertheless, obliged to our correspondent for his suggestions.]

CURIOUS SPORT IN A CAMELLIA.—Mr. Zimmerman, of Lancaster, writes: "I have now opening a *Camellia* that I consider a curiosity. There are three flowers growing out of one flower, making four flowers on a single stem. The first is a regular *Camellia*, out of which there is no other flower growing; and out of the second flower there are two distinct flowers about half blown."

[This is a very curious and interesting case of vegetable morphology.]

AVERAGE AGE OF A DWARF PEAR.—J. T. N., La Porte, Ind.—"Permit me to ask you a question through the columns of your valuable *Monthly*. What is the average lifetime of a Dwarf Pear tree? allowing that it is well and properly cultivated. By a dwarf tree I mean one growing on Quince stock. There is considerable diversity of opinion amongst the members of our Horticultural Society on this subject, but as we have no person amongst us that has any long experience in Pear culture, we would be pleased to learn from one who has.

[Those kinds which bear very freely and young may not live as long as less productive ones. If we take the average of a Dwarf Pear, including all the risks from borers and other external injuries—ignorance of culture, and so on—it would make the average very low indeed, perhaps 10 years against a Standard's 30. But if a tree have the care and attention it requires, we believe the Dwarf Pear will live at least two-thirds as long as a Standard—say 25 or 30 years.]

ROOTS OF CALYPSO BOREALIS.—If any of our readers who have this native orchid growing near them would send us a few roots, we should be very much obliged.

CORRECTION OF MR. HEAVER'S ARTICLE.—Which reads about Gansell's Bergamot, "the Pear of Pears," should read "their Pear of Pears."

THE GREELY AWARD.—We find all of our contemporaries, that have noticed the matter at all, agree with us in expressing surprise that a Pear not so far grown generally anywhere should be recommended for general cultivation. Our remarks on the Committee's course with the Iona Grape led it to retrace its steps. May we not hope that it will now do so with the Hovey Pear? It is to be regretted that Mr. Greely's good intentions should meet so poor a result.

OUR ADVERTISEMENTS.—The increasing popularity of the *Gardener's Monthly* cannot be more pleasantly attested than by the immense amount of advertisements sent to it. The publisher has no agents canvassing for advertisements, and very rarely, indeed, is any one solicited for them. They are the willing orders of good business men, who do it because it pays them.

Our last month's issue we think contains the heaviest amount of advertisements ever given in one month's number by any Horticultural or Agricultural Journal on this Continent—*forty-four pages*. But this is not all, as our pages, being wider and longer than is usual to Horticultural Journals, admit so much more matter.

To sum up in square measure, there were in our last over 2000 square inches of advertising, by over one hundred advertisers.

FLOUR OF BONE.—Our excellent correspondent, Mr. Walter Elder, acknowledges the receipt, last year, of some "flour of bone" fertilizer, sent him for trial by Messrs. Briggs & Bro., of Rochester, in consequence of some remarks on Fertilizers in one of his articles. Mr. Elder finds it a valuable substance, and very justly remarks that there is nothing like the *Gardener's Monthly* for making things known to the Horticultural community.

The advertising columns of the *Monthly* alone are worth the price of the subscription to every Horticulturist, as it is a fair reflex of the condition of the market all over the Union.

DISEASE IN THE IVY.—“Can you tell me, through the *Gardener's Monthly*, what is the cause of, and remedy for, a white gummy substance which exudes from the leaves of my English Ivy? It is kept in a sitting-room and treated the same as those of my friends, who never heard of anything like it.

“A LADY READER. Boston, Mass.”

[We should be obliged by specimens, as we have never seen any disease of the kind in the Ivy.]

CONCENTRATED MANURE.—*J. W. M., Lewistown, Pa*, asks us “to recommend the best concentrated manure for garden purposes.”

[It is difficult to say what is the best. They are all, when honestly put up with the ingredients they profess to be made of, good in certain soils and situations. For an average of circumstances, we believe the “Plant food” of Alexander Harrison, of Commerce Street, Philadelphia, as good as any offered.]

ADVERTISING.—“I was sorry to see in the March number of your valuable *Monthly* an article by Gerald Howatt made the occasion for advertising the business of certain parties near New York, Mr. Howatt's disclaimer to the contrary notwithstanding. Let every system of culture have a fair hearing, and then stand or fall on its own merits; but pray do not let any article on the science of Horticulture be the pretext for advertising anybody. It is certainly out of taste, and scarcely fair towards those who pay you for advertising their products in the proper place. Ordinary newspapers puff everybody and everything indiscriminately for which they receive large pay, which the public are supposed to understand; but we scarcely look for such a course in a magazine of Horticulture, and sincerely hope you will not allow your columns to be prostituted to such unworthy purposes.

“A. C. FISH, Rochester, N. Y.”

[We have zealously guarded our columns against the nuisance of free advertising. Not one cent has ever been received for anything outside of the advertisers' columns directly or indirectly, or ever will while the present editor has charge of it. When we read Mr. H.'s manuscript, our first impression was to run our pen through the sentence of which complaint is now made; but on second thought, it was clear the writer was not advertising anything of his own; that the parties he named were, all of them, liberal advertisers in the regular columns of the *Monthly*, and consequently not men who would wish to take any unfair or indirect ways of advertising; and, lastly, the pot culture of the vine is so

distasteful to thousands in the country, that instead of considering these men favored by the notice, we supposed, from this point of view, the majority of our readers would think we were injuring their business—holding them up to public scorn rather than to public favor; and thus we concluded Mr. H.'s remarks not under the general rule we had formed against gratuitous advertising.

It is not always easy to draw the dividing line between giving gratuitous advertising and giving information. For instance, if we were to say, as we could with a clear conscience, that some of the best layers of Delaware Grapes we ever saw were at Mr. Fish's establishment, it would bear the construction of a free advertisement, and is yet very much like information we have every day to lay before our readers.]

FALL AND WINTER APPLES.—A correspondent very justly calls our attention to the fact that the Fruit-growers' Society of East Pennsylvania has probably transposed Rhode Island Greening from the Winter to the Fall list, and Tallman's Sweeting the other way. Certainly Tallman's Sweeting is ripe in this region before Rhode Island Greening.

OBITUARY.

DEATH OF GEORGE M. BEELER, OF INDIANAPOLIS.

We are quite sure that the whole Horticultural body will hear with deep pain of the death of this promising Pomologist and most estimable young man. Though but twenty-five years of age, his knowledge of some branches of Pomology was so complete and thorough that he was an admitted authority in many cases where those who had spent a long life in the study would hesitate to decide. So scrupulously accurate was he in forming an opinion and coming to a conclusion, that whenever he gave a positive decision in a disputed case, it was generally held sufficient to say “that George Beeler said so.”

Like most really intelligent men, he was modest and unassuming in his manners. The great object of his life was to see, and learn, and understand; and no labor or expense deterred him from satisfying himself on any point on which it was possible for him to come to a conclusion. Very few such earnest, active, intelligent young men have appeared on the Horticultural stage, ready to take part in the great drama of life with so much promise of vigor and successful usefulness.

In most cases, when a successful Horticulturist departs this life, we mourn him as a loss to the

whole community collectively; but in this case the individual feeling prevails over all, for no one who ever knew George M. Beeler but will feel for him as much for a brother as for a friend.

He was but twenty-five years of age, and died during the first week in March, after a short but suffering illness, having been for some months previously indisposed.

DEATH OF AN ENGLISH LANDSCAPE GARDENER.—Mr. Joshua Major, a well known and talented author, died near Leeds, England, on January 26, aged 79.

Books, Catalogues, &c.

THE AMERICAN EXCHANGE AND REVIEW. Published by Fowler & Moon, Philadelphia.

The February number of this Magazine is before us, and we find in it a paper on "Our American Sylva," by a distinguished authoress of Philadelphia, being the twelfth and concluding one of the series.

The particular object of the papers is to draw attention to the necessity of protecting, planting and preserving trees throughout the country; but so many incidental matters are referred to that the paper is, in fact, a miniature history of forest trees and forest laws.

In this one paper reference is made to the influence of trees on purifying the atmosphere, the beauty of woodland scenery, and the influence it exerts on a healthy mind. Some of the laws of the ancient Anglo-Saxons against injuries to trees, some of which are incorporated in the Magna Charta—the protest of New England men against the king's "broad arrow" being set on their best timber trees—the enactments in Germany, and the influence of all of them on preserving forests are dwelt on. In the history of wars it appears that in times past it was as much the object of our ancestors to destroy forests, as we would now destroy railroads. In one of the invasions of Scotland, 24,000 men were set to destroy the forests of Caledonia.

The importance of speedy attention to the preserving of our forests is ably pointed out, and tree societies recommended which will offer prizes to those who plant or set out the greatest number of trees successfully. Railroads and canals could increase their profits immensely by planting trees along contiguous ground. If the Pennsylvania Central Railroad would plant along its line on both sides Oaks or Locust, the value produced would be

\$2,534,400 in five years; but this is, no doubt, calculated on an average of a number of years, as the first five years they would not, of course, be worth \$3 per tree, or 60 cents per year per tree. The calculation is based on some English figures, which take a mile of English oaks, planted 10 feet apart, as the basis. One thing is quite clear, independent of any data, and arguing from every-day facts—the railroad companies would find it much to their interest to investigate this matter. Timber must get scarce along the line of railroads in time, and those which, in 20 years, have their own grown sleepers, will have a great advantage over those which have not.

A very interesting part of the paper is that devoted to the legends connected with trees. The protection which they give to the birds, which add so much to our pleasures by their songs and motions, and to our wants in aiding in keeping down the hordes of noxious insects which otherwise would swarm and eat up everything—and passing from this to the street trees of Philadelphia, a well-merited rebuke is given to the abominable practice, now so prevalent, of heading off or "Pollarding" the trees.

It has not been our good fortune to meet with so instructive and entertaining a paper on a rural subject in any purely literary Magazine since Donald Mitchell's "Wet Weather Work" in the *Atlantic Monthly*, and we should like to see it published in a separate form as that was, that it might form a companion volume to it in our sylvan libraries.

New and Rare Fruits.

FOOTE'S EARLY ORLEANS PLUM.—Chas. Downing, in a communication to the *Horticulturist* respecting this new Seedling, says: "Through the kindness of the Hon. Asheal Foote, of Williamston, Mass., I have received specimens of a new Seedling Plum, raised by himself from seed of Wilmot's Early Orleans, and although not so rich and luscious as some of the later varieties, it is of very good quality, and, taking into consideration its other good qualities—earliness, hardiness, productiveness, and freedom from rot—it will, no doubt, prove a valuable acquisition to fruit growers, especially for early marketing. Description—size medium, roundish, inclining to oval, without suture; a mere dot at apex; skin very black, covered with a blue bloom; stalk of medium length, inserted in a large, deep cavity; flesh greenish; moderately juicy, with a sweet, rich, pleasant flavor; quality very good;

adheres to the pit, which is oval and thin. Young wood slightly downy, greyish. Tree hardy, vigorous, spreading, very productive.

MR. PARRY thus compares two Blackberries much spoken of:—

“The KITTATINNY has the habit of continuing long in bearing, yielding its luscious fruits through a period of six to eight weeks. We have eaten of it fresh from the vines on the 30th of August. This property will make it a favorite with the amateur and private gardener, who grow a little fruit for family use, and would not desire many bushels of blackberries at one time; and if the garden should be already stocked with New Rochelles, they can easily be rooted out, when the *Kittatinny* shall become so well established as to furnish a full supply of better fruit for house use.

The Wilson's Early has the habit of ripening its crop mainly together, and is principally over in two weeks, and before the height of blackberries come on; like the early pea, its whole crop is gathered at a few pickings, while the price rules high, therefore it does not come in competition with any other Blackberry, but is ahead of them all in market, and brings more money. Fruit growers who already have as many acres of the New Rochelle as they can properly attend to, would not want many more ripening at the same time, yet they might with great propriety add another field of an earlier variety to come ahead and precede the New Rochelles in market.

WASHINGTON AND CHENANGO STRAWBERRY APPLE.—When at the New York State Fair at Utica, last September, I noticed several plates of apples from different persons, and all marked Washington Strawberry, which, from all I can learn from various sources, is incorrect, and should be Chenango Strawberry.

Washington Strawberry originated with a Mr. Whipple of Union Village, or Greenwich, Washington Co., N. Y., some 15 or 20 years since; while the Chenango originated in the town of Lebanon, (formerly Chenango) now Madison Co., N. Y., on the farm of Mr. Buckley, and said to have been raised from seed, or brought into notice by a colored man named Frank, some 50 or 60 years since. The young wood of Chenango is much lighter colored than Washington. Both are vigorous growers, and said to be good bearers, producing fair, handsome fruit.

Washington Strawberry is roundish oblate, inclining to conic. Skin yellowish, mostly covered

with stripes and splashes of deep crimson. Flesh yellow, a little coarse, crisp, tender, juicy, with a brisk rich subacid flavor. An excellent fruit of its season for all purposes. Core, medium. Ripe, Sept., Oct.

Chenango Strawberry is oblong conic, angular. Skin whitish, striped and splashed with light crimson over half or two-thirds its surface. Flesh white, very tender, juicy, with a pleasant mild subacid flavor, of very good quality, and much prized in the neighborhood where it originated. It is probably too tender for a market fruit. Core large and open. Ripe, Sept., Oct.

The following are the synonyms, of the Chenango Strawberry: Frank, Buckley, Strawberry, Jackson, and Sherwood's Favorite.—C. DOWNING in Country Gentleman.

NEW PEARS.—The following new varieties have been described by Mr. Hovey, recently in the “*Magazine of Horticulture*,” viz:

GOODALL.—Raised by S. L. Goodall of Saco Maine, from the McLaughlin. Size large, about three and three-quarters inches long, and three and a half in diameter: Form oblong obovate, large at the base, slightly contracted in the middle, and very obtuse at the stem: Skin fair, smooth, green, changing to a yellowish green at maturity, thickly dotted or traced with russet about the crown, broadly tinged with pale red in the sun, and indistinctly speckled with russet dots: Stem short, less than half an inch long, stout, and inserted without any cavity, with a slight projection on one side: Eye small, closed, and set in a small, contracted, puckered basin; segments of the calyx short, sharp, stiff, projecting: Flesh yellowish white, coarse, melting, slightly buttery, with a vinous, refreshing juice, and pleasant flavor: Core medium size: Seeds medium size, rounded, short-pointed, plump. Ripe in November.

PRESIDENT.—Raised by Dr. S. A. Shurtleff, at Brookline, Mass. Size large, four inches long and four in diameter: Form roundish, slightly obovate, with an irregular or uneven surface, somewhat ridged or angular, largest in the middle, narrowing towards each end: Skin slightly rough, dull pale green, very broadly tinged with pale red in the sun thickly russeted at the base of the stem and around the crown, and rather evenly and thickly overspread with tracings of russet and very large conspicuous russet dots: Stem short, half an inch long, quite stout, curved, and obliquely inserted in a small, compressed, moderately-deep cavity: Eye medium size, open, and slightly depressed in a

small, not very deep basin; segments of the calyx, short, stiff, projecting inwards: Flesh yellowish white, coarse, slightly buttery, melting, and full of a refreshing, slightly vinous, and pleasantly perfumed juice: Core large, long, slightly gritty: Seeds medium size, shortly-pointed, full light brown. Ripe in November.

THE LANSINBURG APPLE.—This long keeper was shown at the recent meeting of the Ohio Pomological Society, at Columbus. The history of the fruit is involved in obscurity. The name would indicate its origin in Rensselaer county, N. Y., but it is only found in a few western collections.

The tree is exceedingly vigorous, hardy, healthy, and quite productive; form upright and rather branching, making a thick top; young branches almost thorny. The fruit is of medium size, globular cylindrical, unequal or somewhat lop-sided and often higher on one side, somewhat angular. The surface is smooth, of a deep green, bronzed dull red, until ripe, when the ground color becomes a rich yellow, and the shading, which is seldom in stripes, assumes a brilliant carmine, making a fine contrast, and presenting a very attractive appearance through the polished surface. The dots are gray and slightly indented; on a light ground they appear black, and have green bases. The basin is abrupt, deep, and folded or plaited; the eye small and closed. The cavity is acute, irregular, rough smutchy, or russet; stem short, inclined, knobby; core, small rather open; seeds, numerous, large, brown; flesh, yellow, breaking, firm, not very juicy; sub acid, rich. March to June.

This variety is valuable for its fine keeping qualities, and beautiful appearance in the spring and early summer, when it is very saleable at fancy prices. It sustains very little loss in keeping, as it neither shrivels nor decays.—Dr. JOHN A. WARDER, in *Ohio Farmer*.

SIX BEST SWEET APPLES.—Mr. Suel Foster, of Muscatine, Iowa, gives, in the *Prairie Farmer*, as his selection:

1st. *Sweet June* comes up to the requirement; good tree: hardy, early bearer, productive; fair, handsome, sweet, very rich and good. August.

2d. *Golden Sweet* is a little inferior in some respects, but most of the above description will answer tolerably well for this variety. Two weeks later.

3d and 4th I don't know. The *Sweet Pear Apple* I am grafting for a late Fall Sweet. It will come up to the requirements if it proves produc-

tive. It is a hardy and very good tree. The *Haskel Sweet* may answer. The Messrs. Avery, of Burlington, Iowa, have as good a sweet apple as I ever ate, called *Jersey Tender Sweet*. Season, September. It is green, covered with a slight russet, medium size, pyriform, very tender and rich.

5th. *Winter Sweet Paradise*, a most beautiful, upright, hardy tree; a very rich, handsome apple. December and January.

6th. *Sweet Romanite*, small, but hardy and productive. Season next year.

The *Hartford Sweet* has proved the most profitable apple tree out of one hundred varieties I have in bearing. It is only half sweet, or as I would say, sub sweet. I have planted the *Hartford* to raise apples for both man and beast, for cider and vinegar. As a nurseryman, selling trees, I find that sweet apples are not popular. I believe if every farmer having eighty acres, would plant one acre of sweet apple trees, for his cattle, hogs, horses and sheep, he would find it more profitable than two or three acres of corn.

THE WARFIELD APPLE, raised by Suel Foster, of Iowa, is a very beautiful Apple, and worthy of a place in every Nursery and Orchard if it does as well elsewhere as here. It is a very thrifty and beautiful Nursery tree. It bears young. Color, waxen yellow with a blush; season, Aug. and Sept.

New and Rare Plants.

THE *Journal of Botany*, Dr. H. F. Hance, Ph. D., describes the following plants from Southern China:—

NASTURTIUM CANTONIENSE.—Found in the environs of Canton, on the margin of a pond. Its nearest ally is *N. hispidum* (De Cand.), from which it differs in its nearly entire leaves, subglobose fruit, and much longer pedicels.

HYPERICUM SAMPSONI.—A very distinct species, found on Muddy river banks in the neighborhood of Canton. It has opposite connate leaves, and differs from its allies chiefly in its perfectly smooth-edged sepals.

SENDUM DRYNARIOIDES.—Found in damp crevices and hollows of limestone rocks in the province of Kwangtung, growing along with *Pilea peltata*. An extremely pretty and delicate plant, with white flowers of exceeding tenuity.

OPHIOXYLON CHINENSE.—Met with by Mr. Sampson in a palm grove in the province of Kwang-

tung. It approaches nearest to *O. serpentinum*, but has a darker-colored bark, narrower and more attenuated leaves, looser cymes, and green, not red, pedicels and calyces.

THE *Botanical Magazine* contains figures and descriptions of the following:—

RHODODENDRON HODGSONI.—One of the grandest of the many fine species that adorn the Eastern Himalayan Mountains, discovered by Griffith in Bhotan in 1838, and gathered by Dr. J. D. Hooker in the alpine valleys of Eastern Nepal and Sikkim at elevations of ten to twelve thousand feet. It flowered in the temperate house in Kew in April of last year. It is one of the finest of all the Rhododendrons in foliage; the leaves often attain 18 inches in length; they are coriaceous, glossy above, but clothed with silvery or ferruginous tomentum beneath. The flowers are broadly campanulate, the color pale purple.

LÆLIA GRANDIS.—This fine *Lælia* first made its appearance in the establishment of M. Morel, of Paris, where it flowered in the spring of 1850. In the year following it was exhibited at one of the great London shows, and then disappeared until reintroduced in 1864 by Messrs. Low and Co., who received a few plants from their collector in Bahia. From the same locality, and about the same time, specimens were sent by Mr. Williams to the Royal Gardens, Kew, where one of them flowered finely in the summer of 1865, when it was drawn by Mr. Fitch, and the result is a faithful portrait of this beautiful species. Peduncle two flowered, sepals nankeen colored, petals rather wider in the middle than the sepals, and of the same color, lip whitish with purple veins.

Domestic Intelligence.

DESTRUCTION OF CANADA THISTLES.—Every one knows how great a pest to the country the Canada thistle is, but it is not every one who knows, in like manner, that there is a caterpillar which devours immense quantities of this noxious plant. Let us see, then, what this friendly caterpillar is like, that we may know better than to kill him, when he next comes in our way. From May until September (for there is more than one brood in the year), there may be found feeding on the leaves of the Canada thistle, and other similar plants; specimens of this caterpillar, either solitary, or two or three near each other. Each one spins for itself a slight web, on the upper surface of the leaf

which it draws over in such a way as to form a shelter for itself. Under this covering it devours the skin and pulp of the leaf, without touching the under skin; and when all within reach is consumed it removes to another part, and constructs a new habitation, of larger dimensions, of course, to correspond with its own increased size. When full grown, the caterpillar is about an inch and a half long. It is dark-brown or blackish, with narrow yellow stripes along the back and sides; its head is black and its feet reddish; on each segment except the first, there are several whitish, black-tipped spines, varying in number from two up to seven, the greatest number being in the middle. The chrysalis is about three-quarters of an inch in length; it varies in color from light grey or ashen to brown, and has three rows of golden or silvery tubercles on the sides and back. It is usually suspended from the bars of fences or other objects near the plant on which it has fed. In this state it continues for about a fortnight in the summer—in the autumn for nearly a month—and then comes out in the form of a beautiful butterfly, the Painted Lady. (*Cynthia cardui*, Linn.)

The fore-wings above are tawny, with the middle almost rosy red, and spotted with black, while the tip is widely black, spotted with white; the hind wings are principally tawny or reddish, with three rows of black spots near the edge. On the under side the fore wings are marked as above, but the red is much brighter, and the black paler; the hind wings are dappled with brown, white, and grey, and have near the outer edge a row of five beautiful eye-like spots, the two middle ones being the smallest.—*Canada Farmer*.

BUILDING FOR THE ACADEMY OF NATURAL SCIENCES.—It is gratifying to report that there is every prospect that the \$100,000 required for this building will be raised. \$31,950 has been subscribed already; among the names received are the following for \$1000 each:

J. S. Haines, Joseph Jeanes, Samuel S. White, Alfred Cope, J. B. Budd, Geo. W. Tryon, Jr., George W. Childs, W. P. Wilstach, A. E. Borie, H. P. McKean, Chas. S. Coxe, M. Baird, John Rice, Joshua T. Jeanes, Wm. Bucknell, S. Morris Waln, Thomas Sparks, F. R. Cope, Thos. P. Cope, Ed. Roberts, J. G. Fell, Clement Biddle, Jay Cooke, Isaac Barton, Samuel Jeanes, E. W. Clarke & Co.

Foreign Intelligence.

THE POMEGRANATE.—Pomegranate is probably a compound word signifying "grained or kernelled apple." At first thought on the subject, any one accustomed to etymological analysis would consider such a derivation satisfactory, but in Bailey, and other authorities who follow him, there is a suggestion of another, in these terms—"q. d. *Pomum granatum* L., or *Granatense*, a kernelled apple, or of Grenada in Spain." But there are not wanting authorities who affirm that instead of the fruit being named from the place, the place has been named from the fruit, Grenada being so called from being the province in which the grained fruit was first cultivated when it was introduced to Europe from Africa. The capital of the province has a split pomegranate for its arms, which is seen on the gate-posts of the public walks. Grenada is undoubtedly a grand place for the pomegranate; and still further east and the various species of pomegranates are found abundantly. The best brief history of the pomegranate is to be found in Phillips' "Pomarium Britannicum," from which the facts narrated in Paxton's Magazine, and indeed in most recent papers on the subject, are derived. The numerous notices of the pomegranate in Scripture prove it to have been held in high repute in ancient times in Syria and Palestine. It was selected as one of the principal sacred symbols, and the Jews still use it in the decoration of their synagogues. The Greeks esteemed the fruit so highly that it was classed among the principal productions of the Elysian fields, and there is a pretty story of Ceres beseeching Jupiter to restore her daughter, Proserpine, in which the pomegranate figures in a way to show that it was considered fit refreshment for the gods. The tree was introduced to Rome from Carthage in the days of the murderous Sylla. Pliny, the 21st chapter of his 13th Book, gives a description of the tree and its fruit. He enumerates nine varieties, (Book 23, chapter 6) and says the bark of the sour kind was used by tanners and curriers, and the flowers of other kinds for dyers to dye cloth.

The pomegranate was first cultivated in England in the year 1548, during the reign of Henry VIII., and Phillips says, "I find it mentioned among the trees that fruited in the orange-house of the unfortunate Charles I." Gerarde raised plants from seed in 1597. Lord Bacon recommended wine made from pomegranates for diseases of the liver; and if wine could not be had, the freshly expressed

juice might take its place. The fruit, when in perfection, consists of succulent pulp, pleasantly acid and sweetish, and is used for the same purposes as the orange; but it is said to be far more beneficial in cases of fever and other diseases for which usually oranges are prescribed. The rind of the fruit and the flowers contain a large proportion of a wholesome astringent principle, and are the parts principally used for medicinal purposes. The high reputation of the pomegranate has caused a demand for it wherever it can be cultivated; and nowhere out of its native country has it been so successfully grown as in the West Indies, where the fruit is of the finest quality, and is produced in great abundance. The dwarf red kind is grown in the West India Islands as a hedge plant, and makes a splendid appearance when in flower; it is indeed so beautiful that it ranks high among the ornamental stove plants grown in this country.—*Gardeners' Weekly.*

EARLY GREENHOUSE WORK IN ENGLAND.—From the early vinery many of the plants placed there to force, will be coming into bloom, and these will in themselves be amply sufficient for frequent changes of the plants in the rooms, during this and next month. We may, in addition, calculate on *Tropæolum tricolor*, *Jarritia* and *Brachyceras*, which are handsome on trellises, and so is *T. azureum*; also *Lithospermum fruticosum*, *Acacias grandis* and *juniperina*; and *Chorozemas*, *Kennedias* too, bloom finely on trellises at this season, and we may expect some this month from cool houses. The stove will afford a few forced plants, and the other winter-flowering plants will come in, or continue in bloom until this period, it being understood that the stove is not so much occupied with summer as with winter-blooming plants.

All plants coming from the rooms should be again placed in the structure they were taken from. If from the stove, they should be rested for about a month, and may then be cut in, and have the plots plunged in the early vinery, which will set them going. *Camellias* and *Azaleas* done blooming, to be placed in the early vinery to make wood for the next year's early blooming, which as regards the first, will, in the current year, occur in October and onwards. The first lot of *Gloxinias*, *Achimenes*, and *Gesnerias* will be forward, and be placed in their blooming-pots, more being introduced for succession. Pot variegated *Begonias*, and the better kinds of Hardy Ferns; they are charming for in-door decoration in Summer. A few more plants for forcing, may be introduced to fill up blanks in the early vinery. Sow *Primulas* and *Cinerarias* for an early bloom.

See that *Aphelandra cristata*, *Porteana*, *Leopoldi*, and other winter and autumn-blooming plants are cut in, and cuttings made of all winter-blooming plants if still delayed. Pot those previously struck, and grow them on; many of them will do well in the early vinery. Pot more *Fuchsias*, and put in cuttings of the early plants for autumn-blooming. *Impatiens Jerdoniae* is a good stove plant for autumn work; plants now potted and grown in the stove will be found useful. Select a few of the better kinds of bedding plants, as the different variegated and *Zonale Geraniums*, and especially *Nosegays*; also *Verbenas*, *Petunias*, &c., potting and growing them on in the cool vinery. They will be useful when the *Pelargoniums* are over. A few plants of *Pinks* and *Carnations*, potted now, will, though they come in little earlier than those in the open ground, be none the less sweet in vases in the house. *Epaerises* to be cut and placed in a cold frame. Cuttings of *Heliotrope*, to furnish plants for winter and spring blooming, to be inserted forthwith; also of tree *Carnations*. *Sowmore Cockscombs*, *Celosia pyramidalis*, the first *Balsams*, and *Thunbergia alata*, for training to sticks in the form of pyramids, or any other shape. They will do now in the early vinery. Encourage plants of *Sericographis Ghiesbreghtiana* in a cool house. Let them grow freely until June; then stop the shoots, repot, and grow on until October; then place in the stove. They will bloom in November. *Fuchsia serrulata* and its varieties *floribunda* and *alba* are valuable winter-blooming plants. Cuttings put in now, in a little heat, soon strike root; grow on until July, place out of doors, then take up in September, and place in the early vinery, which will by that time be cool enough for anything. Sow *Mignonette* in pots, for autumn blooming, in a cold frame; it will require to be potted when the plants are large enough to handle, and grown on in a frame until June, to be then placed outside in an open, but not very sunny place. Remove to the frame in September, keeping stopped and potted through the summer as the plants grow. *Rhodanthe Manglesii* and *Acroclinium roseum*, are nice Everlastings for pots; seed may now be sown in a little heat. *Cypripedium insigne* and *venustum* are of the best of winter-flowering plants; plants of them should be potted and encouraged in the stove or vinery now at work. The old *Phajus grandiflorus* is a glorious plant for blooming in early spring; it should have sweet soil, plenty of drainage, and a place in the stove to make growth, with abundance of water and moisture. The very best of room-plants, *Richardia*

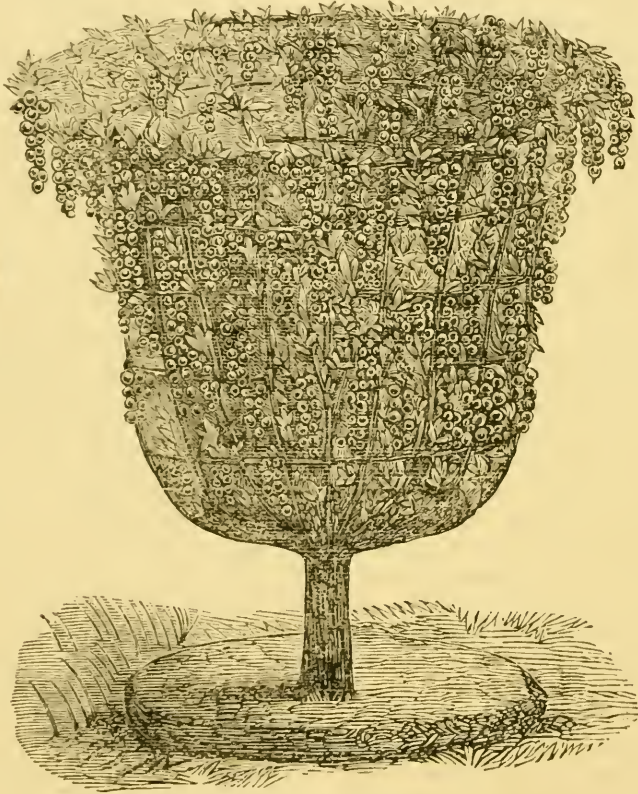
rethiopica, should be potted, and increased, if practicable, by dividing the roots. It does well in a cool vinery. Cuttings of *Chrysanthemums* to be put in; they make nice plants for autumn. *Inga pulcherrima* to be cut in, and grown in a frame; endeavor to have the shoots well ripened before or by autumn. It will require potting after it breaks. *Hoitzia coccinea* to be cut-in, and potted after the new growths are an inch long; it is a stove plant.—G. ABBEY in the *Cottage Garden*.

THE HANOVERIAN METHOD OF TRAINING FRUIT TREES.—The cultivators of my country, such as practice the training of fruit trees for entertainment, and the beautifying of gardens, have much skill in training the growth of trees to resemble objects of taste, and these trees do contribute to the entertainment of the garden. It is no use to make these trees if they are old; they must be young; it is the sapling, we say, which bends, and if the sapling is trained in its first growth, the dome or goblet may be made perfect in a few years. When the sapling is planted one year after the graft has grown, if it is a grafted tree, the shoot is pruned to about three of the lowest buds, and the shoots which these make are trained out in the forms which they are to have for ever. But the goblet or umbrella need not be made until the tree has grown two or three years, and then it must be made very strong, to last for a long time. When the trees are growing in the summer, the shoots must all be tied into their places with soft worsted, and in winter must be much pruned, or the lowest parts of the branches will become bare of shoots, which is much detrimental to the beauty of them. As they are much pruned, and by training so as to place every shoot outside—for these trees have no shoots inside, and are never crowded, so that light is not obstructed as in common bushes—they get very hard, and are soon covered with the little hard twigs which afterwards bear fruit. These trees exhibit all the fruit at once, and most beautiful are pretty cones and towers with hundreds of ripe pears hanging all round.

The most beautiful of these kinds of trees, are the currants and gooseberry trees, which are most easy to grow. They are first struck with only two buds on the shoot, which are trained horizontal the first season. The next winter these two shoots are cut back half their length, which causes five or six shoots to grow the next spring, and these are also trained out by means of sticks to the horizontal. The next year the urn or goblet is formed with some iron and wood hoops; it is made very

strong but light, and as the tree is young a few stout staves are thrust into the ground to keep it in its place; these are removed when the stem is stout enough to carry all the weight of the frame and the fruit. Having been trained out horizontally, it is easy to form the bottom of the cup in a neat manner, as I have shown in the pictures of two of my best bushes, which are very complete; and if they had not been trained horizontal, as if the tree was to be made like a table at first, I

would not be able to make them a good form at the bottom. We know by the bottom of the cup if the cultivator has been much skilled in his work, because it is easy to have plenty of shoots and fruit up the sides of the cup; but if they are not trained horizontal at first, and be pruned much in winter, the lowest parts are bare, and the hoops are much more conspicuous than the leaves and fruit.—Correspondent of *Gardener's Weekly*.



[THE GOBLET-SHAPED CURRANT.]

Horticultural Notices.

AMERICAN POMOLOGICAL SOCIETY.

In conformity with a resolution adopted at the last meeting of this National Association, the undersigned give notice that its eleventh session will commence in the City of St. Louis, Mo., on Tuesday, September 4th, 1866, at 11 o'clock A. M., at Mercantile Library Hall, and will continue several days. All Horticultural, Pomological, Agricultural and other kindred institutions in the

United States and British Provinces, are invited to send delegations, as large as they may deem expedient; and all other persons interested in the cultivation of fruits, are invited to be present and take seats in the Convention.

And now that the rainbow of peace has again spanned the arch of our Union—now that our southern brethren, after a painful separation of years, are again to be united with us in full fellowship and communion—now that our meeting is to be held for the first time on the "Father of Waters," in the Great West,—we invite all the

States and Territories to be present, by delegation, that the amicable and social relations which have heretofore existed between the members of the Society, may be fostered and perpetuated, and the result of its deliberations, so beneficial to the country at large, be generally and widely diffused.

Among the prominent subjects which will come before the Society at this session, will be that of the revision of the Society's Catalogue of Fruits. The special Committee appointed for this purpose are now, with the various State and Local Committees, actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections and districts of our country, and this information, in the form of reports, will be submitted to the action of the convention. In compliance with a resolution passed at the last session of the Society, the several State Pomological and Horticultural Associations are requested to compile lists for their own States or Districts, and forward them at as early day as possible, to P. Barry, of Rochester, N. Y., Chairman of the Committee on the Revision of the Catalogue.

Members and delegates are requested to contribute specimens of fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology.

Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with transactions of the Society. Life membership, ten dollars; biennial, two dollars.

Packages of fruits with the name of the contributor, may be addressed as follows: "American Pomological Society," care of C. M. Saxton, corner Fifth and Walnut streets, St. Louis, Mo.

MARSHALL P. WILDER, *President*.

JAMES VICK, *Secretary*.

PENN'A. HORTICULTURAL SOCIETY.

The March meeting of the Pennsylvania Horticultural Society, was held on the 20th, Vice-President Charles Harmer, in the Chair.

The exhibition was not equal in interest to what has been seen in the corresponding months of past years, but there were many things of novel inter-

est and great merit. Mr. F. O'Keefe, gardener to J. B. Heyl, Esq., had one of the most tempting displays of mushrooms we have seen for a long time before the Society,—not merely accidental, but the product of a Mushroom skill. In the collection of Mr. Hibbert, gardener to Fairman Rogers, Esq., was a very fine *Medulla magnifica*, and *Francisca eximia*, both pretty well grown and splendid plants when they are well grown. He also had a flowering specimen of *Scilla ciliata*, a desirable bulb.

Messrs. Peter Mackenzie & Son, who are ever zealous in importing and exhibiting new things for the interest of their fellow members of the Horticultural Society, had on this occasion several novelties; but there were two that must become extremely popular. One *Abutilon niveum* had blossoms like the well known *A. striatum* in form but of a clear and pure white; the other was also an *Abutilon* called *veillarum*, with a long, colored calyx, and rosy pink petals.

He had, also, a dwarf, hardy *Spiraea* called Thunbergii, covered with small white flowers,—the plant growing something like *Deutzia gracilis*. The same firm had a collection of new Azaleas,—One, *Pelargoniflora* was a very fine shaped flower, and showy variety, of a rosy pink color. Another struck us as particularly beautiful, of a light pink, with carmine stripes called *Jacques von Artexella*.

Fortune's new double white Camellia was also on exhibition in another collection, the name of the owner we did not observe. The official report is not yet before us, as we are going to press before they are ready,—but there was a highly interesting exhibition of fruits from Mr. Nycé of Cleveland, and also address from the same gentleman of such value, that rather than pinch in a mere line here, we shall reserve for a future number.

The death of Col. Robert Carr was announced to the Society by Mr. Thomas Meehan, who made the following remarks. The resolution was adopted by the Society,—also that Mr. Meehan's address should be published in the transactions:—

MR. PRESIDENT.—"Yesterday afternoon the grave closed over all that was mortal of one of the founders of this Society,—the last but one still living. Col. Robert Carr, distinguished alike in the arts and sciences,—in the history of our country, our city, and our association,—departed this life last Friday, the 16th of March, at the ripe age of eighty-nine years.

I, who am but a junior member of this time-honored Society, would have preferred that it had fallen to the lot of some one amongst the veterans

in horticulture to call your attention to the fact, who could from personal knowledge of his services in our cause, tell you more than I can do; but it seemed to my fellow members that I, who from an intimate acquaintance of fourteen years, could, at least, testify to his worth, should call the attention of the Society to his death, and show how much the Society owes of its present prosperous existence to the assistance of our friend in times gone by.

Col. Robert Carr, was born in the parish of St. Andrews, in the County of Down, in the north of Ireland. His maternal grandfather, and it is believed his paternal one, were natives of Hanover, in Germany, who joined themselves to the fortunes of the Prince of Orange, following him through the English revolution, to the wars in Ireland, where they settled, as so many of William's soldiers did. His father first came to this country as supercargo of a vessel, which was wrecked and the cargo in which he had a large interest, lost. It preyed considerably on his mind; and in order to retrieve his losses, he determined to settle in this country, went back to Ireland, and immediately returned with his family to Philadelphia. Robert was at this time eight years old. The losses he had suffered however, preyed very much on the elder Carr's system, and in some aberration of intellect, he wandered away and was never heard of more. His son Robert had already received the rudiments of a first-class education, which he sedulously continued to self-improve after the family troubles came on him. He was early put to work and by his own choice was set to learn the printing business, under Mr. Bache, the son-in-law of Benjamin Franklin. He has often spoken with much gratitude of the advice given him by Franklin on the occasional visits of that great man to his son-in-law's establishment. While in this office he set up with his own hands the works of Priestly, and the Poems of Moore written in this country, and always felt a pride in this remembrance of his boyish skill. When a young man, his cousin William Miller, who was one of the chief grocers of Philadelphia at that time, died, and subsequently Mr. Carr married the widow, by whom he had several children, all of whom died in infancy, except John, who lived until thirty-four. Mrs. Carr died in 1808, and Mr. Carr, who had kept on the business with her, sold all out, and the war with England breaking out at that time, he undertook with the money to raise and equip a regiment at his own expense. At the head of his regiment he joined Scott in the operations along the lakes,

distinguishing himself gallantly at the battle of Chippewa, where he had one of his heels shot away while riding his horse, by a cannon ball. He returned from the campaign beggared and worn—\$25,000, it has been estimated poorer than he went,—but which with the generosity which characterized him to his dying day, and which left him scarcely a score of friends to follow him to the grave, he never sought recompense from the country he helped to save. Soon after he returned from the war he married again to the youngest of the two daughters of William Bartram, then proprietor of Bartram Gardens.

From this time forward Col. Carr's career as a horticulturist begins. William Bartram died about this time, and Mr. and Mrs. Carr continued the nursery business at the gardens,—which were, as you know, the cradle of botany and horticulture, on this continent,—which gave American Botany and Horticulture a distinguished position in the literature of the old world; and which was the pride and glory of every Philadelphian for so many years.

At the formation of this Society in 1827, Col. Carr was amongst the first lot of members elected. For several years he was with the elder Landreth, Maupay, and D'Arras, among the chief executive men; and in 1834 was made Vice-President, which office he held many years. At almost every meeting he exhibited something of interest from his garden,—usually leading in the new things. In 1830 he exhibited the Petre Pear, since so famous. He also was noted when the Dahlia first came here, about this time, and set cultivators nearly as crazy as the tulip did the Dutch. When the native wine excitement first originated, he led in that also. His garden was the seat of very large experiments in the vine-growing and wine-making. The Powell and possibly the Delaware, as it is now called, had a cherished home here amongst others, and it is on record that in 1828 Col. Carr exhibited before this Society superior samples of his American Wine.

Sixteen years ago, when the gardens through a series of misfortunes, owing to his liberal spirit, passed away from him, saw a serious blow to horticulture. The history of Bartram, as a source of Philadelphia pride ceased then; and all that remains in the history of its last family possessor—once so famous all over the world—is obscurity and the memory in the minds of thousands of the liberal patron, energetic associate, and kind friend. For many years he acted as Justice of the Peace for his district,—and such was his character for probity and honor, and such the regard in which

every one held him,—that the contending parties forgot in him the favorite maxim that "to the victor belongs the spoils," and regularly re-elected him in continuous succession. It was his boast that he never would allow a case to go to court, if by any possibility he could get the parties to make friends over their quarrels,—and that he never took a fee from any one during his long term of service.

Col. Robert Carr, Mr. President, leaves no relations I believe, to mourn his loss. We cannot, as it is often our painful course to do, send our sympathies to them; but it is a duty we owe to ourselves to engrave on our own tablets our sense of the worth he has been to us, and I therefore beg to move the following resolution:

Resolved, That in the death of Col. Robert Carr, at the advanced age of 89 years, the Society mourns one of its founders, and most active and honored members; and that as marking particularly our sense of his worth, this resolution be engrossed in the minutes, and be published in the regular transactions of the Society.

THE CINCINNATI HORTICULTURAL SOCIETY.

SATURDAY, March 3, 1866.

The Cincinnati Horticultural Society was called to order by the Vice-President, Dr. Whipple.

After the adoption of the minutes of previous meeting, a general discussion was held on the cultivation and varieties of that popular fruit, the Currant.

The following report on this subject was read before the Society, and ordered to be printed:

ORIGIN OF NAME.

The name Currant, I need hardly remind intelligent horticulturists, is derived from, or rather a corruption of Corinth, the small dried Raisin of commerce, which is said to have originated in the ancient Grecian Republic. (A somewhat amusing instance of the corruption of common names recently fell under my observation in a catalogue of one of the most extensive nurseries of Continental Europe; among the list of Currants was Bank Hup; this was a French corruption or translation of Bang Up, a superior variety of Black Currant. The name in the English vernacular is synonymous with our term first-rate).

VARIETIES.

The last edition of Downing's Fruits and Fruit Trees of America contains the names and descrip-

tions of twenty-seven varieties with twenty-one synonyms. A more recent European catalogue has an addition of thirteen varieties not mentioned in Downing, that have been introduced since the last revision of our standard work on Fruits.

As with the Pear, and other species of fruit, the French take the lead in the introduction of new varieties from seed, and the numerous French names appended to the recent introduction of new varieties attest the fact that the Currant is much more prized in France than in the United States. Dana's White, a new variety, originated by the gentleman after whom it was named, and highly recommended by Colonel Wilder, and the Fruit Committee of the Massachusetts Horticultural Society, is the only one of American origin indorsed by competent authority as a valuable acquisition. That so little attention should have been bestowed in this country on this easily produced and most healthy fruit, is somewhat surprising. Is it another instance of the old adage, "Familiarity breeds contempt!" So because the fruit, such as we usually see in our markets, is produced without any effort or attention to cultivation, we fail to appreciate it at its proper value.

ITS USES.

The varied uses or modes by which this fruit may be prepared for the gratification of our sense of taste, as well also as its being in season at a time of year when its pleasant acid is most acceptable to the palate and refreshing to our relaxed system, are strong arguments for its more extended cultivation; for nearly three months during the hottest parts of the summer it can be used as a pleasant condiment or article of food, and it can be preserved in the various forms of jams, jellies, dried or canned, and thus be available at all seasons of the year, and even retain its good qualities unimpaired for several years. With all these good qualities to recommend it to popular favor, I ask again if it is not surprising that so little attention should be paid to so desirable and useful an article of domestic consumption? There are few articles so easily produced that are more gratefully refreshing to the fevered invalid, whose lips are parched with burning thirst, than a small portion of currant jelly to give piquancy to the cooling draught.

I will not undertake to draw a comparison between our domestic currant wine and our popular Catawba and other wines from native grapes, but would remind my fellow-members that many of the mothers of our country feel as much honest pride and self-gratulation in hearing the praises bestowed upon the merits of their favorite beverage as our

friend Mottier, when receiving the premium silver cup awarded at our State Fairs.

Having thus endeavored to show some of the reasons why this fruit should receive more attention than has hitherto been given to it, I will now proceed to detail the

MODES OF PROPAGATION.

Cuttings of the previous year's growth may be taken off early in the spring, some ten or twelve inches long; the terminal shoot should be cut back to a strong, prominent bud; these cuttings planted in mellow ground, well prepared, will readily take root and grow, and the next fall or spring may be planted where they are permanently to remain.

Many writers—practical men, too—Downing among others, recommend disbudding of the cutting previous to planting; in other words, to cut out all the eyes or buds, which would be below the surface of the ground. This is the common practice with English, and I believe many Eastern gardeners, but a somewhat long by experience in this locality satisfies me the practice should not be followed here. I have with one exception lost all my imported standard stock-plants from the attacks of the borer, which perforates the stem and completely eats out the entire centre, or pith, and thus destroys the plant. When the cutting is allowed to retain its lower buds, should one column be destroyed, the plant will throw up strong shoots below the parts injured, which extends generally near the surface of the ground. I suppose from the general adoption of the mode first described, our Eastern and European authorities are unacquainted with the enemy to the currant that we have here.

PLANTING.

Various distances are recommended. I think the best is five by five. This will allow ample room for working and picking. Cultivating may be done by the plow for the first two or three years, after which time the roots near the surface would be liable to injury by that instrument; shallow, surface working should then be adopted, and the plants sustained, and the weeds kept down in early summer by mulching. The currant makes one continued growth in spring and into the summer, but when it once stops, does not break out into a second growth through the summer, hence the importance of stimulating and encouraging a strong and early growth.

PRUNING.

In the early life of the plant the object should be to get a strong, vigorous shoot upon the root. This can be best attained by cutting out all inferior and

twiggy wood each spring, close to the ground, reserving the strongest for fruiting next and succeeding years.

The shoot or shoots left for after-fruiting should be shortened from one to three inches according to its strength, and this will induce it to throw out lateral branches the following season, which should be cut back the next spring to spurs from two to four inches in length; and this treatment should be repeated each successive season until the fruiting stock shows signs of weakness by the production of small and inferior fruit, when, having provided previously a succession stock, the old bearing stem should be cut away near the root.

RED VARIETIES.

Red Dutch; good and productive.

Cherry Currant; very large and productive; needs rich cultivation. Cerise de Tours: resembles the foregoing. La Versaillaise: said to be one of the best. Red Gondoin: fine, late variety. Fertile de Pallnau: very productive. Victoria: I have not found come up to its English reputation. Berton's Seedling, La Hative, Fertile de Angers, and some others, are new varieties I have not sufficiently tested to venture an opinion on their merits.

White varieties—White Grape, the best white table, being less acid than others.

White Dutch, good and productive. White Gondoin, good. White Transparent, White Imperial, Dana's White, are all comparatively little known with us.

Black Currants—This, as a class, is not appreciated in this country as it is in England; Black Naples, Black Bang-Up, and Ogden's Black are the best I have tested.

Gloire de Sablons, is the latest novelty in Currants furnished us by our French friends. It is of an amber ground color, prettily striped with red, presenting, according to the picture description a very unique appearance. Of its table qualities I have no personal knowledge; it has been, however, highly commended.

Respectfully submitted by

WM. HEAVER.

Mr. Vincent preferred the Red Dutch and White Dutch varieties to any others for general cultivation. He had planted his Currants in the spaces between the dwarf pear trees, and had found them to thrive better in a partial shade. This is about the southern range of the growth of this fruit, as it naturally prefers a cooler and moister climate.

Mr. Jackson preferred the Versaillaise variety to any other for its vigor and productive quality.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

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VOL. VIII.--NO. 5.

Hints for May.



FLOWER-GARDEN AND PLEASURE-GROUND.

Flowers in pots and tubs, for adorning roads and gardens, now spring like lovely butterflies from their winter's hiding places. Cellars give forth their treasures, and barns, pits and greenhouses bring forth their lovely things each after its kind.

This branch of gardening has not been enough valued. There are many things, which do not well endure our winter, that are truly beautiful when a little protection is afforded them,—but because they are only half hardy, are not grown at all. The following are well worthy of being grown in this way:

Magnolia fuscata, Pittosporum, Clerodendron Bungei, Hydrangea, Figs, Oleander, pink and white; Pomegranate, single for fruit, and double for show; Bignonia Capensis, Bouvardia triphylla, Oranges, Lemons, Laurel, Bay, Laurustinus, New Zealand flax, Mahonias, particularly *M. Darwinii*, *Euonymus japonicus*, Alocs, Agaves, and others. In very cold climates Peaches, Nectarines, Apricots and Plums might be grown in this way, and would not only charm the eye during the flowering season but add their mite to more material pleasure in a way agreeable to most persons of taste, if not of refinement.

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 any other when it can be obtained. If planted on thin or dry soils, they will not bloom till near the approach of frost, when the chief enjoyment of the Dahlia is lost. It is best, where possible, to plant a duplicate of each kind.

Tuberoses and Gladiolus like a warm rich soil, and may be set out at once.

In transplanting any thing that has roots large enough to admit of the practice, it is best to dip the roots, immediately before planting, into water. This will obviate the necessity of after-watering, and its consequent injurious effect. If the plants appear to flag, shade or put an inverted flower-pot over the plant for a few days; if this do not bring the plant to, it must have water.

Flower-gardening, as we have often said before, 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 may be made by the selection of grasses of different hues, where grass walks are employed. Old stumps or roots may be occasionally introduced in the centre of beds, and covered with green vines, or flowering climbers, as taste may dictate; rustic baskets and vases, and even in many instances where artificial styles prevail, the topiary art may be called in, and good effects result from the use of the knife and shears on certain plants.

Trellisses 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.

In planting extensive flower-gardens, it is best to retain a few plants in pots, in case a frost or other

accident should, by chance, destroy some of those set out earlier.

Pansies and Daisies should be set out in rather a shady and moist place,—not under the shade of trees, as the roots of these dry the soil too much.

The Hollyhock has become one of the most popular and useful of summer bedding plants. They like a rich, warm, and rather dry soil.

The Carnation likes a deep, rich soil; the plants should be raised from layers afresh every year. July is the time to do this.

FRUIT GARDEN.

If large fruit is wanted thinning assists. Strawberries are increased in size by watering in a dry time. Fruit should be allowed to bear only according to their strength. If a transplanted tree grows freely it may bear a few fruits,—but bear in mind growth and great fruitfulness are antagonistic processes.

Handsome forms are as desirable in fruit as in ornamental trees. No winter pruning will do this exclusively. It may furnish the skeleton,—but it is Summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nutriment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always as soon as they appear, such as would push too strongly ahead,—and keep doing so till the new buds seem no stronger than the others. Thus the food gets equally distributed.

Whether Strawberries should have runners cut off depends much on kind and soil. Free growing kinds grow too freely often in rich soils. Allowing them to exhaust themselves and the soil by growing thick together is an advantage, slyer growing kinds would do no good under such treatment. Moist garden soils are rich—but on the whole the most profitable and best plan is the cutting runners off, system.

If there be any Blackberry really earlier than Dorchester, it will be well for those who love this fruit to look out in time and satisfy themselves. They will be in bloom about the end of the month in very early places.

VEGETABLE GARDEN.

“When the first Swallow comes plant dwarf Beans,” Lima Beans and all other Beans. When Beans sprout tie them up to the poles, it hastens their bearing. Sow Endive for Winter, and Drum-head Lettuce for Summer Salad.

Egg-plant, Pepper, Tomato, Brocoli, Cabbage, and a little Celery for early crops may be set out—taking care that the plants should not meet any check from want of water, poverty of the soil, loss of leaves or other kind. A check is a great enemy to early crops. “The first shall be last, and the last first” is often very true in gardening, and at times the facts in such cases would put many an early famed variety out of an undeserved eminence.

Communications.

THE GARDENER.

BY “BLUE APRON.”

I am a gardener, the son of a gardener; my fathers were gardeners, my sons are gardeners. At said business I have been serving my apprenticeship during all my workable life, and in all probability shall continue so for the rest of it. I have had my hand engaged, more or less, in every *department* thereof, from dibbling leeks to forcing Cherries, (I prefer the term to Cabbages and Pine-apples, for various reasons.) Well, what of all this? Oh, not much, only it need be no marvel if I feel interest in every thing pertaining to said “ancient and honorable craft.” The father of everybody was a gardener. Amongst other things, even the name of your *Monthly* should call forth my sympathy. You have chosen a befitting name, and as long as you retain it, and prove true to its association, as you now do, I will never desert the ranks of your subscribers; as I am fully of the opinion it is the plainest, most practical and useful periodical of the kind I know of. The *Horticulturist*, and *Country Gentleman*, and some others, are excellent—very excellent—especially for such as follow their callings—but, I am a *gardener*, Sir—I am!

Were I able, and were it requisite, I would contribute some items to your columns; but as I said, I am serving my apprenticeship; and having failed many times in doing things as some people said they should be done, and growing things up to the prescribed mark of excellence, in quality and quantity; such, for instance, as raising *Oxalis erenata* roots, equal and superior to potatoes; and *Caucasian Cow Cabbage* (I think that was the name,) large enough for each head to feed four sheep for a day, as the recognized authorities of those days so commanded. I have failed, moreover, in more modern times, to raise a regular and full supply of fruits, vegetables and flowers for the use of a genteel

family, their friends and acquaintances, off of one acre of land, or thereby—marketing the surplus and pay expenses. I am afraid, therefore, it would ill become me to intrude upon your columns. But whenever I succeed to my own, and other people's satisfaction, with all sorts of Patent Office seeds and manures, *Dioscorea Battatas* or Potato of *Terra incognita* and a few other *notions*, I will let you know.

Meantime I send you herewith some "*rhyming ware*," although I have grave doubts of its admissibility in your pages; however it is somewhat *in our line*, its aim being to magnify *our calling*. It is written, to be sure, not in legal "King's English;" but this is a land where kings don't reign. Besides it is my venerable mother tongue, and to my certain knowledge, that too, of a very goodly number of your subscribers, mayhap, some of whom have still a relish for the words they spoke "in days o' Auld Lang Syne:"

The long cauld days hae come again,
The ruefu' days o' March,
Wi' hail, an' sleet, an' frost, an' rain,
An' wins that keenly search.

At times it tries a body sair—
Toiling the lang, dreigh hours,
At outside wark, to earn his fare,
Exerting a' his powers.

Delving, aft times wi' aching back
The bushes an' the trees,
Their limbs to prune, or stem to hack,
Wi' fingers like to freeze.

But, wi' it a', I like it weel,
Auld Adam's heartsome trade;
Cheerfu' an' strang it makes me feel,
An' aye ensures my bread.

Midst a' the elemental strife,
Peace reigns within the mind;
Syne, Spring comes aye wi' joyfu' life,
An' sun an' clouds prove kind.

The weaver, snug, sits at his loom,
An' tailor on his board,
But health demands mair scope an' room,
Her blessings to afford.

The learned clerk, an' merchant great,
Wi' fame an' riches rare,
I envy nae their in-door fate
Unblest wi' cauler air.

O, Nature's works—O, Nature's ways!
Hae many charms for me,
I wadna pairt wi' what she pays
For a' the warld can gie.

There's beauty fair in ilka scene,
Music in ilka soun',
Let fields be bare, or clad in green,
Nature still smiles aroun'.

Its gude to be whar' birdies sing,
An' breezes freely blow;
Whar' verdure waves and flowers springs,
An' trace God's han' in a'.

There's inspiration in the blast,
That leafless sweeps the tree;
An' bends the tall, top-gallant mast,
An' stirs the mighty sea.

To Him, O, meditative mood,
Wha' ponders well God's plan
His dealings a', seem wise and gude,
An' fraucht wi' love to man.

MR. SHEPHARD.

BY B. "YOUNG CONTRIBUTOR."

A biography of this excellent man and friend of mine, the Rev. Mr. Shephard, is not attempted here. The writer of this article has the rod of the Editor before his eyes, and has a wholesome fear of it, else he would state and fondly dwell on the many good points in the character of Mr. Shephard,—he would show that this clergyman works not only on the Sabbath, but also on each working day of the week, tending his flock *every* day, with care and self-sacrifice,—that he himself takes the benefit of his own sermons and lives practically up to them; that with him the clergyman is not outside only, but inside too,—that he considers himself and his community as but one variety of the many kinds of worshippers, looking upon all the rest like his equals and his brethren, and deeming them just as good as himself and as his variety under the great dome of the eternal Temple. Nor will I mention the struggles of Mr. Shephard to make both ends of family wants meet. I will refrain from telling how he labors in heat and in cold; by daylight and by lamplight; at such heavy, dull and dry work, as, for instance, Cyclopædias and other job work, for the sake of the indispensable wages. Nor shall I as much as touch on his great erudition, still less on his rare conjugal and social qualities, which so eminently distinguish him and so justly endear him to his friends and to his family.

No, not a word of all this shall be said, or the Editor might, in his wrath, turn me out of the *Gardener's Monthly*, and I would never dare to knock at its door evermore. Besides, and moreover, the readers of the *G. M.* would, in this event,

be sure to lose the Horticultural acquaintance of Mr. Shephard, and they might not forgive me for that; for let it go forth at once, that the amiable Mr. Shephard loved gardens. He could not help it; he loved all nature, how could he help loving gardens? The beautiful to him was ever the Divine. "And," said he, "though we are sent into this world as mortal men, still the mind has been given us; and in the study of the creation around us, and of the teachings of the great minds before us, we shall perfect ourselves and enter the next world as divine angels." Could he help loving nature?

"Good morning to you, Mr. Gripenkurl."

"Good morning, Mr. Shephard, good morning," said Gripenkurl, putting down a couple of Roses which he was going to lift, and coming to the fence. "Pleasant morning, Mr. Shephard; fine weather for bringing the plants into winter-quarters."

And G. smiled whilst he spoke; it always seemed to do him good when Mr. Shephard stopped against the fence when passing. Was there not a brotherhood between them, were they not both good men and lovers of plants? And was not Mr. G. besides of a jolly turn of mind, and round, rosy configuration of body, with nothing at all odd or uncouth about him except his name, and that not *his* fault, but the fault of his grandfather from Brabant.

"Very favorable weather for such operations, indeed. There is a mellowness in the air which seems to belong to our Indian Summer. And there is a happiness in the air, I might say."

"Certainly, there is a happiness in the air, Mr. Shephard; if we had not better say at once it is in us, and not in the air."

"Why, how so, Mr. Gripenkurl?"

"Why, as far as I am concerned, I *am* happy, happy all over. I want nothing except the whooping-cough; no, I mean I have every thing I wish except the whooping cough; that is—I mean—the children have the whooping cough, and I don't want that; I want that to leave. Well, such mornings as this, I come out, see every thing in tip-top order and condition, the season making a long and stately bow before leaving us, and just enough garden work left to keep one pleasantly going."

"That's it, Mr. Gripenkurl, it is the work that keeps you bright and cheery; and maybe, whilst you garner your pots and plants for the winter, you think of the coming spring, when you bring them out again, when they will flower again and show new beauties."

"Well, perhaps I do, Mr. Shephard."

"Believe me, that's it. But now—give my res-

pects to your lady, Mr. Gripenkurl. Good morning."

"Good morning, Sir, good morning."

And the good, long pastor stalked on up the hill, but not a great distance, for there he brought up already before Mr. Skinner's.

Now, the writer's place is just between Mr. Skinner's and Mr. Gripenkurl's, and so,—will I,—I am often obliged to get to know what is going on in the grounds of either neighbor.

"Is that you Mr. Skinner? could not see you for the bushes. Was going to come in, Mr. Skinner, to hear about your Emily's health; how is the young lady getting on?"

"Not very well, Mr. Shephard, not very well. And they have a fire inside, and I can't stand it, and so I came out."

"Let your folks come out too into this blessed sun, Mr. Skinner; your daughter will feel all the better for it."

"That's what I said, Mr. Shephard, that's what I said; but somehow they won't, they *will* make a fire, and stick in the house."

"Well, the garden, perhaps, has no attraction for them, it does not look exactly tidy, I must say. It looks a little forlorn, you'll confess, Mr. Skinner."

"Why, Mr. Shephard, one sees at once you are a Horticultural amateur, ain't you, now? Bless your soul, Sir, you would not have me keep the beds trimmed, and the lawn raked, and all that sort of thing, when nothing grows any more. And you would not have the paths swept, would you? what would be the use of that when the leaves are falling fast and thick as they do?"

"It is strange, Mr. Skinner, but you remind me of Dean Swift."

"Of whom, Sir?"

"Dean Swift, Mr. Skinner."

"I'm not much acquainted amongst clergymen, Mr. Shephard."

"No; after all you could not very well know him, as he is dead a long time now, and was an Englishman, and in England."

"And what of him, Mr. Shephard?"

"Why, he used to travel on horseback through the country. And once upon a time, it was in the fall of the year, he and his servant stopped over night in a tavern. In the morning, after breakfast, they were going to continue their journey; and the servant brought the Dean his cloak, his riding boots, etc., etc. 'I say, Tom,' said the Dean, 'my boots are quite dirty, why do you not clean them as usual?' 'What's the use of it?' said Tom, your Grace knows very well how the roads are, and that

they'd be as dirty as ever, before night.' 'Do you really think so, Tom?' said Mr. Swift. 'I do, indeed, Sir,' answered Tom. After a five hour's hard ride they came to another inn, where they halted. The Dean ordered the horses to be fed, and a pretty good dinner for himself. He was sitting a while in the parlor after dinner, when in comes Tom with a long face. 'What's the matter now, Tom? we shall be off directly. Got the horses fed? got your dinner?' 'Horses all right, your Grace, but I can't get any dinner here.' 'Why not?' 'They say it's against your orders.' 'Why yes, to be sure, Tom, I recollect now I told the landlord you did not want any dinner, for what's the use of it, I thought you would get as hungry as ever before night. And now let's be off, Tom,' said the Dean."

"Excellent, Mr. Shephard, a good joke, I must say; and then Tom, I expect, cleaned his master's boots very nicely the next morning?"

"And ever after, Mr. Skinner, so rumor has it."

"Served the fellow right; the Dean did no more than right. If such notions were to prevail, Sir, there would be no end of ways of applying it; a fellow might say he need not shave but once a year, say at haying time, (and Mr. Skinner laughed horse-like at his own joke) for what's the use of shaving if beards will grow again?"

And whilst he spoke he fumbled at his chin and felt his semi-weekly beard, and as he fumbled he laughed less and less, feeling the misapplication; for sooth to say, Mr. Skinner was not liberal, not even in shaving himself. Mr. Shephard, however, seemed not to notice how the man had exposed himself, and—

"You say right, Sir," said he. "The sun gets up every morning, the tide comes and goes, rotation, system, order, cleanliness."

"That's so Mr. Shephard. System and order; order and system, that's my motto in the tanyard."

"It is the motto of the universe, my dear Sir. Then why not add cleanliness?" (and Mr. Shephard looked hard at the rubbish and litter which characterized Mr. Skinner's place almost as much as neatness did Mr. Gripenkurl's).

"Cleanliness," drawled Mr. Skinner, "is next to godliness."

"And positive religion. Wickedness and dirt go equally well together. Do you know the Chinese?" Mr. Shephard interrupted himself.

"I don't know, but I don't," replied Mr. Skinner, "except they supply us with tea and won't take any trade of us; the heathenish rascals won't take any thing, I understand, but silver, and you know

yourself how scarce that is, and what premium gold and silver have come to."

"True, Sir. And you called them heathens, and justly, for they worship before innumerable idols, images of pure gold."

"And that too raises the premium on the article."

"And their rulers and priests keep the people in darkness. Nevertheless, these heathens beat us enlightened and progressive people of the West at some things."

"Do they, indeed? Why you don't mean China-ware, Mr. Shephard."

"Nothing of trade, I mean they beat us in essential functions of the soul, such as we would fain call the prerogatives and consequences of *our* religion. Take for instance the fearlessness of death. They cheerfully rip their bowels open in obedience to a suggestion of the superior Mandarin; they die all manner of deaths with coolness, with indifference even. One should think *ours* were the privilege not to fear death, and not *theirs*. Again, look at their gardens. I will not take up your time, Mr. Skinner, and tell you how fond they are of plants; what large accessions to our stores of plants they have made us, how much we are indebted to them. I will only remark how trim and neat they keep their gardens,—taste apart—ininitely trimmer and neater than we even do in this country, or in Europe either, and yet we style ourselves the civilized nation. Anomalies, in fact, Mr. Skinner, which I cannot clear up; anomalies all the more startling when we see the number of slovenly gardens in this American country of ours. Isn't it to bad, Mr. Skinner?"

"I always thought so, Mr. Shephard, if I did not always act so."

"Here comes your Emily, Sir. Glad to see you Miss, very glad, you look rather better, I believe. 'Have to be patient,' you say. Of course you are patient; a patient patient. ha, ha—roses *will* bloom, never fear. But you must not stand, you must walk about, so good morning, Miss Emily, good morning, Mr. Skinner."

Mr. Shephard went further on. Perhaps we will again bring up with him.

[Probably our "Young Contributor," in the line of fancy sketches he has chosen, may not be fully up to the excellence desirable in composition of this class. However, it is a very readable production; and will interest our younger readers in horticulture,—stimulating them to order and neatness in their garden management, and laying the foundation of an excellent character in them which, like

the roses the writer spoke of, may blossom in beauty in future years.

We hope to hear again from our young friend—commencing with an interesting scientific note and following with a clever literary sketch, he evidently wields a pen which will ultimately furnish first-class matter for our readers.]

GLASS RANGE AT G. J. WHITNEY'S, ESQ.

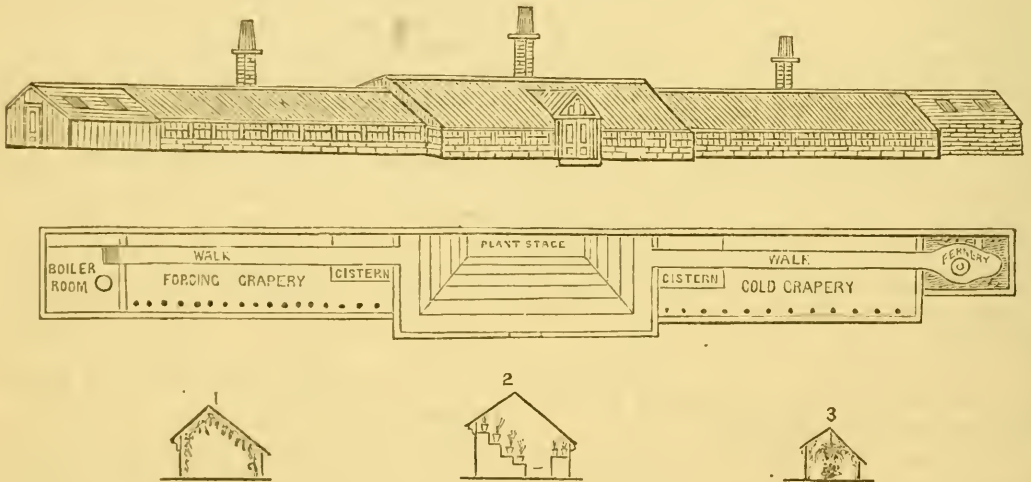
BY JOHN CHARLTON, ROCHESTER, N. Y.

In a recent number of the *Monthly* you gave us a fine plate of the Conservatory at Enville Hall, England. I now send you a drawing of a fine range of glass, recently erected by G. J. Whitney, Esq., of this place. It is a lean-to range, and as the plate shows, plain, fancy appearances not being allowed to dominate at the expense of utility. The workmanship on these houses is, we think, about the best we have seen in America; though plain, every thing is very good; the back wall (brick) is a bound-

dary line, the front of the houses, resting on stone posts, to allow the roots of the vines finding their way outside of the graperies, on which is laid stone capping, the front wall resting on the same. The stage in the greenhouse is built of brick and stone, is well proportioned and no danger of its ever decaying.

The design and drawings was furnished by Mr. Wm. Webster, of this city, who has furnished so many evidences of his good taste and skill as a landscape gardener both in this and other neighborhoods, especially in and around Buffalo, New York. The pipes, boiler, etc., for heating the same was supplied by Mr. Hitchings, of New York City. The whole cost of building and heating, etc., being about \$3700, this does not include the cost of the brick wall at back, this having been erected previous to the houses being built.

No. 1 is end section of Graperies, 2 of Greenhouse, and 3 of Fernery.



NOTES FROM JAPAN.

BY THOMAS HOGG.

To the west and northwest of Yokohama, at a distance of about twenty-five or thirty miles, is a range of mountains, a portion of the great range that extends itself across the Island of Nippon to the western coast. The eastern termination on the plains at the head of Odawara Bay is an abrupt peak, styled Oyama, a sacred mountain, the residence of an evil spirit, to whom an idol is erected on the summit, and to which, at a certain season only in the year, pilgrimages are made.

A large section of the country between the hills

and valleys of the coast is an elevated plain which extends many miles into the interior, and mainly cultivated with the Mulberry for the production of silk, the chief source of wealth to its inhabitants. The town of Hachoji, situated in a large valley that intersects the plain near the base of the mountains a trifle beyond the strict limits to which foreigners are permitted to travel, is the centre of a large silk trade, and of considerable commercial importance, is not unfrequently visited by parties from Yokohama.

To make a visit, not only to Hachoji but a tour through the country to Oyama, had long been my

desire, but it was not until last Summer and Autumn that opportunity presented itself when I had the pleasure of twice doing so, on foot and afterwards on horseback.

My first journey did not extend itself as far as Hachoji, which I visited on my second trip, and otherwise varied in direction from the second. The possibility of a pedestrian tour had frequently been the topic of conversation between myself and several friends, until at last we decided to try it. On the morning of September 5th, we started off, accompanied by two attendants to carry necessary baggage and provision, and took the road direct to the mountain. After passing over the Tokaido several miles, we turned off into a broad and fertile valley, gradually ascending until we reached the table-land. Our course laid directly over the plain, meeting numbers of pilgrims going to and returning from Oyama. We soon met with Mulberry trees, our road passing through an almost continuous plantation of them. The point at which we ascended the plain is about the lowest towards the sea, some eight or ten miles distant, at which the Mulberry is cultivated; beyond it gradually descends into a lower plain cultivated with Cereals. Occasionally we would descend into a small valley in which places the population chiefly reside, but where the Mulberry is no longer cultivated. It is characteristic of the people to choose valleys and retired, shaded nooks for their residences, and the absence of inhabitants on the plains was a marked feature of our journey. In a few instances we met with villages not in valleys, but they are rare exceptions to the general rule. In the afternoon of the day we passed through one of these, which, with its broad street in the middle of it, reminded me of those seen in other lands. Still later in the afternoon we descended into a valley through which flowed a rapid stream called the Sangami River; at the time we crossed, it was but a narrow stream not over one hundred and fifty yards in width, but the wide extent of large pebbles and gravel on either side was an indication of the volume of water and force of its current in rainy season of the year.

As we approached Oyama the land became more undulating until at last we reached the village of Koyasu at its foot, and sought lodgings for the night, which, after some delay, were procured. We had proposed to ascend to the summit of the mountain the next morning, but our intentions were thwarted by a guard of officers stationed at a large gate on the road to prevent the intrusion of obnoxious persons: they were very firm and decided in their refusal to permit us to proceed, and there re-

mained no other course for us but to return homeward. Our route laid up an extensive valley running parallel with the mountain range, between which was a range of high hills separating another smaller valley on the other side of them. We ascended one of these hills, where we had a fine prospect of the whole country before us. The mountains before us were so near that we could plainly discern their features; they are very rugged and precipitous, divided into many sharp ridges, extending from their summit to the base, and only partially covered with forest. In this respect they much resemble the mountains of lower California, as seen from the sea sailing up the coast. This resemblance of the mountains generally of Japan with those of that country has been remarked by others who have had opportunity of observing both, and would point out their common volcanic origin. The vegetation of the country was very similar in character to that of the neighborhood of Yokohama, the greatest novelty being a species of Hydrangea, or an allied genus, found growing on the banks of a stream of water. I had previously found it cultivated by the gardeners of Yokohama and already sent it home.

After following the valley several miles, the road suddenly led up to the table-land again, and once more we were among Mulberry trees. The unvaried character of the landscape only relieved by the mountains on our left, combined with the heat of the day, rendered our journey rather wearisome, and, I felt glad when, in the afternoon, we made a sharp descent from the plain into the valley of the Sangami, and sought refreshment at an inn on its banks. The declining sun after a while admonished us to proceed on our journey to our proposed stopping place for the night. The next morning our road still continued over the plain and between rows of Mulberries. The manner of planting them is by laying out the ground either in squares 80 to 100 feet on either side, or in larger sections of 100 to 200 feet in depth, the trees being planted on the margin at a distance of about 6 feet from each other, forming an enclosure inside of which is cultivated with various crops—Sweet Potatoes, Taro, Beans, Upland Rice, Buckwheat, &c. In cultivating the trees, the system pursued is to confine them to a stem to the height of about 4 feet, and then allowing them to branch off to form a head. When feeding the worms the leaves alone are not gathered, but the shoot of the previous year with all the fresh leaves on it is cut off close to the main stem, and when all are cut off the tree is left to produce new shoots for the succeeding year. In process of

time, by this yearly close pruning, the top of the tree becomes a thickened mass of spurs, but without any apparent diminution of vigor in the tree to throw out new shoots; when first planted they are not subjected to this treatment until four or five years old. They endure the process many years before they show symptoms of decay, and when this begins a new stem is allowed to start from the root, and eventually the old one is cut out.

Subsequent to my trip, I was informed that in other parts of the country the practice is not to allow the Mulberry to form a main stem, but to cut the shoots off close to the surface of the earth. The soil in which they grow is light and black, not retentive of moisture, and can be supplied with but a small amount of fertilizing material owing to the extent of cultivation, the comparatively great distance from the habitations of men, and the necessity of its use to other crops in the valleys. The crops too within the boundaries of the trees were not heavy and showed an evident want of manure in the very limited amount of yield. The almost entire want of cattle, except pack-horses, contributes greatly to this want and consequent decreased production of the soil. The division of the land into small sections, and the mode of planting the Mulberry around them, entirely preventing the application of any but manual labor, must also operate against increased production.

During the last day's walk we were surprised to meet, in several places, extensive plains of uncultivated land covered with short grass and a few dwarf bushes. Their exact area we could not ascertain but one of them, the largest we crossed, was two or three miles in width and more in length. A part of one of them was covered with a dense growth of Shrubbery, and it is probable they all had been similarly covered at some former time; small portions on their margins were being gradually brought into cultivation.

In the latter part of the journey the size to which the Persimmon tree grew attracted our attention. Instead of being confined to farmyards they were growing in the open fields among the Mulberries; whether they were grafted fruit I am unable to say, but I had never before seen any so large, and their dark green shining leaves rendered them quite ornamental.

In the afternoon we struck the head of a long valley leading towards Yokohama, reaching our homes in the evening, somewhat wearied by our walk of over sixty miles and amply rewarded by the new scenes we had witnessed.

My second trip, as I have before stated under-

taken on horseback, presented very little of horticultural interest beyond the first. I observed, in a few places, the Mulberry planted in rows by some innovation of time-honored custom, even in this land of fixed habits. I also met, in many places, growing by the side of water courses, a very beautiful annual Balsam with large flowers of a fine purple color. It appeared to me quite new, and have transmitted seeds of it home, where I trust, next summer, you will be able to judge of its merits yourself.

YOKOHAMA, *January 12th*, 1866.

A FEW NOTES ON 1865.

BY ENTHUSIAST, ADRIAN, MICHIGAN.

BEDDING FUCHSIAS—The newer more delicate varieties do not thrive in the hot suns, but succeed admirably in arbors; plunge the pots. The older and tougher varieties, and a few of the new ones bear the hottest suns, and bloom wonderfully. None surpass the Meteor, whose rich golden and crimson hues are born of tropical heat. The more sun the better. A bed of Coccinea and Meteor will delight the most refined taste.

HERBACEOUS PHLOXES—This is incontestibly the flower for the millions, needing but little care or toil; of most exquisite shades of color; showy, delicate; profuse flowering, hardy, easily propagated; subject to no insect, and very few varieties to any ailment; it is absolutely invaluable. A few hints on its culture may, however, be serviceable. The soil should not be too light or sandy, for the colors are less distinct and bright. Plant in heavy rich loam—mulch with manure in the fall and work this under in the Spring. Too high manuring makes the colors run; yet it will bear a very generous supply. If the climate inclines to be dry keep the soil mulched all Summer with a little mowed clover or litter. To keep up a supply of bloom move the old plants to a new bed in the Spring, and they will bloom at the usual time; while from the roots left in the old bed will insure stalks that will bloom admirably later in the season and down to the severest frosts of November. Of all my varieties I still most delight in Juliet Russel, exquisite white, with a superb scarlet eye.

A hint on making flower-beds will not come amiss to some of our friends. After bordering your beds with Sedum or Thrift, leave a little alley one foot wide around each bed in which you can work with a hoe. No root of grass can then sneak into the bed or border without being surprised on its march. This will save pulling the borders in pieces and

avoid some unpleasant weedings. I have reference, of course, to beds cut in a lawn.

A feature of magnificent interest in any garden is a tropical bed. Plant the better varieties of *Ricinus*, especially *sanguineus*, to the tallest and richest *Cannas*, an abundance of *Gladiolus*, *Lobelia cardinalis*, *Yuccas*, etc. Allow a generous room for the *Ricinus* to expand in; but if the *Lobelia* runs its magnificent scarlet stem up through the foliage of the former all the better. The *Gladiolus* can crowd also, the closer the better. A few *Euphorbias* and *Coleus*, work in well near the border.

The best *Geranium* for bedding purposes I have ever obtained is the *Attraction* (not the *Attraction* of the catalogues), obtained of Mr. Howard, of Utica, who has, this Spring, sent out the new pink *Sarah Howard*. It bears magnificent trusses and is admirable for foliage. I have counted 136 buds and blossoms in one truss; it is also a profuse bloomer.

Another flower adapted to all is the *Tropæolum*. Even a vegetable garden looks charming with its beds of Onions, Beets and Carrots bordered with the common *Nasturtium*. But plant a bed with the newer varieties of *Tom Thumb*, *Crystal Palace*, *Gem* and the delicate shaded varieties, and what for fragrance and color can surpass it. King Theodore, the new black variety, will doubtless be a great acquisition. But let the amateur be sure to make his *Tropæolum* bed of coarse and sterile soil. Manure or light soil runs them to vines and no flowers. The poorer the soil the better.

Can any body give us a rule for raising first-rate *Wallflower*? Mine are by no means up to the English standard.

It may not be amiss to remind amateurs that in setting out their *Dahlias*, *Pinks*, and in fact, almost any plant, they should after having set it, wind a bit of paper about the stalk. Press the paper close into the soil, and let it rise an inch above the soil. This left on for two or three weeks will preserve the plants wholly from the cut-worm.

MISCELLANEOUS SKETCHES.—THE WILD CHERRY.

BY ORCHIS.

"Oh,—there never was yet so fair a thing,
By racing river, or bubbling spring,
Nothing that ever so gayly grew
Up from the ground when the skies were blue,
Nothing so brave—nothing so free
As thou,—my wild, wild Cherry Tree."

BARRY CORNWALL.

With the rapid decrease of the Indian tribes, are the grand old forest trees that sheltered their

homes, rapidly disappearing before the onward march of civilization(?); and yet in all the lapse of years how little veneration or love for these native trees has been practically shown by their white successors. We of the present generation should, therefore, inaugurate a new era in this respect, and prove, by ensuing arboriculturists, that with all our love for the beauties of other lands, we still retain an admiration for those beautiful trees that afforded us shelter in childhood's happy days, and keenest pleasure in manhood's riper years.

These remarks suggested themselves to my mind on reading a spirited little poem on the *Wild Cherry* tree, by Barry Cornwall, and from which the heading of this article was extracted. I advance its claims as an ornamental tree, and desire that every admirer of the beautiful in nature may not overlook its merits. It is of medium size, or occasionally when growing in rich, deep, alluvial bottoms, quite large; spreading in outline and graceful in construction.

The leaves are lanceolate and serrate, bright glossy-green in color, and very handsome. But its greatest attraction is during the month of May,—it is then in its glory. Every short branch is terminated by a raceme of pure white fragrant flowers, and frequently so numerous as to appear like a perfect mass, at a short distance.

About August the fruit, which is a small globular drupe, is ripe, and is of a dark purple color, very bitter to the taste, but with a pleasant flavor. It is consequently much sought after by the numerous vendors of patent medicines, that "cure all the ills that flesh is heir to;" as well as entering into the formation of those beverages that are too frequently meted out to thirsty frequenters by "mine host" of every little groggery in the land. To such a base use has the fruit of a valuable tree been applied, when its worth in the *materia medica* is of no mean order; the bark also ranking as an excellent tonic. The timber is of excellent quality, and highly prized by the cabinet-makers for its hard, cross-grained texture, and pale reddish-brown color; it likewise takes a beautiful polish.

The caterpillars are very fond of the leaves of this tree, and, if not removed when first noticed will completely strip it of every vestige of vegetation. Their destruction, however, is quickly and readily performed by fastening paper or rags (sprinkled with some inflammable fluid, such as turpentine or coal oil) on the end of a long pole; when lighted and placed directly beneath their nests, they are destroyed in an instant. The robin is exceedingly partial to the fruit of the *Wild*

Cherry, and during the month of August they may always be found in large flocks, in the close vicinity of these trees. This fact is well known to our sportsmen, who are more fond of destroying one of the best "insect removers" than they are grateful for the advantages derived from its labors towards encouraging perfect crops of fruit.

This species is the *Prunus serotina* of Ehrhart, but long known as the *P. Virginiana* of Linnæus, until Professor Gray pointed out the error. It belongs to the *Padus* sub-genera; and until the somewhat recent change was called *Cerasus Virginiana* and *C. serotina*. It must not be confounded with the true *Prunus Virginiana* of Linnæus, which is the Choke-cherry, a tall shrub, producing bright red fruit. The Wild Cherry is found mostly on low moist grounds, in close proximity to streams of water, and although it will succeed on high, elevated situations, its greatest luxuriance is secured by planting it in the former localities, when accessible. We repeat, that it is well worthy of the care and respect of all lovers of trees, and particularly of our own cultivators in this country, and is only one of the many native trees that have been neglected heretofore,—not, we trust, from a decided wish to ignore their merits, but simply from a careless habit that we are all apt to acquire,—a longing for novelties of which we read glowing descriptions, but which, in the majority of cases, prove miserable failures when tested on our lawns.

The "moral of our tale," and what we wish to impress upon our readers, is, to study the habits and characters, as well as the manner of all the productions of our soil; notice the many little peculiarities incidental to each; the favorite haunts and objectionable features; and in the end, he who accomplishes this will learn to love our trees and plants for themselves alone, and will find new beauties, within their construction, that he was altogether unaware of. Oh! American planters, let not a mania for the trees of other lands entice you from the allegiance that you owe to the production of your native soil. Beware of too great a longing for the uncertain plants of warmer climes, and gather into your collections those native trees that are the pride and glory of your own native woodlands.

GROWING GRAPES OUT OF DOORS.

BY A SUBSCRIBER, WASHINGTON, PA.

We have read attentively several articles that have lately appeared in leading Horticultural papers, in relation to growing hardy Grape-vines in "broad borders" and "in pots." From the tone of these

articles it would seem that aside from these two systems there was no other way of producing *good vines*. Doubtless there may be good vines produced in "broad borders" also "in pots." It is not the use of either plan, but the abuse of it, that should be ignored; but more uniformly *good plants*, and we think *better*, can be and are produced every year by *starting* under glass, growing in pots until fibres are induced to start, then after frosts are past, planting them in rows three feet apart, and ten inches apart in the rows; one such plant well grown, is worth two "pot plants," as we are prepared to show, having them side by side for the last two years with plants grown by a strong advocate of "pot plants," from whom we have already heard, if I mistake not. The "pot plants," though of more vigorous growing variety than their neighbors in the next rows, are far behind in health or size; some have actually dwindled away. I neglected to say that the pot-grown plants were marked "extra," and were also "extra" in price.

We send you, by mail, a sample of the average of vines produced last year from single eyes by the plan mentioned. Should be glad to have your opinion of it.

It is well known that the majority of vines grown in "broad borders" are under glass as well as those grown in pots, and for economy to the producer they are grown too close together under both systems; they may make canes "four to six" feet high in either case, if "tied and nipped," and will ripen their wood. The canes will be weak or strong, in proportion to the space between them, and the cleanliness of culture. We repeat, therefore, that good vines may be produced by either system, but we think more uniformly good plants would be produced, when grown in the open air, as spoken of with *clean culture*; "tying and nipping," though probably they cannot be produced as cheaply as "broad border" plants, but much cheaper than those grown in pots.

We venture these few remarks, if any of them are worth notice, give them to your readers.

[The roots were very fibrous, and some of them 5 feet long. The plant strong, weighing 3 ounces. No one could wish better Concord. We cannot help thinking our correspondents misapprehend one another. We do not think any of them assert pot vines to be *better* than good vines raised out of doors; but that *good* pot vines are better than *bad* out-door ones. There are many kinds which no one could grow out of doors equal to these Concord. In that case pot plants may be better.

The whole of this controversy arose, as we understand, from the opinions of some, that "*pot plants are good for nothing.*"—Ed.]

ON THE MOVEMENT OF SAP IN THE SHELLBARK HICKORY.

BY JOHN TOWNLEY, MOUNDVILLE, WIS.

In the fall of 1864 I cut down three trees of the Shellbark Hickory after the nuts had fallen, but while the leaves were yet green. They were allowed to remain as they were felled until the approach of winter, when the branches and upper part of the trunks were cut off. The butts being too heavy to load in a wagon were left until we could use the sleigh. A deep snow fell which remained late, and the logs were consequently not removed until most of the snow had melted away.

On passing them on a sunny day, when the stumps and the upper parts of the logs were bare, I noticed that sap was oozing from the stumps, and that on the south side especially there was a quantity of froth which showed that air as well as fluid was escaping. On examining the logs I found that sap was exuding from them also, most from the latest formed layers of wood, gradually lessening in quantity towards the centre; many of the oldest layers of heart-wood being dry. As the sap was sweet and seemed as if it would flow from the logs, I placed a platinum crucible, I happened to have by me, under the end of one of them, intending to evaporate the sap to see if the hickory would afford sugar as well as the Maple, but only a few drops of a viscid and very sweet fluid were collected.

In the last week of 1865 I cut down another tree of the same species. The branches were at once cut off and the trunk was cut into four lengths. On the 8th of January I was led, by something I had been reading, to examine the transverse section of a very dry piece of oak wood, and as there appeared something very different in the arrangement of the tissue than I had seen figured or described, I was led to go, axe in hand, to the woods for other specimens, and thus came across the hickory I had recently felled, and was somewhat surprised to find that now, in the very midst of winter, the tree being severed from its roots, and the temperature below the freezing point, the sap of the hickory was fluid and in motion. At sunrise on the 8th the temperature was 10°; towards noon the wind was southerly and the sun shining brightly, but not able to melt snow where the edges of patches rested on bare earth. Up to this time very little snow had fallen, the ridges of corn land being bare, and

on the 15th of December when a grave was dug in the town, it was found that the frost had penetrated the ground about two feet deep, and from that time to the 8th of January there were eight days when the temperature was at or below zero. From a branch of the hickory I cut a piece 7½ inches long, and 1¾ inches in diameter, this I took to the house to see what would be the effect of a higher temperature on the flow of the sap, and whether I could ascertain by the aid of my lens from what part of the wood the sap issued. The room was heated by a stove and the sun was shining freely and warmly through the two south windows. I held the wood in a slanting position, near one of the windows, and so that the sun could shine upon it. The sap began to flow almost immediately the wood was brought into the room, and seeing that it was going to run off, I held a saucer underneath it, and drop followed drop in quick succession; I did not count them, but judging by the quantity obtained as compared with that of subsequent trials, there would probably be about twenty. The drops seemed limpid as water as they formed and fell, but of a pale straw color when several had collected in the saucer. This sap was not viscid to the touch, and though sweet, not of that concentrated rich sweetness I had tasted that day on the trunk, and on the logs and stumps of the trees cut down the preceding year. When the sap had ceased to flow, the surface was wiped dry, and the wood placed on the window sill; on examining it near noon of the following day I found that nearly all round where the wood and bark joined, an irregular band of the viscid, concentrated sap had issued. On directing my attention first to that part where it was in greatest quantity, it appeared as though it had come from between the wood and the bark, resting about equally on both; but, on tracing further, I found minute drops of this fluid which did not touch the wood and which had evidently come from the bark; still further on I found a part about ⅔ths of an inch long where the bark was distinctly detached from the wood, and on this bark there were small drops of the thick fluid but none on the wood. Several minute dots of fluid were noticed about mid-way between the pith and the bark, on the apparently compact wood between the concentric circles of open vessels (vasiform or pitted tissue), which mark each year's growth, but in no instance issuing from these vessels.

Near noon on the 9th of January I again visited the hickory; the day was densely overcast and no sap was flowing. I found that the trunk measured 26 feet long and was partly hollow, and that so far

as stains caused by the running of the sap may be taken as evidence, sap had apparently issued in greatest abundance from the second cut of the trunk; there were ten dark stains at each end where sap had run down the wood; there were no such stains on the stump nor on the butt end of the first cut, but some of the sap-wood had been evidently wet with sap; more had flowed from the upper end, and more from the lower end of the third cut than from the upper; there were only four stains on the top end of this cut, and one had not reached the pith; there were no stains on the lower end of the top-most cut, but sap had evidently oozed from the wood; the upper part of this was shaded from the sun by branches which were laid across it, but the others were alike, and freely exposed. From observations on the wood of a tree, since cut down, I found these stains were caused by the trickling down of sap from the upper part of recently formed layers of sap-wood, across the heart-wood and older layers of sap-wood which were, at the time, dry and from which no sap had oozed.

I cut down another hickory on the morning of the 16th of January; on the 10th, 11th and 12th the temperature was 32° at sun rise, 17° on the 13th, 8° below on the 14th and 20° above on the 15th. The weather was cloudy throughout, with light showers of rain and sleet at first, and a howling storm with much snow on the two last days. On the morning of the 16th the temperature was 7° the wind blowing fiercely from the west, the sky cloudless and brilliant. The tree leaned to the northeast, and the trunk was first cut half through on that side, no sap was visible; before I had cut half through the opposite side, I noticed that sap was springing from four or five of the last formed layers of wood at the southeast corner. When the tree fell the trunk was supported in a slanting position by the branches, the butt end resting on the stump, the southeast corner of the cut-surface being lowest. I took two nearly equal pieces of a branch from this tree into the house; one I set up as nearly perpendicular as it would stand, in a corner of the window where the sun could shine upon it, to ascertain if sap would flow from the upper part when in that position; the other piece I held on my hand as before, the top part of the branch being lowest. These were taken into the house at 9 h. 45 m., and at 9 h. 53 m. the first drop fell, and ten others as follows: 9 h. 54 m., 55½, 56½, 58, 59; 10 h. 1 m., 3, 4½ and 10. Sap had issued from the piece set in the window sufficient to trickle two or three inches down the bark. Both of these pieces had a lateral branch which had been lopped off and

no sap had flowed from them, owing, apparently, to the wood being sheltered. Another piece which had two side branches cut off, showed sap only at the lower part, this was a clean solid cut, the upper part and the two side branches were sheltered. A branch about three inches in diameter had been cut half through on one side, then turned over and cut through on the other side; one was a clean smooth cut, the other had shattered the wood, the sap issued from the part which was solid, but not from the other; there is an apparent dampness but no sap flows. Sap, however, will flow if there is merely a crack in the wood, it will also ooze from pieces of the trunk when split as for stove wood, providing the part whence the sap issues is compact and solid.

On visiting the tree about two o'clock I found the sap flowing freely from both the stump and the trunk, and that an *icicle of sap* about $\frac{3}{4}$ of an inch wide, and one inch long had formed on the southeast corner of the trunk, and sap was then flowing over and dropping from it. After sundown I found the wood still moist. I detached the icicle of sap, for such it proved to be when taken into the house. From the 16th the temperature continued so low that no more sap issued from the butt of the tree until the 23d. On the 17th the temperature, at sunrise, was 1°, on the 18th 8° below zero, on the 19th ?, and on the 20th 14° below zero, and remained below all day with brilliant sunshine. On the 21st it was 10° below, and on the 22d 8° below. On this day, the temperature at the time being 5°, I cut a branch from the tree and took a piece into the house to see whether and how soon after exposure to this protracted low temperature the sap would flow, and in 8½ minutes the first drop fell. This branch had grown more vigorously than any I had previously examined, it was of ten years growth and measured 2½ inches in diameter, the sloping surface of the cut being 3¼ inches; the last formed layers of wood were also wider than the central layers; this afforded me a better opportunity of determining from what part of the wood the sap first appeared, and by directing my attention to this from the first movement of the sap, I found that it issued first and most abundantly not only from the most recently formed layers, but from the circumference of each layer; I mean that of the layer of wood last formed, the sap started from the part next to the bark, and in each preceding layer from the part adjoining the circle of vasiform tissue of the succeeding years growth, so that there were at first, bands or zones of fluid alternating with dry spaces.

A piece of branch from which the sap had ceased

flowering, was put upon the snow outside; another similar depleted piece was placed in the cellar; they were brought into the house again on the following day, when sap oozed from the bark but none from the wood.

Another piece of branch, about 15 inches long, was cut in two immediately after the sap had ceased flowing and again brought into the house, but no sap appeared on the newly cut surface.

Two pieces of a branch were cut early one morning, one was laid across a plate in the warm room, the other was put into a room without fire, and with windows only to the W. and N., and in which water would have soon frozen. When examined at noon, sap had run from both ends of the former, the latter had remained quite dry, but the sap sprung from it soon after it was exposed to a higher temperature.

On the 23d of January the temperature about noon was 14°, and I noticed that globules of sap had started on several layers of the wood on the S. E. side of the butt end of the trunk, and that these globules were as viscid and as sweet as the sap from the bark, but of a paler color, looking very like small drops of a thick solution of gum Arabic. Nearly every drop contained a cluster of small air bubbles. These drops were seated on the compact wood, between the circles of vasiform tissue. From the stump the sap appeared in greater quantity and distinctly most from the circumference of such layer of wood.

(Continued in our next.)

TREATMENT OF DAHLIAS.

BY J. P. NORRIS.

We believe that we do not exaggerate when we state that more *imperfect* specimens of Dahlias are seen than of any other flower. This is almost entirely due to errors in their treatment. We are sensible of our lack of experience with this class of plants, and only take up the subject because we have seen but little written about it in the *Monthly*, and because we feel that we may be able to offer a few hints that may prove of benefit to the Horticulturist.

The Dahlia is, perhaps, one of the easiest of all plants to degenerate. This is owing to two reasons—first, that the root is often allowed to increase in size, and is not properly divided; and second, that they are frequently planted too near together, and the pollen of one plant impregnates another; an imperfect flower being the result in future seasons. Of this latter assertion we are not positively sure,

but it is the only reason that we can see to account for the alarming change in color in the flowers of Dahlias planted near to each other.

If a Dahlia root is allowed to increase in size from year to year, it is almost certain to produce inferior flowers. The roots being so very large has so many sprouts that each sprout chokes its neighbor, and, like a hill of corn, not properly thinned out, the result of the whole is inferior. A medium sized root will produce much finer flowers than a very large one. But it is possible to go to the other extreme and make the root too small. This is frequently done by dishonest florists who are too eager for gain. If you are buying a new and rare Dahlia, however, you must not expect to get a very large root. In the latter case it is advisable to allow the root to expand all its energies on its growth and not allow it to flower the first season.

Again, many Dahlias are much injured by allowing them to flower as soon as they show any inclination to. All buds that appear while the plant is growing should be cut off; and although you deprive yourself of early flowers by this process you secure much finer ones in the end. And who would not have one perfect flower than a whole bunch of imperfect ones?

Very many Dahlias are injured by planting too early in the season. They spring up and make a rapid growth and are in flower in July. The sun being too hot for them at that time the flowers are necessarily imperfect. We are of the opinion that from the first to the fifteenth of June is quite early enough to plant. Dahlias when planted at this time, flower in September and October, when the rays of the sun have lost a great deal of their power. Besides, in the fall there are comparatively few flowers and it is then that Dahlias are appreciated; but when they come in the full height of the flower season, when roses and other finer flowers claim the attention, they are very apt to be forgotten or overlooked. The fall is undoubtedly the time for the Dahlia.

During the Winter, Dahlia roots may be kept best in some cold grapery that is unoccupied, or, if the owner do not happen to have a house of that description, the cellar of a house, where the mercury never goes below 40°, answers admirably for the purpose. They should be spread on the floor and kept constantly turned over to prevent sprouting. In fact the same treatment that answers for the potato, during winter, is just the thing for the Dahlia.

When you are going to plant them, separate the roots into parts consisting of one, two, or three

tubers, according to its size. Before taking them up the color and name should have been marked on them, so that you can plant them with regard to their color, and not indiscriminately as we have seen them done.

We may be mistaken in our views of the cause of the Dahlia degenerating, and if so will be happy to be corrected through the columns of the *Monthly*.

THEORY OF COLOR ON HARDINESS.

BY D. W. ADAMS, WAUKON, IOWA.

In regions like Pennsylvania, where the climate is comparatively mild, the hardiness of different varieties of cultivated trees and plants is a subject of considerable interest; but to us, of the extreme northwest where the cold of Winter is so terribly severe, absolute hardiness in tree or shrub is the very *first requisite*. All other qualities are secondary in importance to this. During the last nine years I have grown fruit trees by the 100,000 and had them frozen to death by the 10,000 and had other 10,000 so injured by freezing as to be utterly worthless. Beside the *discouragements* attending this destruction, the loss pecuniarily has not been small.

In view of these circumstances you will readily believe that I should be more than ordinarily interested in the discovery of some *rule of general application* by which the hardiness of trees might be approximately ascertained without resorting to experiments so costly in time and materials.

When Dr. Stayman first advanced the theory that color might be employed as a guide, I at once determined to ascertain by actual application to *practice*, whether it was sufficiently correct to be of *value* to the *practical cultivator*; and most reluctantly I have been obliged to decide that it is not of the smallest possible use *here*. His *theory* I will not attempt to combat,—(perhaps I do not comprehend it),—but of its *value* as applied to actual operations in the field, I certainly think my very sure and somewhat extensive experiment qualifies me to speak.

Dr. S. sent you scions, which, as you truly said, very prettily illustrated the correctness of his theory.

Now, if you will allow me, I will refer you to a list of varieties that will prettily illustrate the converse.

First, I will mention the Golden Russet (not American), one of the most vigorous, *hardy* and productive of all Apples, and having such light colored, speckled shoots as to be quite conspicuous.

The Douglass is the lightest colored, both in tree

and fruit, in my collection, and fully equal to the Russet in *hardiness*.

Kirkbridge White, tree and fruit very light and extra hardy.

Tallman's Sweet for all the good qualities of tree and fruit is A No. 1 in this climate, is a white Apple and except the 1 year shoots, a light colored tree.

Early Harvey, light wood, green fruit and *hardy*.

The well known Yellow Bellflower is also tolerably hardy.

Hawley, very light in tree and fruit, is above the average in hardiness.

Lowell and Holden Pippin are light fruit, but rather dark wood and extra hardy.

Tulpehocken, R. I. Greening, Fall Pippin and Spire Sweet, are same color in tree and fruit as last two, and very tender.

Black Gilliflower, Primate, Roman Beauty and Mother are dark in wood and fruit, and very tender.

Baldwin, Beauty of Kent and Red Juneberry, are dark wood and fruit, and are the three tenderest Apples on my list. After nine years trial, I have not a tree, of either, six feet in height.

I have 10,000 seedlings, eight years old, and am unable to detect any difference in hardiness between light colors and dark. I have 200 Pear seedlings 5 years old and the hardiest one in the lot happens to have the lightest colored bark.

I have tried about forty sorts of Pears. They are nearly all dead, but of those that remain the Winter Nelis is as hardy as any, and the lightest colored.

Of Grapes I find the Northern Muscadine as hardy as Concord. I find Delaware hardy as Hartford Prolific. I find Catawba hardier than Isabella; Diana hardier than Union Village, and Rogers' No. 3 hardier than No. 33.

Brinckle's Orange Raspberry hardier than Fastoff.

Now in view of these *facts*, is color of the least particle of *practical value* in determining the hardiness of fruits. I am a laboring Horticulturist, in a vigorous climate; my *bread* and *butter* depends on my securing *hardy* sorts of fruit.

Now, Mr. Editor, *do you advise me—in selecting sorts—to take color of tree and fruit as my guide.*

ARRANGEMENT OF PLANT-HOUSES.

BY AN IGNORAMUS, CINCINNATI, OHIO.

I have been studying, lately, the best way of constructing plant-houses, and the direction that they

should be placed, and I have come to the conclusion that, with only one house to keep your bedding plants, and to keep up a constant display of flowers all winter, as I have to do, a low span roof running east and west is the best form and direction for that purpose; and I am convinced that a good flue is the best mode of heating. By starting the flue on the south first, we have the heat on the side where the light is.

I have a small house of this description, and the south side has been a mass of flowers all winter, while the north being from five to ten degrees cooler, and not getting so much sun, does very well for my bedding plants.

I have a pretty good collection of plants for one small house.

I had in flower at one time *Begonia fuchsoides* and *alba*, *Sandersii*, *parviflora*, and *Verschaffeltii*; *Ageratum*, *Heliotrope*, *Passiflora*, *Justicea*, *Asclepias*, *Poinsettia*, *Heterocentron*, *Habrothamnus*, *Stevia*, *Tropæolum*, *Daphne*, *Euphorbias*, *Salvia splendens major*, *Abutilon* and several others. I have plenty of all colors but blue,—nothing but *Ageratum* and some *Heliotropes*. Could *Salvia patens* or the *Delphinium formosum* be made to bloom through the winter it would be desirable; the *Eranthemum pulchellum* is one of the best of blues, but as a general thing it does not make much show, as one flower drops before another is open.

I am afraid that your advice about keeping plant-houses dry in winter in the December number is unsound.

I have an old boiler on my flue that I evaporate water from to keep the house moist.

After reading your article I thought there might be some sense in it, and so I put on the lid during those two or three zero nights, and the result was that the leaves of my *Salvia*, that I prided myself so much on, for they were so fine and broad down to the pot, turned yellow; *Heliotrope* the same.

I will now give you a perfect and sure remedy for the red spider. Take about a quart of fresh lime, two handfuls of sulphur, put into a tin vessel and fill it full of water, and spread it on the flue near the fire; always keep it full of water, and you will never see a red spider.

I had written thus far when I received the January number of the *Monthly*, in which is a notice of a Spring-house, in which some one keeps plants in; and I almost think you were joking when you wrote the article on letting out moisture, as it does not accumulate much on the glass except in very severe weather, when it is next to impossible to let it out.

We are having a very hard time of it with the

black fungus on the *Verbena*; unless we find some remedy for it, we shall have to leave off depending on it for a bedder. If you know a remedy I wish you would let us have it, and confer a great favor.

[We are always glad to hear from this correspondent, who is one of the best practical gardeners we have.

The object of the article in the December number was to show how much moist air is a consumer of heat more than dry air,—and how plants in an atmosphere saturated with moisture cannot grow because they cannot exhale. If plants do grow in an atmosphere considered to be moist, moisture must escape some where, and the air is not continually saturated. The fact that our correspondent had to keep a pan to evaporate moisture, shows there was a continual want to be supplied, and the air was not saturated.

The Spring-house is no contradiction. The plants were only there to be preserved in a state of *rest*, *not to grow*; and, moreover, the continual heat of the spring kept up a continual warmth.

The *Verbena* rust is kept down by a continual re-potting. We know a house of several thousand that are in remarkable health. They have been repotted three times through Winter—though now but in 3-inch pots.—ED.]

TIMELY SUPPLIES OF GARDEN SEEDS.

BY CHRONICLER.

The hint given in the *Monthly* last spring, of putting up seeds in boxes, in sufficient quantities to crop gardens of various sizes, I observe has been put into practice by the leading seed houses of Philadelphia, and probably other places. The plan works admirably; scores of gardeners have told us that they now can look before them to plan in advance, and execute with dispatch, and employers enjoy the benefits thereby.

PROTECTION AGAINST RABBITS.

BY A. FENDLER, ALLENTON, MO.

After having tried, in vain, many things strongly recommended as preventives against the gnawing of the bark of young fruit trees by rabbits, I find the mixture of slacked lime with a strong decoction of tobacco, applied with a brush to the lower part of the stems, a most sure and reliable means of keeping the rabbits away from the trees.

The Gardener's Monthly.

PHILADELPHIA, MAY, 1866.

✉ 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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IS THE QUALITY OF FRUIT AFFECTED BY HYBRIDIZATION?

We have ever held to the doctrine, that a wide spread belief in anything has some grains of truth for its basis. Occasionally these may be very small,—even to being of a different nature to general ideas—but yet the foundation is there.

So when we started to examine the popular belief that the flavor of the fruit of Squashes, Melons and the like, is affected by hybridization, we were predisposed to expect some facts might be found to warrant it.

Until the past few years we have joined with those intelligent Horticulturists who have taken the negative view. Our Tomatoes, Squashes and other vegetables have been set side by side in the full security that only the seedlings from the hybridized fruit would exhibit any change,—but the remarkable difference in the characters of some fruits, as given by different growers of the same varieties in separate localities, led us to suppose some other explanation necessary than those usually given,—and the result of our observations was, that there was a great probability that the popular view of hybridization was ahead, for once, of philosophy and learning.

We gave our views fully, as far as our limited observations enabled us, in our last October number. Our always welcome correspondent, Doctor Stayman, in our last number, ably reviews the subject,—and leaves an impression on the reader's mind, that there is not, and cannot be, any such change as popularly supposed.

But to our mind, our intelligent correspondent has not given as much weight to the Indian Corn illustration as it deserves,—and for this reason—what we call a *pericarp* is the covering to the seeds which changes its form after fertilization, becoming a very close part of the fruit. The Indian Corn has no perianth or pericarp to change,—and there is no evidence to show that it might not

change if it had,—on the other hand the fact that the quality of the seed is changed, and the testa or outer skin of the seed is also changed in color form and nature, is a fair ground for supposition that if it had a pericarp in close relation to the seed, such a structure might change.

Since we wrote our chapter we have met with some further facts which confirms the affirmative.

During the discussion on Grapes in the Hall of the House of Representatives, at Harrisburg last winter, Mr. Merceron stated that sometimes the Creveling Grape set with loose thin bunches, but this he remedied by planting an occasional Concord among them. This made the bunches *compact*, and the *berries larger* than when fertilized by its own pollen. Mr. A. W. Harrison confirmed Mr. Merceron's statement. Now, it seems to us that if the berries, which are botanically fleshy pericarps are *increased in size*, by hybridization, why may they not be in other particulars? Certainly it proves this much, that there is an influence exercised on the fruit *to some extent*.

We have now before us a very interesting paper in the *Comptes Rendus*, a popular French scientific periodical, by Monsieur Henri Cousechet, (tome 60, page 229), "On the effect of crossing some of the southern vines of France with the variety *Le Teinturier*." This variety of Grape was crossed with the varieties *l'Aramon*, *la Carignane*, *le Grenache*, all white kinds. The bunches on these hybridized plants had grapes of two kinds, as in our hybridized corn, some with white berries and others with the colored *le Teinturier*.

This fact tells its own story so clearly, that we think we may take it for granted that popular opinion is correct,—that fruits are affected, injuriously or beneficially, by the pollen they are fertilized with,—and that it is of first importance to cultivators to recognize the fact.

In Strawberry culture the importance of the principle is manifest. Many have a preference for growing pistillate varieties, and procure a few pollen bearing kinds to fertilize their beds. If they want good flavored fruit, it will be important to have this quality in the fertilizer. If size is an object, this also can be assisted in the selection of the male parent.

And again it will be well for the much abused "Committee-man" to assure himself that when praising up some extra fine Crevelings he has got the real thing, and is not robbing the Concord of that which is due,—and more than all "Ye Committee-man" himself will learn not to laugh too heartily at the mistakes of his compatriot, who may happen

not to see wherein his McAvoy differs from Russell's Prolific,—nor, in truth, will "Ye Editor" have much reason to complain in his turn if some strange decisions are sometimes made in view of the strange developments herein recorded.

A CHAPTER ON OAKS.

We have before us the 16th volume of De Candolle's Prodrromus, issued about a year ago. It comprises the natural order of *Cupulifere*, of which the oak constitutes the greater part. The volume, of course, is devoted strictly to the science of Botany,—but there is so much that will interest the American Aboriculturist, that we have thought a chapter might interest many of our readers.

The author includes only four genera in this natural order. *Quercus*, or the Oak family, embracing 281 species; *Castanopsis*, a genus partaking partly of the character of the Oak and partly of the Chestnut, 14 species; *Castanea* the Chestnut, 3 species; *Fagus* the Beech, 15 species.

The geography of the Oak is interesting. It seems to take its rise in the British Isles with what is known as the *Quercus robur* or British Oak. As it extends southwardly to France and Spain the species increase, but not much, until touching the Mediterranean a natural boundary is reached in the Atlas Mountains in Africa, beyond which the Oak is unknown. Indeed, but a single species has a foothold in Africa, and that merely in the narrow strip of land between the Atlas Mountains and the sea,—for after all it seems mountains and not seas govern the distribution of plants over the surface of the globe. Running eastwardly along the Pyrennean Mountains to the Mountains of the Caucasus the number of species is continually on the increase in all the parallels of longitude north of this line. This boundary here deflects southwardly following the line of the Himalaya Mountains to the eastern side of the Bay of Bengal, continuing on to the Malaccas, Sumatra and crossing the line to Java where it stops, as does, indeed, most of the European and Asiatic forms of vegetation; giving place here to the curious Australian types. North and east of this line is the home of the Oak in the Eastern Hemisphere. Europe having about 28 species and Asia 121—some of these, however, bordering along the Black and Caspian Seas, being common to both quarters.

Crossing from the British Isles over the Atlantic to about the same parallel of latitude, the Oak commences at the Gulf of St. Lawrence with the Red Oak (*Q. rubra*) and White Oak (*Q. alba*), they

increase, but not considerably along the line of the Alleghanics, until passing around through Tennessee to Texas into Mexico, they find themselves at home again in great numbers, decreasing to its southern point in New Grenada, where the last is found. The number of species on the American Continent De Candolle makes 119.

As in every new arrangement of plants the names of many of these Oaks are disturbed. As knowledge increases the new facts must necessarily influence new views. In some points, however, we should differ with the learned author. He, for instance, concludes on reducing our Black Oak (*Q. tinctoria* of Bartram) to a variety of Scarlet Oak (*Q. coccinea*, Warg).

He takes four varieties and classes them all under the name of *Quercus coccinea*. But the scales of the cup in the Scarlet Oak are always united to the cup,—which in the Black Oak are always free, giving the cup a burred appearance; and the flesh of the scarlet nut white or yellowish white, while in the black it is orange, and these characters seem so regular and constant to each kind, that in addition to the other points marked by Michaux, Wengenhiem, and others, we might hope to see it considered a distinct species.

The much disputed Bartram Oak (*Quercus heterophylla*) the author classes as a variety of *Q. aquatica*, the southern water Oak,—in which he is certainly mistaken. Its proper alliance is with *Q. Phellos* as its seedlings satisfactorily show. It has the Polymorphous foliage, but not the persistence which marks the leaves of the water Oak; which last is one character particularly and justly pointed out by De Candolle himself as distinguishing the water from the willow Oak.

In speaking of the *Quercus fastigiata*, or as we call it in our garden language, the Lombardy Poplar Oak from its fastigate habit, the author says it grows "in woods in Calabria, and in the southwest of France." We had always supposed this to be a mere nursery form, and not a fixed wild form. If this be so, it should reproduce itself from seed which it produces freely when young,—and thus make this beautiful and picturesque tree as common in our landscape scenery as it deserves to be.

Of the Oaks of the Atlantic States, we are reminded by this enumeration of one which few lovers of American Oaks know to exist—*Quercus Georgianu*, described by A. Curtis in the *American Journal of Science and Art*, in 1849. It is intermediate between the Pin Oak and the Scarlet Oak. It is a bush,—probably confined to Georgia, and does not exceed 10 feet high.

STUPENDOUS AMERICAN ENTERPRISE.

Uncle Samuel has often astonished Master Bull and Johnny Crapeau by some wonderful feats of Necromancy. These venerable gentlemen had no sooner shouted "the great Republic is no more," than they were astonished by the re-appearance of the young fellow in full dress. Uncle Samuel intends again to astonish the Barbarians; this time in the arena of peace instead of the arts of war. In the person of his distinguished representative the Honorable Isaac Newton, he intends to try the wonderful feat, performed for the "first time on any stage," of sending *an American farm* to Europe.

In the monthly report of the Department of Agriculture for February, 1866, we find the following astounding proposition:

"Our country has many such farms" (that is grain producing, grazing, mixed husbandry, etc., which no doubt foreigners will think very remarkable), "and it ought to be, as it doubtless will be, the pride of individuals, of county Societies, but especially of State Boards of Agriculture *to have them properly exhibited* in such an European exposition as that in Paris certainly will be."

After the exhibition of the great resurrection feat, this new illustration of our amazing power in sending a real farm to Europe may seem trifling to foreigners.—but to us who have to foot the bills it may afford some explanation of the Honorable Isaac's answer to the question of the Committee of Congress as to where the money went to, that his expenses "had certainly exceeded his most sanguine expectations."

NYCE'S SYSTEM OF PRESERVING FRUIT.

The system of Prof. Nyece, which we believe our journal was the first to bring prominently into notice, has not only sustained the promise we perceived in it from the evident correctness of the principles on which it was founded,—but in practice it has fully come up to the best anticipations formed of it. Very few useful inventions have been at once perfected, and there can be no doubt this one of Prof. Nyece will receive numerous "finishing touches" before it leaves the hands of our successors.

Those of our readers who are convenient can see a house in practical working at Trenton, New Jersey, and which fully corroborates all that has been said of it.

We take it for granted, from what has already been done, that these houses will be established eventually in every large town,—and it opens up a

brilliant prospect to the fruit grower, to whom any thing that tends to prolong the marketing seasons, or adds to the consumption, must possess a great interest.

When the discovery was first made of the method of preserving Peaches in "self-sealing" and other cans and jars,—we pointed out to the Peach grower what an immense influence this practice was going to have on widening the market, and consequently raising the price both for trees and fruit. Many of our readers took the hint, and planted largely. Some of them to the great amusement of their neighbors who abhor "book learning," sowing from *four to six hundred bushels of Peach stones* in a single season. Yet these men were soon sold out of stock, and at this moment a man with a million of Peach trees could readily sell them all, and any amount of fruit find a ready market and at high prices.

Prof. Nyece's system, so far as we have been able to judge fairly of it, has not been completely successful with some kinds of fruit—we have no doubt, such is our faith in the soundness of the principles, that all these difficulties will be overcome; but in some the success is all that can be desired. Of these successful classes are the *Apple* and the *Grape*.

We feel quite safe in predicting for these two fruits what we heretofore did of the Peach, an "immense run." Notwithstanding the heavy amount of these things that have been demanded by the public, during the past few years, it is nothing to what it will be; and he will be wise who looks ahead and prepares for it.

Traps 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.

TREATMENT OF RASPBERRIES.—*J. H. F.* says:—"In looking over my No. for March, page 70, article 'How to Plant,' subject '*Raspberries*,' I noticed the following" (speaking of newly planted Raspberry plants), "If any blossoms appear, cut them off, encourage the growth of the *laterals* as much as you can, and, in the Autumn cut all laterals back to six inches. *Do not permit any suckers to grow for a year or two.*" The italics are mine, and embrace the portions needing the main explanation. What does the writer mean by the portion quoted?"

SOUR AND SWEET APPLES ON ONE TREE—
 “Many Readers,” West Newton, Pa.—“I quote from page 96, ‘Proceedings of the Fruit-Growers’ Society, of Eastern Pa.,’ subject ‘Apples.’ J. E. Mitchell exhibited specimens of an Apple, the tree bearing which was said to be the produce of a bud of Talman’s Sweet and Rhode Island Greening, cut each longitudinally through the eye in halves, and the two halves of each set together forming one bud.

“Is it possible to produce a tree in the manner above described?”

“I have repeatedly heard practical nurserymen state that it could be done, but they were persons who were totally unacquainted with the science of vegetable physiology. I have never been able to meet any person who had performed the operation, yet many, as in the above case, ‘know it had been done.’”

[These Apples were from the farm of L. Blodgett, Esq., in Warren County, Pa. If we correctly understand the statements of facts, it is that, “hundred of buds” were experimented with, but “only this one succeeded.”

We believe they all failed, and always will fail, from the impossibility, as we think, of ever dividing the minute *single cell* which must constitute the germ of the bud, so keenly as to unite them again, and which we take it, would be necessary to the perfection of the experiment. To our objections, we have been met with the remark, “what signifies your theory when the facts are against you,—there are Talman’s Sweets, and there are Rhode Island sour—how else could they come?”

How could a Nectarine spring out from a Peach? Any one can tell blindfold whether he is eating a Peach or a Nectarine, they are as distinct in flavor as these Apples, yet it did so spring.

Sweetness or acidity in fruit is to some extent a chemical rather than a totally constitutional question.

The *Viburnum opulus* of Europe produces a bitter disagreeable berry,—while the same species in America bears them of so pleasant an acid as to obtain the name for it of Mock Cranberry,—and we know all our fruits vary individually in this respect. There are no boundary lines between sweets and sour therefore in nature. There must be some place where there is a fusion—why not in the same tree?—in the same fruit? The Rhode Island Greening is one of those fruits which is on the boundary line between the sweet Apples and the sour Apples. It is often a first-rate dessert Apple,—at other times

only fit to cook. We can readily understand that with such differences in different trees, it is not impossible to see such an anomaly even in the same fruit.

We should say that in this “one bud out of hundreds” which grow, the Rhode Island Greening germ was uncut, and survived; and that to the variable character of this variety we owe the very remarkable fruits exhibited.]

NURSERYMEN AND THEIR CUSTOMERS—J. M. M., New Bedford, Mass., says:—“Your article on Nurserymen and their Customers, in the April No. tempts me to state a little grievance of my own. I bought last spring (1865) twelve dozen of the newest Belgium Strawberry plants of—The plants reached me in poor order, and some in a state of rapid decay. With the exercise of all the skill I have, I could save but about one-third. Of one dozen (Souvenir de Kieff) I lost all. Of another (Lucas) I saved one. Of another (Quinquifolia) two, and so I wrote to Mr. ———, stated the facts, and asked him, not to replace the whole, but to give me a dozen of the Souvenir. I am still waiting for an answer to my letter. The result is, that this Spring, when Mr. ——— tempts me by advertising another lot of still newer plants, I cannot buy them—though I want them—for I cannot afford to pay the price of a dozen for one poor decaying plant.”

[We have cut out the name and address of the Nurseryman referred to, as the object of our journal is, as we have often said, not to attack individuals, however much they may deserve attack; but to establish principles.

Another friend writes:—“I received eight weeks since a case of plants from London. By bad packing the plants were destroyed. On hearing of what happened they wrote, promising to duplicate the whole lot next Fall. My experience of our dealers is unfortunately such as to make me wish they would imitate the high toned principles in which the English and French houses conduct their business.” The morning of the day we got our friend’s letter, we happened to be talking to the Deputy Collector of a large shipping port, who said that the number of French nurserymen who attempted to get goods into America on fraudulent invoices was astonishing,—and equally astonishing was the number of American nurserymen who came forward voluntarily to expose the fraud, abandoning the profits to which they might be parties, for the sake of an honorable principle. So much for the honor of French nurserymen, as opposed to dealers at

home. With respect to "English nurserymen," a *Periploca græca* on our own grounds, sent us by a famous London firm, which was to be a *white Bignonia capreolata*, tells its own tale. English "high toned" houses sent over last year *Double Deutzia crenata* which proves to be the old *single one*,—and we know of hundreds of similar instances.

We have found first-class houses in Europe. There are first-class houses in America. With a very extensive acquaintance all over the world, our experience is that a larger per cent. of nurserymen in America are intelligent and upright than in any country on the globe.

We wish to be severe on all ignorant pretenders and dishonorable practices,—and while fearlessly exposing these we must be careful to do full justice to the intelligence and honor which abundantly exist among us.

PRESERVING CABBAGE—*P. S. K., Cincinnati, Ohio.*—"In your last you refer to a plan for preserving Cabbage through the Winter by burying its roots upwards in the earth. I have never had the best of success by various plans I have tried, and propose to try this one next Fall,—but it is necessary that we get at our's continually through the Winter. By the plan referred to, can they be got out of the earth? Further details of this plan would oblige an interested reader."

[The way to preserve Cabbage with the head down is a very simple one. Choose a dry day, just before Winter may be expected to set in earnest, pull up the Cabbage and select all the good heads. Those which are not very hard are better than those ready to burst. Leave all the old, loose leaves on. Select a piece of ground where the water will not lie; a long narrow piece is best—say 4 feet wide and as long as may be desirable. Throw out the dirt about four inches deep. The whole four feet width, into which ditch pack the Cabbage closely, and upside down. After they are all in, throw the earth, previously thrown out, in amongst the roots over the heads. A little rye straw or corn stalks may be thrown over to keep the frost from penetrating deeply,—but this is not very essential, as a hollow space being of course under the frozen earth, it is fractured very easily by a blow from a mattock or old axe, and the only leaves that adhere to the frozen ground are the old leaves left on for this purpose. In short, go ahead with the plan—you will find there is no difficulty in getting out the heads in the severest weather.]

THE HONEY LOCUST FOR HEDGES—*J. A., Lake*

Mills, Wis., asks our opinion of the Honey Locust for hedges. For lazy men who intend to neglect it, it is one of the worst, as it soon grows up to be a tree and a nuisance. A slow growing bush that will not make a hedge in ten years is best for them; but to him who can spare \$5 per mile per year to mow it in June, it is one of the very best things. In very rich soils we prefer Osage Orange, but in poor soils, or those that are thin and rocky, or where the temperature is too cold for other things, it is the best hedge plant we have.

SAWDUST STABLE MANURE—*J. D., Chicago, Ill.*—I can make arrangements with a large Express stable in this city for all the manure made, by keeping it hauled away (gratis); the bedding they use is sawdust. My ground is a clay loam, with a stiff calcareous subsoil, resting on a gravel bottom. Can I use the above manure to advantage on my ground? I am informed by a Mr. Heath, (an amateur gentleman) that he thought well of it. From your high position as a Horticulturist and a practical worker of the soil, your opinion through your valuable *Monthly* will be anxiously waited for by your subscriber.

[You had better compost it one year before using, mixing with it about half bushel of slacked lime and half peck of coarse salt to each load of manure. This will make of it an excellent fertilizer.]

WILD SAGE.—*Dr. Asa Gray* kindly contributes the following note: "In reference to the Wild Sage (see *Gardener's Monthly*, April number, page 116) Lewis and Clarke, in their travels across the Columbia River, first speak of it; and all travellers over the plains are most familiar with it. It is their fuel in certain parts of the Winter. The name "Wild Sage" is given to several species of heavy *Artemesias*,—specially to *A. cana* and *A. tridentata*.

ANNOYING TO CONTRIBUTORS.—All of the correspondents of this journal write solely for the public good, without pay, and with no other expectation of reward than the consciousness of adding to the general stock of information. It is a great favor to the public to have the experience of these individuals, many of whom are distinguished in their several branches of science and art. It is not fair to "bore" them afterwards with private letters. Because a man is willing to give information to ten thousand at once, he may not be willing to write to ten thousand individuals. The annoyance from well-meaning men is so great that many do not like to write to us at all, and others only under initials

or assumed names,—and all of us are losers. A correspondent sends us a sample one he has received, containing a score of questions for answers, which would require a large book to explain; and twenty-five cents for a bundle of cuttings, which the gentleman asks for,—which would scarcely pay for the time, postage and labor of cutting.

No gentleman corresponds with a stranger without some well founded grounds that such a liberty would be excused,—and if such letters are always thrown into the rubbish box, it might stop the nuisance, and give more encouragement to intelligent correspondents to write for us.

SALT FOR FUNGUS IN HOTBEDS—*J. G. B., Fishkill, N. Y.*—“Having read a communication from Horticola, page 103, in which he speaks of common salt destroying fungoid growths in hotbeds and on the outside of flower pots, please allow me to inquire, through the *Monthly*, how and in what state it must be applied in each case.”

[The salt is simply sprinkled thinly over the surface of the hotbed. It will kill plants, and of course must be kept from them.]

PEARS ON PEAR STOCK—*C. C., Germantown, Pa.*—“In the published report of the discussion on ‘Diseases of the Pear,’ of the Pennsylvania Horticultural Society, to be found on page 93 of the March number of the *Gardener's Monthly*, the writer is made to say that Pears on Pear stock transplanted one year from the graft could be perfectly trained and dwarfed, which is correct so far as it goes. But he also said they could be so trained and dwarfed as to be made to bear as early as those on Quince; that the trees were healthy, and retained their foliage till late in the season, and consequently matured their fruit to perfection, while the contrary was the case with the Pear on Quince. In proof of these facts he pointed to the trees under his charge, many of those on Pear stocks bearing the *third year* from the graft; and in particular to a ‘Seckel’ five years grafted, from which was gathered, last season, a *bushel* of that delicious fruit.

I presume the reporter became so interested in the discussion that he forgot to make notes, and trusted entirely to memory for making out the report, and thus overlooked the most important point of the argument which I contended for, namely:—that the Pear on Pear can be made to bear as early as the Pear on Quince; that the tree is longer lived, is less subject to disease and the attacks of the borer; that the foliage is healthier, and the fruit

finer-grained and larger; that the Pear is by consanguinity the nearest relative of the Pear, and is, of course, the true stock to graft on; that the Quince being short-lived, very subject to disease, and having no affinities in common with the Pear; in short, having been tried and found wanting it is time to dispense with that stock for grafting purposes, and trust entirely to the natural mode of grafting like upon like.”

[It is but justice to our regular reporter to say that he was unavoidably absent, and that the notes furnished were the voluntary contribution of a member of the Society, to whose kindness we are much indebted.]

EFFECT OF WIND ON THE THERMOMETER—*J. G. B., Fishkill, N. Y.*—“Does wind affect the mercury or simply the atmosphere? I ask this as I frequently meet persons who insist it does, while I am of the opinion that it does not.”

[Wind does not affect the mercury. We feel cold more in windy weather than otherwise, because by the mechanical force the cold air penetrates crevices in our clothing or skin, and drives out the heat. There are no crevices or pores in the glass of the thermometer.]

OLD BUT BEAUTIFUL PLANTS.—On a casual visit to the nursery of R. Kilvington, the well known Florist and Botanist of Philadelphia, we were pleased to see many old things nearly forgotten, that are very beautiful and well worthy of cultivation; among others *Coronella varia*, the old Bridal Rose, *Anemone cruenta*, *Cineraria amelloides*, *Saxifraga umbrosa* or “London Pride,” *Iris Chinnensis* and *Cereus Scottii*.

CHILI STRAWBERRY—*J. M. W.* asks what are “the peculiar excellencies” of the Chili Strawberry “advertised in some catalogues.” We do not know,—nor to what catalogue he refers. Nothing of the kind has come before our notice.

ANTS IN HOTBEDS—*J. G. B., Fishkill, N. Y.*—“Having been seriously interrupted by small brown ants or mires working in my cutting bench, digging holes down the side of my cuttings, thereby arresting the process of rooting.

“I have tried lime water, whale oil and soapsuds, but with ill success. Is there any remedy? A reply through the *Monthly* might, perhaps, be of service to others as well as myself.”

[Sulphur dibbled in the ant holes is the best thing we know to drive ants away.]

LA CONSTANTE AND KITLEY'S GOLIATH STRAWBERRIES—*J. M. W.* asks for their history. The last is an English variety,—the first was raised by De Jonghe, of Belgium.

COMMUNICATIONS.—Our first form, containing communications, goes to press about the tenth of the month. We have on hand several very interesting ones which, but for this fact, would have appeared in this number.

OBITUARY.

MR. CHARLES N. FIOT, one of the earliest friends of the *Gardener's Monthly*, and a distinguished amateur Horticulturist, died on the 8th of April, at his beautiful country seat, at Bethlehem, Pa.

Mr. Fiot came to this country from France many years ago, and amassed a fortune as a dealer in musical instruments. When he retired from business he had the good sense which so few active business men understand, that a life of mere "retirement," without some object of interest to pursue, would not long be a happy one. He therefore, though considerably advanced in life, commenced the study of the natural sciences, and was an ardent lover of Horticulture. He became quite distinguished as a Botanist,—and his beautiful grounds at Bethlehem showed that his studies in the art of landscape gardening had also been very effectual.

Mr. F. took a great interest in seeing America independent of all the world in wine manufacture. A good judge of the wines of France, he assured us, the last time we saw him, that those produced in the neighborhood of Bethlehem were equal to the best wines of his own country, and the fact seemed to give him great satisfaction.

As is the case with most men who keep up a taste for gardening and natural history to their approaching "three score and ten," Mr. Fiot was strong, active and a useful member of society to the last days of a good old age; and departs sincerely mourned by a very large circle of friends.

Books, Catalogues, &c.

COUNTRY LIFE.—By R. Morris Copeland. Boston: Published by Dinsmore & Co.

It is very pleasant to notice the passage of this beautiful work through its *fifth edition*.

A work so well known and appreciated as this of Mr. Copeland's, scarcely needs a full description from us,—especially for our readers, many of whom,

no doubt, already have it on their library shelves. For the benefit, however, of the few who have not, we may say that the work treats of the erection, arrangement and management of greenhouses and plant structures of every kind, with all their various details and matter of arrangement.

The flower-garden, kitchen and fruit-garden, the farm and the garden,—in fact "country life," in its widest acceptation—all have a due share of the author's attention,—arranged in chapters suited to each month in the year.

In a work, and so large a work, mainly filled with practical directions, it is to be expected that something would be recommended on which practical men would not agree. We notice many of these "bones of contention,"—particularly one, on an accidentally open page before us as we write, that the Butter Pear can be kept from cracking by a thick mulching of old chips and river waste. We have these two articles in abundance in this neighborhood, and those who have faith in the plan can settle here and plant a hundred acres of the White Doyenne, and if they will only produce the Pears, we will guarantee a handsome fortune on them.

We do not regard any of these matters as any defect in the work,—on the contrary, we are the rather pleased, as it shows in Mr. Copeland that desire for originality and an independence of thought which always distinguishes the real and useful author from the mere book maker.

New and Rare Plants.

NEW PINK.—Mr. Peter Henderson is sending out a new hybrid Pink called "Sarah Howard." It is double white, with much of the Chinese habit, and judging from a flower we have seen, we take it to be a very desirable plant.

VARIEGATED ANTIRRHINUM, "Silver Belt."—This we also have from Mr. Henderson. It has very pretty variegated leaves. The flowers we have not seen.

A NEW EDIBLE PLANT OF CALIFORNIA.—Col. A. B. Gray discovered a singular plant, which grows parasitically on old roots in a shady, forlorn desert in the Gulf of California. It is said to be very luscious when fresh gathered and cooked, resembling in taste, but more delicate than the Sweet Potato. It is allied to the *Monotropa* and other Orobanchaceous Plants of the Eastern States. Dr. Torrey has described and figured it in the 8th vol.

of the Annals of the Lyceum of Natural History of New York, and calls it *Ammobroma Sonora*—"Sand foot of Sonora."

BEGONIA BACCATA.—Discovered by Mr. Gustav Mann, collector for the Royal Gardens, Kew, in the Bight of Benin. It is a robust Begonia, with a baccate fruit; hence its name (curiously confounded with *B. Mannii* in Dr. Hooker's description, which perhaps would lose nothing by being rewritten). The stem is tall and stout, leaves six to ten inches long, broadly orbicular-cordate, suddenly tapering to a long point. Flowers monœcious, two inches and a half across, white, or white and pink.—*Botanical Magazine*.

CEREUS MACDONALDIÆ.—A magnificent *Cereus*, which bloomed first in 1851, was figured a few years ago at table 4707 of the *Botanical Magazine* under the name of *Cereus Macdonaldie*, having been received from Honduras from Mrs. Gen. Macdonald. A casual observer, as Sir W. J. Hooker remarks, might pass the plant as an unusual large flowered night-blooming *Cereus*, but the slightest inspection of the stem and branches and the different nature of the flower-bud, the patent petals, and above all the great size of the flowers—14 inches in diameter from tip to tip of the sepals, and 14 inches from the base of the calyx to the tip of the stigma—all indicate a most distinct species. The plant is now out of flower, but a comparison of the two species even in this condition is quite enough to justify their separation.

Sir W. J. Hooker, in a letter received very lately, remarks, "It has been justly observed in a note to the description of this plant in the *Botanical Magazine*, vol. 79, t. 4707, that the figure reduced to one-half its natural size gives no idea of the magnificence of the flowers themselves. The plant at Kew, covering a great extent of wall and the rafters of the hothouse, has blossomed most freely during the present summer (1865);" and Mr. Gower, foreman of the propagating house at Kew, has communicated the following memorandum on the subject:—"The *Cereus Macdonaldie* having flowered remarkably well this season, I have ventured to trouble you with the following note concerning it. The period of flowering has extended over six weeks. Upon one occasion (May 30th) eleven blooms were expanded at one time; upon another ten, and several times seven blossoms were open in the evening. During the month of May 37 blooms expanded, and in June 46, making a total of 83 blooms. A very great many more buds were form-

ed, but the plant had not the power to open them." It is greatly to be regretted that this and other nocturnal species of the genus can be seen by those only who watch the progress of the flowers and visit the houses after sunset in the evening, or before sunrise in the morning.—*Gard. Chronicle*.

SPARAXIS PULCHERRIMA.—One of the many gems for the herbaceous border introduced by Messrs. Backhouse, of York, who flowered it in October last. The specimens were produced from the district between the Keiskamma and Buffalo Rivers, on the eastern side of South Africa, and grew in a rich black soil. The leaves are sword-shaped, rather thick, scape very tall and slender, attaining six feet in its native habitat, branches curved from the weight of the pendulous flowers, which are campanulate and a dark blood-purple color. "A more lovely and graceful plant, from its extremely tall and slender stems and tiers of drooping flowers, cannot well be imagined."—*Cottage Gardener*.

EPIDENDRUM MYRIANTHUM.—This charming *Epidendrum* has been in the country many years, but could never be induced to flower, having probably been kept too warm. The plant flowered in June last in one of the coolhouses at Knypersley, and continued long in beauty. The flower stems are a yard high, and carry numerous racemes densely furnished with spikelets of small flowers of a brilliant purplish-rose or magenta color.—*Botanical Magazine*.

Domestic Intelligence.

SWEET APPLES IN ILLINOIS.—I am pleased to see the much-neglected subject of sweet apples attracting some attention just now. I have taken pains to collect nearly all the sweet apples that I can hear of, and am in hopes in a few years to be able to recommend a list of six or eight that will give F. G.—entire satisfaction. From my experience thus far I recommend the following:

1. Sweet June is all that can be asked of it. (August).
2. Golden Sweet, is the best of its season. Fruit large but not very good. Tree hardy and productive. (September).
3. Sweet Nonsuch. Tree hardy and productive. Fruit medium, very sweet, crisp and juicy. (October to January).

4. Ramsdell's Sweet. Tree productive. Fruit large, very handsome, and good. (October to January).

5. Paradise Winter Sweet. This fills up the bill completely, except that it is not a very early bearer. (November to February).

6. Broadwell Sweet. Tree hardy, and very productive. Fruit always fair, large, handsome, sweet and juicy. Not very rich, but we can't do without it.

The above all cook well, except the Golden Sweet. That I am ashamed of, and am in hopes it will soon have to give way for something better.—W. CUTTER in *Prairie Farmer*.

A QUICK PROCESS TO MAKE TAR.—Split up a parcel of rich light-wood—enough to fill a large pot or kettle; put it in end-ways, not quite so long as the pot or kettle is deep; put it in tight so that it will not slip when the vessel is turned up side down; have a smooth, slanting place to put it on; when it is placed, have mortar made of clay, put it round the edge of the vessel except at the lowest side; have a hole in the ground for the tar to run in; make a fire on the vessel and around it except where the tar is to run out, and you will soon be the owner of a lot of tar. Quantity according to the size of the pot or kettle, and richness of the pine.

A short time since, I commenced after breakfast, split up the light-wood, put it in a fifty gallon kettle—rather poor pine—and a little after dinner I had upwards of four gallons good tar.—J. FARRAR in *Southern Cultivator*.

DR. THOMAS B. WILSON.—We gave a short notice of the death of this distinguished, but singularly modest and unassuming devotee of science, at the time. The following details of his life, in addition to what we have said, deserves a place in history:

Born in Philadelphia in 1807, he went to England with his father in 1820, and was placed at school in Darlington in the north of England. Returning in two years he became an apprentice to the study and practice of Pharmacy in Philadelphia, which gave him great opportunities for gaining a knowledge of the wonders of the physical universe. These studies fitted him for college and he graduated from the University of Pennsylvania in 1830, and thenceforth devoted his time and talent to the study of the Natural Sciences, pursuing them both in this and foreign countries; and in order to become better acquainted with subjects

that engaged his special attention, making extensive tours of observation in Europe and America. Besides making excursions as a naturalist throughout our own country and Canadas, he made five visits to Europe, and traveled in England, France, Switzerland, Italy, Belgium, Holland and Germany, in pursuit of that knowledge and information which comes only from personal observation.

He was one of the principal founder of the Academy of Natural Sciences of the city of Philadelphia—and of the Entomological Society of Philadelphia—a young but most useful and worthy institution, and the only one of its kind in this country. To these associations for the advancement of science, Dr. Wilson was most strongly attached, and was munificent in his donations to them. To the former, in money, books and articles for its museum, he gave \$200,000, and to the latter \$26,000. He also gave his entire medical library to the Philadelphia Medical Society, and books to the value of \$1,500 to the Pennsylvania Historical Society. To all there must be added his entire time and energies during his whole life. Other men have donated larger sums for benevolent objects, but Dr. Wilson's great merit consists in this,—that he appreciated the paramount claims of the Natural Sciences, especially at a time when they were much more overlooked than they are now.

YIELD OF YOKOHAMA SQUASHES.—I find that they yielded with us the past season from 20 to 30 Squashes to the square rod, averaging four or five pounds each. They are very heavy in proportion to their size, the seeds being small, and contained in a very small cavity. The flesh is very dry, sweet, fine grained, and of a rich orange color. When cooked they make the best substitute for Sweet Potatoes of any thing I know of; and for pies I think them equal to any other Squash. They ripened here in Connecticut the past season, but required the entire season in order to mature before frost. The Squashes keep very well, but I think not quite as well as the Hubbard. The stems of the Yokohama, where they join the Squash, are nearly square, a peculiarity I never saw in any other Squash.—COR. OF *Country Gentleman*.

PLUM STOCKS FOR THE SOUTH.—We have only succeeded with two kinds of stocks—the Harpeth and the large Chickasaw, (not the broad leaved sloe). The Harpeth Plum is a thrifty, strong growing sort that *lives from cuttings and never suckers*. We prefer it to all others. We like the Chickasaw nearly as well, but only to be used for grafting,

and in this way: Take *pieces of the root*, four or five inches long, and graft upon it, by the splice method, a scion of the variety you wish to propagate, fully eight inches long. Bury the junction at least four inches beneath the surface of the ground in planting, and in two or three years you will have a Plum tree *on its own roots*, independent of the weak growing Chickasaw, and with no tendency to sucker.—*Southern Rural*.

BLACK WARTS ON PLUM TREES: A REMEDY.—It is now 30 years since I set out Plum trees in my garden; when they began to blossom, black warts began to grow, and in three or four years all were dead. After that I procured ten trees of a nurseryman and set them, and when they began to bear, black warts made their appearance. Having seen an account in the *Cultivator* that iron turnings, if applied to the ground round the tree, would stop their growth, I tried them. I procured a quantity from a machine shop, applied about a quart to a tree, hoeing it in all round, two feet from the tree; at the same time, (it was Spring) removed the black wart; I did not see any more, except two or three which I supposed escaped my notice at the time of the application, for more than 12 years. The trees after bearing first-rate, have mostly gone to decay, three only remaining. This last Autumn I discovered a few warts on one of the remaining trees. The account above alluded to said, if a few nails were driven into the ground, it would answer the same purpose.—D. FISHER, *Boston Cultivator*.

Foreign Intelligence.

A LARGE VINE.—On the seacoast, between Tyre and Sidon, is a very ancient mulberry garden, surrounded by some enormous Olive trees, whose hollow trunks attest their great antiquity. By the garden side stands a cool fountain, fed by one of the mountain streams, so welcome to the traveler for his noontide rest when travelling through that thirsty land. After resting awhile at this pleasant spot, we rambled through the garden of Mulberry trees, partly for the sake of taking the fruit, but more with the intent of learning something about the rearing of silk-worms, which was there in full operation. Whilst admiring the great size of the fine old Mulberry trees, I happened to notice the bark of a tree which appeared so vine-like in its character that I stopped to examine it, and, to my surprise, found that it was really a Vine of most enormous dimensions; it rose by two main stems,

and fairly rested upon six or eight of the large Mulberry trees around. I measured the two stems a few inches above the ground; the larger one was 50 $\frac{1}{4}$ inches in circumference, the smaller 40 inches. I endeavored to trace out the area covered by its branches, but could not obtain an exact measurement, for the branches had rambled most irregularly. It had a splendid crop of very large bunches of grapes then, but in an early stage of growth, and I was told that it is a black variety. My impression is that it is one of the largest Vines in the world, and it would well repay a visit to Ein-el-Kanterah," for that is the name of the spot, if it be sought for by any of your readers, whose rambling propensities may carry them along that seashore.—W. WANKLYN *in the Cottage Gardener*.

A NEW WORK ON THE STRAWBERRY has appeared in Europe, called:

LE FRAIZIER. Par Le Comte Léonce de Lambertye, Paris: 8vo., pp. 392.

This is a work extending to nearly 400 pages on the Botany, History and Cultivation of the Strawberry. The author recognizes eight species, distributed as follows:—three European: *Fragaria vesca*, *F. elatior* and *F. collina*; three American: *Fragaria chiloensis*, *F. Virginiana* and *F. Grayana*; two Asiatic: *Fragaria Daltoniana* and *F. nilgherrensis*.

There are numerous varieties of *F. vesca*; but the best, and most generally cultivated, is the *semperflorens*, comprising the Red Alpine, and its sub-variety the White Alpine. The Red and the White Wood Strawberries cannot be considered distinct from the Red and White Alpines, for these if not renewed by seed will degenerate and become similar to the wood varieties; that is to say, instead of being tolerably large, conical and sometimes cockscomb-shaped, they will assume a small and roundish form. There is a sub-variety, *Fraisier de Gaillon* (*efflagellosa semperflorens*) which does not emit runners, and is also known under the name of *F. des Quatre Saisons sans Coullants*. The variety called *muricata*, or *F. de Plymouth*, was described by John Tradescant, in 1633, and he states that it was cultivated as a curiosity by a lady at Plymouth. The original has, no doubt, been lost; but it appears to have been only a sport or monstrosity from the Alpine, with the petals and stamens transformed into leaves. *F. vesca* var. *monophylla*, a *Feuilles simples*, is a variety raised by Duchesne, at Versailles, in 1761. The leaves consist of only one leaflet instead of the usual number, three. *F.*

vesca var. *cyllagellis*. Fraisier sans Coulants and F. Buisson, Bush Alpine, is like the Wood Strawberry, but makes no runners. This was formerly much used for edgings, and is still sometimes employed for that purpose. It must not be confounded with the variety, des Quatre Saison sans Filets, which, however, may be substituted for it. *F. vesca* var. *multiplex* Fraisier a fleur double, the Double-flowering Strawberry, had, it is stated, disappeared from the gardens in France, but had been latterly reintroduced by M. Gloede from England. Another variety of *F. vesca* is still cultivated in some districts near Paris, under the name of Fraise Petite Hative de Fontenay-aux-Roses. It ripens five or six days earlier than the earliest of the other varieties.

Fragaria elatior, Caperon commun, F. Caperon, is the Hautbois of the English. It appears that the French have employed the term Caperon as we have done that of Hautbois, to designate not only the Hautbois proper, but also any other large Strawberry of the Pine or Chili breed; and hence a considerable amount of confusion arose. Comte de Lambertye reduces the varieties to four, besides the Belle Bordelaise, and this he might have included with the Caperon Royal, our Prolific or Conical Hautbois, which it has proved to be. It may be useful to give the synonyms of the Hautbois according to the author's arrangement, as he has evidently taken great pains to ascertain them according to the different authors who have written on the subject. The Caperon Royal, Caperonier Royal, Caperonier parfait, Caperon hermaphrodite, Caperon de Bruxelles, Caperon de Fontainebleau, Prolific or Conical "Strawberry" (Hautbois), or Double Bearing, is very well described; but the description of the Caperon Frambois, taken from Dueshesne, is somewhat imperfect; it is probably the Large Flat Hautbois. The Caperon Abricot, Caperonier Abricot, le Caperon abricoté, la Fraisier abricotée, is described as roundish or ovate, very large, brown-red, its flavor being the same as that of the common Hautbois. The Black and the Monstrous Hautbois are also mentioned; and finally the Belle Bordelaise, stated to have been obtained in 1854 by M. Lartey. This last appeared in foreign and English catalogues as a new sort; but on fruiting in this country it was at once recognized as not differing from the Prolific or Conical Hautbois; and with the latter Comte de Lambertye's description of La Belle Bordelaise perfectly agrees.

Fragaria collina.—Six principal varieties are enumerated, and numerous sub-varieties, which

have given rise to a confused nomenclature, which the author has cleared up to a considerable extent, though practically, as regards cultivation and utility, they are really not worth the trouble. Such for instance is the *Fragaria collina abortiva*, F. Concon, Breslinge Concon, Breslinge Borgne, F. Aveugle des Anglais, &c. The only one which, in our opinion, deserves notice in this group is the Green Strawberry. It is very different from the Alpine varieties, and from all others. Its flavor approaches nearer to that of the Pine-apple than does perhaps the flavor of any other fruit. The question is, will it hybridize with the Scarlet Strawberries? Doubtful. Or with the Pine or Chili? Very doubtful. But with the Hautbois there is every probability that it would cross, and something very remarkable might be the result. Many years ago it was found, we believe, growing wild, at a place called Goftonburn, near Belsay Castle, in Northumberland. At all events it doubtless exists somewhere in England and consequently may be obtained.

From the remarks in the second part of the work, which relates to the geographical distribution of the Strawberry, it appears that *Fragaria vesca*, from which the cultivated Alpine Strawberry has been derived, is the most widely dispersed species of the genus. It is found indigenous in certain localities from Iceland to Madeira; and it grows in Lapland, the Caucasus, Siberia and the Mongolian frontier of China. In the Alps it bears fruit at the height of upwards of 5000 feet; at 1400 feet it ripens in the beginning of July; at 3300 feet about the middle of July; and 4600 feet in August and September.

The third part contains descriptions of 40 varieties which the author considers proper for cultivation. These are arranged into several categories, according to different points of merit.—*Gardener's Chronicle*.

RACES OF THE CHINA ASTER.—M. Carrière writes as follows:

"When first introduced from China into France, towards the middle of the 18th century, the China Aster had single flowers of a pink, violet, or lilac color, but the stems were slender, so that the flowers were apt to droop. At the present time, from the numerous seedlings which have been raised from the Asters, plants have been obtained of great diversity in habit and appearance. Some are tall, with rigid erect stems, others are almost stemless, and all intermediate forms between these extremes may be met with. The flowers of these varieties present the greatest differences one from another in

color, in form and in size, and what is most remarkable is that they all reproduce themselves (keep true), and so form distinct races, even though grown side by side.

"Some of the races are so entirely different from the others that if their origin were not known, they would be taken for different species. It will readily be admitted that all these forms of Asters are the result of natural selection and not of hybridization, for with what pollen could the Aster be fertilized, since it is the only species of its kind, and there is no other species in cultivation among allied genera sufficiently near it to allow of cross fertilization? Again, these plants are rarely visited by insects(?), and these latter would have difficulty in reaching the stigma, as this is much shorter than the tube which contains it."

HORTICULTURAL CONGRESS IN LONDON.—During this month one of the largest gatherings of Horticulturists the world has ever seen will take place in London. We have not heard that our country will be at all represented, all to whom invitations have been extended, finding it not possible to go,—the proceedings will be looked forward to with much interest.

ONE HUNDRED VARIETIES OF HYBRID PERPETUAL ROSES, CLASSED IN COLORS, THAT FLOWER FREELY IN FALL—*Rose and Red.*—Alpaide de Rotalier, Alex. Fontaine, Alphonse Belin, Alphonse Karr, Anna Alexieff, Anna de Diesbach, Baronne Prevost, Beauty of Waltham, Belle de Bourg la Reine, Colonel Rougemont, Comtesse de Chabrilant, Comtesse de Courey, Duchess of Sutherland, Emile Dulac, General Washington, Gloire du Saere Cœur, Joseph Fiala, Jules Margottin, Kate Hausburg, La Esmeralda, La Tour de Crouy, La Duchesse de Morny, La Reine de la Pape, La Ville de St. Denis Le Geant, Louis Van Houtte, Madame Doumage, Madame Eugene Verdier, Madame Hector Jacquin, Madame Knorr, Madame Victor Verdier, Mathurin Regnier, Marechal Canrobert, Marechal Vaillant, Olivier Delhomme, Souvenir de la Reine d'Angleterre, Victor Verdier, William Griffith, Baron Gonella, Modele de Perfection.

Light.—Ange Gardien, August Mie, Caroline de Sansal, Duchesse de Magenta, Duchesse d'Orleans, Emotion, Imperatrice Eugenie, Lady Emily Peel, Louise Darzins, Louise Magnan, Madame Alfred de Rougemont, Madame de Canrobert, Madame Derreux Douville, Madame Freeman, Madame Rivers, Madame Vidot, Mdlle. Bonnaire, Virginal.

Crimson and Crimson Shades.—Admiral Nelson, Alphonse Damaizin, Admiral la Peyrouse, Baron Adolphe de Rothchilds, Baronne Pelletan de Kinkelin, Bernard Palissy, Charles Lefebvre, Claude Million, Clement Marot, Comtesse de Segnier, Duc de Rohan, Duc de Bassano, Eugene Appert, Francois Lacharme, General Jacqueminot, Gabriel de Peyronny, H. Laurentius, John Nasmyth, John Hopper, La Brilliante, Le Baron de Rothschild, Lord Macaulay, Madame Charles Wood, Madame Julie Daran, Maurice Bernardin, Mrs. William Paul, Princess of Wales, Senateur Vaisse, Souvenir de M. Rosseau. Vainqueur de Solferino.

Dark.—Abbe Reynaud, Alex. Dumas, Alfred de Rougemont, Admiral Gravini, Deuil de Prince Albert, Duc de Cazes, Emperor de Marce, Eugene Verdier, Jean Touvais, Marechal Souchet, Monte Christie, Prince Camille de Rohan.—*Gardener's Weekly.*

FIRE-PROOF PAINT.—The following recipe for fire-proof paint, is recommended by an engineering firm in New York, and indorsed by insertion in a good English authority, the *Building News*:—1 lb. best blacklead, 1 lb. of fine gilders' whiting, and $\frac{1}{4}$ lb. of Quarterman's patent dryer, the whole ground together finely with linseed oil, and then thinned for use with linseed oil alone, and applied like other paints. Wood thus covered will not take fire from sparks.

VINTAGE OF 1865.—The extreme heat which prevailed during the vintage, produced a curious result. The grapes being in general very ripe fermented in the vats with extraordinary rapidity. A great portion of the saccharine matter had not time to be converted into alcohol, and in countries like Burgundy, where wine-growers do not leave the wine very long in vat, fearing it may become hard and rough, the wine, on account of the saccharine matter remaining in it, will ferment for a long time in the cask. These wines will consequently require much care, not only from the danger of excessive fermentation during their transport while young, but even after they are lodged in the consumer's cellar. The excess of saccharine matter will render the wine liable to ferment at every change of weather, and if the cellar is not sufficiently cool the fermentation may produce acidity. There is no doubt that the wines of this year's growth are of excellent quality, but they will require great attention before they arrive at maturity.—*London Times.*

TAKING IMPRESSIONS OF FERNS.—In an article which appeared in your *Journal* of the 14th, copied from the *American Gardener's Monthly*, a plan is recommended for making impressions of ferns by means of paper sensitized with nitrate of silver.

It does not there state that the paper ought either to be salted or albumenized. If any person wishes to try to albumenize the paper himself instead of buying it ready prepared, let him take the white of three or four hen's eggs, and to every ounce of white of egg add half an ounce of water, beat it all up together till it is all frothed, adding ten grains of common salt to every ounce of solution. Previous to beating it up, pour it out in a flat porcelain dish to settle. When all the froth has settled, and there are no bubbles left, take a sheet of paper by two opposite corners and float it on this solution, taking care that the middle part of the paper touches the solution first, then gently lower the corners, leave it on for five or six minutes, then hang it up to dry. If kept thoroughly dry it will last good for a long time.

To sensitize it, dissolve one ounce of nitrate of silver in from eight to ten ounces of distilled or pure filtered rain water, float the paper, the albumenized side downwards, for five minutes, taking great care to allow no bubbles to intervene between the paper and the sensitizing bath. Hang up to dry in the dark, and place in sheets of blotting-paper to press it flat previously to using it. It ought not to be kept more than twenty-four hours before using it. Sponging or brushing the solution of silver on the paper with a camel's hair-brush does not answer, as it is almost sure to leave streaks, and it washes some of the albumen off before it gets fixed by the nitrate of silver. Print, tone and fix as recommended by the *American Journal*, only it is better to take a second impression from the paper, the first being a negative—(i. e., the fern appearing white on a dark ground,)—by printing from it again you obtain a dark fern on a white ground.

The above process is, however, far more troublesome and costly, and less artistic and durable than the following: Obtain some oil paints in tubes. The proper colors can be obtained from F. H. Searle, Stationery Court, Crystal Palace; the most useful being chrome yellow, No. 1, Antwerp blue, and burnt sienna. Gum or pin a sheet of foolscap paper on a board. Squeeze from one of the tubes about as much color as would cover a sixpence of chrome yellow, and about half the quantity of Antwerp blue, and add a few drops of sweet oil, (Lucca salad oil). Make a dabber of some cotton

wool tied up in a rag of cambric or fine calico, and rub the color over the paper till it is well mixed, and is about the consistency of printer's ink. Then take a fern leaf, or any other leaf which you wish to copy, lay it on the color, and dab it well with the dabber on both sides till the color seems to have covered the leaf all over without looking too wet. Take some plain white paper without any size on it—the best is good white demy, or lining paper, used by paper-hangers for ceilings or walls, double the paper, and place the fern flat between the folds of the paper, rub it carefully with the finger firmly all over, not allowing the leaf to move then open the sheet of paper and you will find a perfect impression of the leaf. The same leaf will do over and over again if it is only fresh dabbed with color, and more color and oil added when the color is too dry. Of course by a careful selection of blue and yellow, and toning with red or sienna if required, it is easy to match the exact color of every leaf, which can be readily told when the color is first laid on the leaf.

I have used this process with great success in making ornamental paper borders for rooms. It is exceedingly quick work when once the proper consistency for the color is found, and a few experiments will enable any one to do this. Stems can be painted in afterwards to join the foliage together, and any imperfections can be filled in with ordinary water colors, if a little ox-gall is used. Very beautiful effects can be produced, too, by printing lightly and painting in shadow with water colors, or, if a leaf is much veined, printing in a dark color, then washing the impression over with a light color in water colors. By printing leaves in varieties of colors, tipping the ends of ferns with brown or sienna, and painting in the stems artistically, very striking effects may be produced.

The great advantage of this over the photographic process is, that being printed in oil the impression is quite permanent, no washing, fixing, or after-toning is required, and with three tubes of color costing 6d. each, and wall lining paper from 1s. to 1s. 6d. per piece of twelve yards, many hundreds of impressions can be taken, and any size or shape of paper can be used, whereas in photography you are limited by the size of the porcelain floating bath. It is of great advantage in wood or stone carving where an accurate shape of leaf is required, as one can take specimens during the summer of any kind of foliage, and they are much easier to carve from than dried leaves, as they are much less perishable.—*X. Y. Z., in London Jour.*

TO MAKE SUPERPHOSPHATE.—A correspondent of the *Irish Farmer's Gazette*, wants to learn the best method of making superphosphate, with proportion of bones and acid. The editor gives the following directions:

“Saturate the bones with as much warm water as they will absorb, without running off; open the heap as if for making mortar, pour in the sulphuric acid in the proportion of $\frac{1}{2}$ cwt. to 1 cwt. of dry bones, and mix the whole well up; make into a heap, and cover well with fine, dry earth, turf mould, ashes, or saw-dust; leave it to digest for a week or ten days, and then mix some of the above drying stuffs to absorb the superfluous moisture and render it of easy distribution.”

THE CEDARS OF LEBANON.—The cedars grow on a rocky knoll lying in the embrace of a great semicircular basin in the mountain side. They stand alone, as best befits them, without any other tree near. About 400 of them remain, but only a few of these heard the sound of Herman and his axe-bearing host. If these few had been more accessible, I believe the modern Hermans would soon have demolished them. They all stand within a very small circuit, and the seven oldest are called the Apostles. These seven alone are believed to be real ancients, i. e., to date from a time before the kings of Israel, mighty, wise and strong. They stand in the centre of the whole group, surrounded and guarded by their descendants and kinsfolk. The natives almost worship these trees, and ascribe to them a sentient existence. They hold an annual festival beneath their branches, which, being now near at hand, we have been strongly persuaded by the chief of a neighboring village to stay and witness. All the world and his wife comes up to it; and the feast, though nominally a religious one, is said to lead to a good deal of irregularity. So it is now, as of old, when the prophet accused the people of asking counsel of the stocks, they sacrifice upon the tops of the mountains, and burn incense upon the hills, under oaks and poplars, and elms, because the shadow thereof is good. It is, however, a glorious place for solemn worship—truly a temple not made with hands—in the bosom of the great hills, and beneath the shade of trees pregnant with solemn associations of the past.—*Good Words*.

A MAGNIFICENT ORCHID. — Four hundred blossoms of *Cattleya Mossiæ* at one view! This is a sight truly worth a journey from the Land's End

to witness, and it is a sight that might have been witnessed a few days since, if it may not even now, in Mr. Warner's Orchid House at Broomfield, near Chelmsford. And such blossoms too! Not puny things with washed-out colors, or pallid from sweltering in excessive heat, but located in a ventilated house, quite enjoyable, and presenting richly-marked colors in marvellous variety, and in all the vigor of robust health—the individual flowers measuring some 7 or 8 inches across, and the petals in some cases, being as much as 3 inches in breadth. Mr. Warner has certainly learnt the secret of managing *Cattleya Mossiæ* to perfection; and consequently such a picture as his show-house presented at the time of our visit, is not, we venture to say, to be paralleled in England, or Europe, or the world!

No one who has not seen a large display of these charming *Cattleyas* in blossom at the same place and at the same moment, can have any idea of the endless variety which occurs amongst them. Scarcely two plants are alike, and some are most remarkably distinct from each other, so that in future it will not be enough for the Orchidophilist to place *Cattleya Mossiæ* in his collection; he must make up his mind how many of its forms he will admit, and then set about seeking out those which best suit his fancy.—*Gardener's Chronicle*.

A FOSSIL SEQUOIA IN ENGLAND.—The plant which, from the abundance in which its remains are scattered over the whole of this formation, from the highest to the lowest of the beds, seems more than any other to have supplied the material for the Bovey coal, is nearly related to that giant of the vegetable kingdom which has been found living in California. The name, indeed, applied to the fossil plant is *Sequoia*, that to the living one is *Wellingtonia*—the specific name of *Couttsiæ* being appended to the former to testify the large share that lady has had in its discovery; but the best botanists are of opinion that its cones, branches, leaves and shoots, all of which have been exhumed from the Bovey formation, concur in indicating at least a general resemblance to the *Wellingtonia*. And, what is still more remarkable, this same tree, or one nearly allied to it, spread during the tertiary period over all Europe, from Greenland to Italy, and extended even to Vancouver's Island, in North America. How, then, are we to reconcile its present contracted range with its wide geographical distribution? Not, as it would seem, by appealing to a change of atmosphere; for if that had been

the cause, it would still have maintained its ground in Italy and other warmer regions, from which it has now entirely disappeared. Nor are its only living congeners—namely, the *Cupressus* (or *Sequoia*) *sempervirens*, and the *Wellingtonia* (or *Sequoia*) *gigantea*—particularly susceptible of cold. On the contrary, the former will grow in sheltered situations throughout England, and the latter resisted, in 1860-1, weather so inclement as to have proved fatal to the deodar in various parts of this country. The present limitation, therefore of the *Wellingtonia* within so narrow an area, seems to point to a natural law, which we recognize by its effects, without being able fully to divine the means by which it is carried out. This law is, that a certain limit has been assigned to the duration of species as well as of individuals, and that this limit is approaching in the case of the monster of the vegetable kingdom alluded to. Like the Dragon-tree of Teneriffe, or the *Callitris quadrivalvis* of Algeria, it is indeed vigorous where it still lingers; but, like these and others that might be named, the conditions of the climate in other respects seem to have become less propitious, although it remains to be seen whether the specimens introduced by Messrs. Veitch & Pince into their gardens at Exeter may not show that the tree will still flourish in a country where its congener, the *Sequoia* *Couttsiae* once so luxuriated.—*Dr. Doubeny in address to Devonshire Science Association.*

GRAFTING ON HARDY STOCKS.—There is a prevailing impression among gardeners that the stock communicates to the species or variety of tree or shrub grafted upon it a portion of its own power to bear cold without injury. This idea, however, is wholly erroneous, as is amply proved by the tender kinds of Roses on the briar being destroyed by severe frost, and also by the circumstance that the branches of every variety or species of tree are much more easily destroyed by frost than its roots. Physiologists agree in their views as to our grafting on stocks which are of less growth than the scion, and consider the practice wrong where extensive growth and durability is wanted, but eligible whenever it is desirable to diminish the vigor and growth of the tree. Mr. Knight draws these conclusions from his experience:

“That the stock of a species or genus different from that of the fruit to be grafted upon it can be used rarely with advantage, unless where the object of the planter is to restrain and debilitate; and that where stocks of the same species with the bud or graft are used, it will be found advantageous

generally to select such as approximate in their habits and state of change, or improvement from cultivation, to those of the variety of fruit which they are intended to support.” Mr. Johnson, in the *Science and Practice of Gardening*, p. 200, states—“The only situation in which we can believe that the stock of another can be advantageously employed, is where the soil happens to be unfriendly to the species from which the bud or graft is taken.”—*Journal of Horticulture.*

Horticultural Notices.

STRAWBERRY SHOW OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

These meetings, inaugurated a few years ago, have proved very popular. The Society has voted to hold the exhibition this year in Germantown, at the Town Hall, in June, the exact day to be fixed and announced so as to exactly suit the season. It will be announced in our local papers, and in the June Number of the *Monthly*.

PENNA. HORTICULTURAL SOCIETY.

The April meeting was one of the most admirable ever held—not perhaps in grandeur or extent, but in the real merit of the objects exhibited. The Azaleas of Mr. Robert Buist, exhibited by his foreman, Mr. Chinnick, were most admirable. They were exactly our idea of what good specimens should be, not monstrous plants in prodigious pots, but well grown plants in small pots, which would encourage every one of even limited house-room, to try and grow a collection like them, and *compete* with them, which is the main object of a Horticultural Society. None of the plants were over three feet high, and projected very little over the sides of the pot, but they had hundreds—we might nearly say a thousand—flowers on each specimen. The form, too, in which they were trained was very good. A pair of wings, slightly curved, projected from the sides, and took away the stiff appearance of the mere conical or round shape so often employed. This was particularly well accomplished in an “Iveryana,” which was particularly pretty, and a very good variety for this style of culture. Of the varieties exhibited Alexander the III was our favorite. This is a large white, with heavy crimson feathering, and prettily corrugated edges. Bernard Andree is also a good one to grow, from the fact of its putting up a few green blades between the deep vermilion rosy flower.

On another table was a gorgeous display of hybrid Rhododendrons, from the green-houses of Peter Mackenzie & Son. There were over twenty varieties, and great improvements on what we have hitherto had, beautiful as our readers know they are. Glennyana, a pure white, was very fine, and amongst others of the best we noted Prince Camille de Rohan, Souvenir de Jean Byls, Maculatum, Bysianum, and one with double flowers called Fastuosum plena.

Messrs. Mackenzies also had a fine collection of new Azaleas, small and well bloomed plants.

In their collection of new plants we noticed a pretty variety of the common Saxifraga sarmatosa, with striped leaves, called "tricolor," and a variegated-leaved Rhyncospermum jasmimoides.

Mr. Dreer had some Roses in bloom, of very fine varieties. Triomphe d'Alencon, a fine, large double crimson, hybrid perpetual being one of the most striking. He had also some very fine German Pansies. Mr. James D. Whetham's gardener had also some of the pretty French strain of fancy Pansies, which were well grown and much admired.

There were several collections of Cinerarias, but showed no improvement either in growth or varieties over past years. In the collection grown by Mr. Hibbert, gardener to Fairman Rogers, Esq., was a plant with a fine bloom of A. J. Downing Camellia, (the spotted variety,) showing it when well grown, one of the most desirable of the family. In new Camellias, Mackenzie & Son had tricolor imbricata plena, of the color of the old tricolor, but large and double, and will prove a favorite variety. Mr. Donald McQueen, gardener to Joshua Longstreth, had one of the best grown Lycopodium densa we have ever seen, looking like an immense pincussion of green velvet.

Strawberries were exhibited by Mr. Blaine—Triomphe de Gand—though forced, they were as large as natural raised fruit, though rather paler in color.

In the vegetable line there was not much particularly worthy of note, except that some of the finest Salsify we ever saw came from Mr. James McDonald, gardener to M. Baird, Esq.

LEAVENWORTH HORTICULTURAL SOCIETY.

GRAPES IN MISSOURI AND KANSAS.

The extraordinary success of the grape in Missouri and Kansas renders everything relating to its prosperity of value to our readers. The Leaven-

worth Horticultural Society, appointed a committee to report on the condition of Horticultural vineyards of that section last fall. It is better published now, as it will prepare our friends for taking notes of growth and other points of value, now that we are entering on another grape season. It may be interesting to note that at a large meeting at Hermann, Mo., the speakers were almost unanimous upon the following points:

"First—The Concord and Hartford Prolific are the best table and market grapes for Missouri, the latter ripening about two weeks in advance of the former, and these with the Norton's Virginia, Herbemont and Clinton, for wine, should constitute the vines of Missouri, at least until something better turns up.

"Second—That the close pruning of this country, which has been adopted from the practice on the Rhine is altogether wrong.

"Third—That vine growing is to become the great business in the southern half of Missouri, and the products of our vineyards will in a few years exceed in value any staple crop of the State."

The following is the

REPORT OF THE COMMITTEE ON GRAPES.

The undersigned committee appointed by the Leavenworth County Horticultural Society, to examine the different vineyards and vines in cultivation in our vicinity, and report their condition to the Society, submit the following report:

Having examined the vines and vineyards of the following persons—Dr. W. Housely, Dr. J. Stayman, Dr. J. Davis, Wm. Tanner, E. Lallier, F. Goddard, M. J. Parrott, F. P. Grant, S. R. Putnam, C. B. Brace, P. Liberton, M. Rivord, J. Galliard, E. P. Goddard, and Mr. Backus, we find the Catawba principally in cultivation and generally very much diseased. About two-thirds of the crop has rotted, and the leaves have dropped from the vines, so much so that in many cases the fruit will not ripen. Mr. J. Galliard's vineyards appears to be an exception, his Catawbas being tolerably healthy, and the fruit has rotted but little, but the spring frost had so much injured the vines that he did not have half a crop. As this vineyard is one of the oldest in the county, and has always produced the finest grapes, and has been free from disease we will be more particular in its description. It is located twelve miles southwest of the city and river, and about two miles west of 'Big Stranger,' on the Lecompton road, and within thirty feet of the highest land, and well exposed to the north and south winds. Though this vineyard lays high, it is within ten feet of the lowest ground immedi-

ately around it. The soil is rich, black, porous loam, with a small quantity of fine sand, from two to three feet deep, on a clay subsoil formed from the decomposition of the limestone bluff immediately above it; with a gentle slope towards the east, and a small creek running close by the whole length of the east side of it, with a steep bank of about ten feet, the water clear and apparently drained from under the vineyard, which is narrow and extends along the stream, and contains three acres; the rows running east and west, being eight feet apart and five between, and trained on stakes on the bow and spur system, not different from others.

Mr. Grant's vineyard is located on a steep hill, well exposed to the east, and a portion of it is on a rich bench just below the bluff, and at the same elevation as the first described, and contains three and a half acres. The rows being four and some eight feet apart, and four feet between the rows; being principally Catawba and Isabella. The first rotted very much, but those left will ripen tolerably well; the latter has not rotted much but dropped their leaves and will ripen poorly. The soil of this vineyard varies from the richest black loam to light sandy gravelly soil. The vines had a very heavy crop set, and had it not been for the rot would have been an extraordinary yield; the quality of the grapes which had ripened were excellent. This, and the first-mentioned, are decidedly the best we saw.

Mr. Putman's vines are located on the same elevation, but the greater proportion were not in bearing, and those that were had nearly all the fruit gathered, so we cannot report so definitely respecting the rot, but from what we saw they appear to be as healthy as Mr. Grant's.

Mr. Parrot's vineyard is located on the top of the hill, back some distance from the bluff. His vines are not in bearing, but they have dropped their leaves and look unhealthy, except Concord, Hartford Prolific, Norton's Virginia, Clinton and Taylor.

The vineyard of Mr. Tanner, located at Tonginnoxie, on the first bench below the bluff, within 30 feet of the highest ground, on a very rich, black loam formed from the wash and decomposed limestone, and sloping to the east, mostly Catawba, are healthy, and have no appearance of rot, but too young to bear much.

Dr. Stayman's vineyard, located at the same place, and like elevation and exposure, were too young, but the Catawbas look sickly, and had made a poor growth, were unhealthy. The Catawba,

Isabella, Diana, Delaware and Rebecca, back from the bluff and on the top, were sickly, and dropped their leaves, but the Clinton and Concord were healthy.

Dr. Housley's vineyard is located on lower ground than those above mentioned, on rich, black, porous loam, formed from the wash and decomposed limestone, on a clay soil. He has numerous varieties in cultivation which have dropped their leaves and rotted badly, except Hartford Prolific, Concord and Clinton.

Mr. Backus' and Liberton's vineyards are on about the same level as Dr. Housley's, and are in about the same condition, except the highest part of Mr. Backus', which is more healthy, and will ripen the fruit left tolerably well. The rows of this part run east and west, and are eight feet apart. The soil is a rich, black loam.

Mr. Liberton's vineyard is a thin, sandy gravel, to a rich, black loam, with a stiff clay subsoil, and trenched, exposed to the east, and trained on stakes, four feet by four apart, and being about four acres—all Catawba. This vineyard has nearly failed the last three years, and appears to be badly diseased.

All the other places examined are on lower ground, and much more diseased, the leaves and fruit having dropped, and the small portion left will not ripen, and may be considered a total loss, except Mr. Lallier's Catawbas which are on the lowest ground, on the bank of the creek, about 30 feet above the water. They look tolerably healthy, but were injured by the spring frost so he had no fruit.

At Mr. Tanner's vineyard, and also at Dr. Stayman's, in the valley, we found a large quantity of the Concord which bore a heavy crop, and were perfectly healthy and numerous; other varieties were in various conditions, but not considered worthy to report on at this time, except the Iona and Adirondac, two very high priced and extolled Grapes, which we found had dropped their leaves and were very much diseased, and Creveling, which promises well. In every location, without an exception, we found the Isabella, Diana, Delaware and Rebecca, they had dropped their leaves and were unhealthy.

And in every location, without an exception, where we found the Hartford Prolific, Concord, Norton's Virginia, Clinton and Taylor, they were healthy.

WM. T. HOUSLEY, Chairman,
J. STAYMAN,
T. GODDARD,
EUGENE LALLIER.

THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
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Hints for June.



FLOWER-GARDEN AND PLEASURE-GROUND.

Towards the end of June propagation by budding commences. This is very commonly employed with the rose; but ornamental trees and shrubs may be increased in the same way. Closely allied species must be chosen to work together.

Evergreen hedges will require attention as they grow. Where the height desired has been attained the top and strong growth should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting back the top growth at this season, the conical form can still be preserved.

Cut off the flowers of roses as they fade,—the second crop will be much better for the attention. Seeds of all flowering plants should be also taken off; all this assists the duration of the blooming season.

Bulbous roots, when done flowering, and the leaves have faded, should be taken up and dried,—mixed with chaff, or other light loose material, placed in paper bags and stowed away in a dry place till Fall.

Dahlias should not flower early. Keep them growing till Fall, when they will flower finely.

Propagation by layering may be performed any time when strong vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated no other way. Cut a notch on the upper side of the shoot, not below as all the books recommend, and bend down into,

and cover with rich soil. In a few weeks they root, and can be removed from their parents. Stakes for plants should be charred at the ends before using, when they will last for years.

Flower-beds should be hoed and raked, as soon as the ground dries after a rain. Loose surface soil prevents the under-stratum drying out. Peg down bedding-plants where practicable. Split twigs make the best pegs. In dry weather do not water flower-beds often; but do it thoroughly when it is done. See that the water does not run off, but into and through the soil.

Mow lawns often, if you would have them green and velvety. Keep the scythe sharp; usually mowers do not use the grindstone often enough. Common farm scythes are not fit for lawn use; rivetted, and short scythes are the kind to get. If a lawn is mowed often, the grass need not be raked clean,—the sappy blades soon wither, and make a manure for the roots. The longest should be raked off, or the lawn will have a littery appearance.

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 "worm" or larvæ of the Rose-bug follow, with their damaging depredations, have them crushed as fast as they appear.

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 benefit, by keeping the surface spongy, and the substratum cool.

Many herbaceous plants, such as Phloxes, Hollyhocks and similar plants, that are scarce and valued, may be propagated now very easily, by taking por-

tions 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.

All those who have set out trees the past Spring, should take the first chance of a dry spell to loosen the soil deeply about them with a fork, and immediately after beat it down hard again with the heel, or some better "clod crusher." Innumerable lives of trees may be saved by this simple practice.

FRUIT GARDEN.

Grapes first 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 trellises; for large vineyard culture, though the same principles hold good as far as they go, they will vary in their application.

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 become a foxy red. Some Grape-growers of eminence, in view of the 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.

Watch newly planted fruit trees. If they 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. Over-bearing 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.

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.

VEGETABLE GARDEN.

Peas for a Fall crop may be sown. It is, however, useless to try them, unless in a deeply-trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless, have great difficulty in getting Fall Peas to go through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for Celery, and are then much more successful with them.

Cabbage and Brocoli may still be set out for Fall crops, also requiring an abundance of manure to insure much success. Lettuce, where Salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind; but the varieties of Cos, or Plain-leaved kinds, are good. They take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

At the end of June some Celery may be set out for early crops, though for the main crop a month later will be quite time enough. It was once customary to plant in trenches dug six or more inches below the surface; but the poverty of the soil usually at this depth more than decreases the balance of good points in its favor. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

In our second volume a correspondent described a mode of employing charcoal for the purpose, which produces fine, firm and crisp stalks. Sawdust, shavings and similar matters have also been used with beneficial results. Very rich soil is essential to fine Celery, and well-rotted cow-dung is one of the best of manures for this crop.

Beans produce enormous crops in deeply trenched soils, and are improved as much as any crop by surface manuring. We hope this method of fertilizing the soil will be extensively adopted for garden crops this season. Those who have not yet tried it will be surprised at the economy and beneficial results of the practice.

Cucumbers for pickling may be sown this month, and Endive for Fall Salad set out. Parsley for Winter use may be sown now in boxes of rich soil, and set in a cool, shady place till it germinates.

Asparagus-beds should not be cut off after the stalks seem to come up weak, or there will be but a poor crop the next season, and the beds will "run out" in a few years.

Tomatoes do best when suffered to grow flat on the ground; but in such cases the soil should be covered with a mulch of straw or litter to keep the Tomatoes from getting soiled and rotten by dampness. Brushwood is an excellent material for them to lie on, and they seem to thrive well with it about them.

Herbs for drying for future use should be cut just about the time they are coming into flower. Dry them in the shade, and after sufficiently dry to put away, tie them in bunches, and hang in a cool shed, or place them loosely between the paper, and stow away in cupboards or drawers,—the last mode is by far the cleanest and most approved plan with the best housekeepers. Some, indeed, powder the leaves at once after drying, and put away in bags ready for use.

Communications.

MY SYSTEM OF GROWING GRAPE-VINES FROM EYES FOR VINEYARD PLANTING IN AMERICA.

BY CHARLES GRUNEBERG, WEST GROVE, PA.

There are two different methods I practice in this country, after many laborious experiments, valuable time and cost.

The first plan is the out-of-door propagation of the readier and more willing kinds. For these I procure well-ripened wood, as late as possible in the Autumn before the severe frost sets in, cut it into single eyes and plant them without delay in rows on a bed cross-ways in the open ground (rather exposed than sheltered) which is 5 to 6 feet wide and in length according to the quantity of vine eyes, and prepared with the best possible soil as generally used for that purpose. After planting them I give a cover of two inches of half well seasoned loam, and half coarse sand well mixed, and do not water them but let the soil be tolerable damp in good working order. After two weeks planting or more, if the weather permits, it not being wet, I cover the bed 3 feet with half decayed horse-manure, mixed with half fallen leaves, and lastly line the whole bed 3 feet with the same material,

no frost or moisture being able to penetrate,—not even 20° below zero.

In the beginning of April I remove the lining and covering, and place over the beds frames with sashes, and in a very short time the eyes make their appearance; by degrees I give air when the weather requires it. As the plants grow I raise the frames, and ultimately remove sashes and frames altogether, and leave them to the open air without disturbing or transplanting.

The more obstinate kinds I raise in-doors with and without bottom heat in sand beds only 3 to 4 inches deep; the eyes being covered half an inch. I have now two beds in full operation, one cold, one warm; the cold bed is arranged on the front platform of a greenhouse, 100 feet long; the warm bed is in a half lean-to propagating house, also 100 feet long, now filled with a second crop.

Of these latter I likewise procure the wood and cut it up as above, but instead of planting the eyes at once on the beds, I for two months place them in barrels between layers of moist sand. About the middle of February I plant them on these beds in-doors, and as soon as struck, plant them in well prepared pits and treat them as the out-of-door eyes.

This is the mechanical part of that business and my method here, and if the watchful eye of the experienced propagator but assists, final success is unavoidable.

[There are many useful hints in Mr. Gruneberg's paper that our readers will value very highly. We fear, however, we misunderstood the purport of our esteemed correspondent's first article. By his contrast of the vineyards of Europe, the vines of which are raised wholly out of doors,—with the American methods, we supposed his plan was something of the same kind,—but it now appears the condemned glass raised vines are to a great extent the result of this plan as much as the abused one of Mr. Howatt.—ED.]

WHEN DOES NEW BARK FORM?

BY FOX MEADOW.

A neighbor of mine, a Mr. Archer, has an Apple tree growing near his stable and rather in his way of driving in and out, and as the tree annually produced nothing but small, scrubby, wormy fruit, he determined to kill the poor tree. A cat will sometimes play with a mouse a long time before she devours it, so my friend Archer thought he would eke out his revenge on the profitless tree in some other way than by chopping down, so he began

stripping the bark from the tree as high up as he could reach, which was about seven feet from the ground, and tore it down in strips until he had torn away every bit of the bark from the trunk as well as the large roots leading into the ground; so cleanly was this done that not a particle of the bark, new or old, remained on the trunk.

Happening to look across our line fence one day I wondered what my friend Archer had been putting on the the trunk of this Apple tree, for the appearance at a distance looked something like a cream color paint; so I went across the lot to see, when I beheld to my surprise that the poor tree had been flayed alive!

"Ho, Archer," said I, "this is too bad."

"Well," said he, "I thought I would make him *wince* and die by *degrees* for his base ingratitude;" and he replied, "if he gets over *that* why he can live as long as he pleases."

"Well, it will soon die," said I, "for now the middle of June, full leaf, and Apples nearly as large as hickory nuts it cannot sustain itself many hours."

The tree is alive to-day, and the Summer that it was barked as described, it produced the best crop of perfected, sound fruit that Mr. Archer had ever seen on the tree.

I watched the result of this "flaying alive" attentively, expecting every day to find the tree dead, but nothing of the kind. I perceived in the course of a week or so, small, warty excrecences being exuded from the pores of the wood. These were minute and intense globular cells in fact, which in a short time united on and over the whole surface of the wood, forming ultimately a new bark for the tree. This tree has produced good clean fruit ever since, which is now some six years since it was barked.

I once had a pet bird belong to the genus "Psittacus" who once took the liberty to get out of her cage which hung in an Orangery during the Winter, and "Pretty Polly" amused herself nearly a whole day on a fine specimen of Lemon tree by biting the bark off and lacerating the wood. In many places on the trunk and branches every portion of the bark was bit away, in fact the tree was so mutilated that it was removed to a "lumber hole" out of sight, where it neither got water nor light. In the month of May when "turning-out" time came, we discovered this plant still alive, when it was then put out of sight behind some Shrubbery, where it stood all the Summer, getting no water but that which fell from the clouds of heaven. However, accidentally falling on it in the Fall of the year, the

plant was still living and growing, with new bark covering Polly's rough surgical operations.

From these and similar facts, we may well inquire, "WHEN DOES NEW BARK FORM?"

[We have seen exactly the same process, as described by our correspondent, on a Cherry tree barked in June. It is worthy of a close study.—ED.]

REPLY TO "BOY READER."

BY J. P. NORRIS, PHILADELPHIA.

In the April number of the *Monthly*, a correspondent, who signs himself "Boy Reader," makes a few remarks criticizing our article on the Brown Thrush, that appeared in the number of the *Monthly* for December, 1865, and reflecting upon our knowledge of oology.

"Boy Reader" does not state where his "region" is, and, therefore, we are unable to say where the Brown Thrush breeds in his locality. Audubon says that this bird makes its nest in a "*brill bush, a sumack, or the thickest parts of a low tree*, never in the interior of the forest, but most commonly in the bramble patches which are every where to be met with along the fences or the abandoned fields. *Sometimes it is laid flat on the ground. To the eastward, where the denseness of the population renders the bird more shy, the nest is placed with more care.*" The italics are our own, and will serve to show that we were correct in our description of the site of the nest of this bird; for we described the site of their nest as it is most commonly to be found in the Eastern States. The other principal writers on Ornithology all give like sites for the nest of this bird. We have found several hundred nests of the Brown Thrush in our lifetime, *and we have yet to find the first nest that was not on a bush or in a hedge.* We refer to the locality of West Chester, Pennsylvania. We have also received very many nests of this bird from our egg-collectors in different sections of the country. *We have never yet received any eggs of this bird found in a nest built on the ground.* We must therefore draw the conclusion that it is only the exception when the Brown Thrush breeds on the ground.

In regard to the number of eggs, we have never found a nest, or received one, and in fact have not one in our cabinet, that has over four eggs in it. Out of twelve nests from Winnebago, Illinois, none contained more than four eggs, and all were found on Osage hedges. Out of a hundred or more eggs, all entered on our Egg Register, all were found on small trees, bushes, or hedges, and no nest contained more than four eggs. We are aware that

Wilson gives the number of the eggs to be five, and Audubon from four to six, but still we can only state, that, so far, we have never found a nest of this bird, or received, or even heard of one that contained more than four eggs.

In conclusion, we would recommend "Boy Reader" to extend his observations, and then he will, no doubt, have the pleasure(?) of finding that we were correct in our statements.

NATURE'S LAW OF COLORS.

BY E. FERRAND, DETROIT, MICH.

I have just received the *Monthly*, in which I find a very valuable article, in answer to mine of February, of Mr. Henderson on which I beg to say a few words.

The allusion to the "gentleman from France" in connection with the reply to my article is, at least, out of place here. When I replied to Mr. Henderson I was not moved by such a spirit.

To avoid any mistake from Mr. H.'s "illustrations," allow me to state here that no trees, or plants or roses of any kind have ever been sold at auction in New York coming from my father's nurseries in France.

As regards the colors, I had a good idea before that the scarlet of Mr. H. was something like the purple of Tyre,—a color lost to the living age. But I maintain that I find the three colors alluded to in varieties of the Hyacinth (to name one plant that all your readers are acquainted with) to wit: scarlet, blue and yellow. As regards the botanical distinctions between species and varieties or genus, I am not prepared to discuss that point with Mr. H., lest he might have known some other gentleman from France, 20 or 30 years ago, who could have sold a worthless thing, and afterwards sworn to his customers that he would not deceive them again till the next time.

GROWING GRAPE-VINES UNDER GLASS —POT PLANTS AGAINST BROAD BORDER PLANTS.

BY GERALD HOWATT, YONKERS, N. Y.

I will assure Dr. Taylor that I meant no slur on the opinions of any one who has things to sell. I am a seller myself, both of fruits and vines. I meant to assert no more than I hope to prove that pot growing vines are most profitable to vineyardists to plant.

As to their being any thing medicinal in the pots, the makers who know the ingredients can tell him better than I; but as to growing them better and

stronger in pots than in borders, which is the real question, I say decidedly that there can be few practical plant growers but will say so. The attention they get promotes better growth and vigor than they can get any other way.

Can Dr. Taylor or any other man take a vine just struck in the cutting pot, put it into a frame, shade and treat it in the best possible way, produce as good a plant as a grower that shifts from the cutting pot into a thumb pot; when that is filled with roots shift to another pot, and so on to a six inch pot; those vines get four or five shifts before they reach the vineyard. If he will produce as good a plant by his system in August and tell us how to do it with the same number of roots he will do more for the grower and vineyardist than any man has yet done.

The *coiling* of the roots I don't mind; only get them. In pot growing vines you get the fibres intact, and when planted, in three or four days by lifting you will see all around this ball a mass of white fibers to fill your ground.

All practical men know the evils of "over-potting;" so it is by putting struck vines from the cutting pot to the bed. I plant in September this Spring's struck cuttings, I then save one year's growth, as those plants have more roots than two year old from broad borders. The roots are not shaken out, neither is there any necessity; your plants receive no check as it is like shifting from one pot to another; your roots all start. Will a nurseryman take up his plants out of broad borders and exhibit them on an assorting table in September? Will a grower plant them shaken off leaves all on? Certainly not. If it can be done I should like to know how to do it, and save the plants alive.

I am running a tilt against no system. I wish merely to prove that vines cannot be grown as large, with as many roots, and be planted in the Fall out of borders, as they can out of pots; thus saving one year. If it can be, let us hear how it can be done. Potting them 30 inches, and six inches apart, is done to work a cultivator. I promise, if he can at 6 inches apart, and on this system, produce me as many roots and as much wood as pot vines; then I will go for Spring planting.

As to stopping the vines the first year (eyes), I do not believe in it; I want to grow them ten feet long if I could out doors; under glass I have grown them 25 feet, hothouse varieties. By growing the leader you get the more roots,—the borders I referred to had glass over them, I presume, as they were in hotbeds, size 8 and 10 feet long, and the sash bars on, and no stronger growth than I refer to. Short or

long jointed the first year is of little consequence as they are cut down to two or three eyes from the root in the Fall and in the Spring only one eye left to grow the second season. The roots of one Summer's vines grown in pots are riper than two year old out-door vines,—at least all that I have ever seen.

Mr. Fish, of Rochester, is greatly offended for my naming parties as being growers of pot plants; I did it to let people know where they could be had; as few make a speciality of it; and that information was as useful, under the circumstances, I contend, as any that could be put in the *Monthly*. It cost me a good deal in time and money to find them out, and in justice to those gentlemen named, I will state that none of them were aware that such information had been given by me until they saw it in the *Monthly*; since then I have seen two of them, and they were displeased that I did so. Had any one done it before I had, it would have saved me the time and *expense of going to Rochester*. I went there thinking to find what I wanted, but I could not. Had I got them there I should have said the same of Rochester as I did of New York and New Jersey; but that is not the point that Mr. Fish, Dr. Taylor or Mr. Gruneberg are driving at,—their assertion is, that broad border plants are best. They do not say this because they have them to sell, for they say that they cannot fill their orders; but it is clear it costs less to raise broad border plants than it does pot-grown plants; and with the same expense they would have still fewer plants to sell; but we, as consumers, want what will pay us the best, not regarding the first cost. It may be said, why is it that those who have found it pay have not kept it to themselves and have the market. Experience has proved that the more fruit there is in market the more the consumption; and quick sales are what pay. Men I have known to keep Grapes until middle of Winter, expecting a high price, had to sell at first price. The simple reason is, that the public generally are not aware that Grapes can be had then.

Mr. Editor, if you will allow me to state that I propose putting out a vineyard of from 4000 to 5000 plants this coming Sept.; if Dr. Taylor, Mr. Fish, Mr. Gruneberg or any other gentleman in the business will furnish me plants from 4 to 6 feet high (I have had them 8 feet in pots) roots as good and ripened as well as pot-grown, insure all their growing, I will let them plant them. I shall be very happy to make a contract with them, as it will save me a good deal of money in not having to buy the more expensive pot plants. When I make the

contract I shall remit to you \$10 for this advertisement, and which I shall consider the best invested money I have ever used.

The advantages of Fall planting you will find fully explained in my article on Vineyard Growing.

[This article we shall give next month.—ED]

ON THE MOVEMENT OF SAP IN THE SHELLBARK HICKORY.

BY JOHN TOWNLEY, MOUNDVILLE, WIS.

(Concluded from page 141.)

At sunrise, on the 27th, the temperature was 7° below zero, on the 28th it was 33° above and 42° at noon, sap flowed freely this day from the butt of the trunk, and from the places where branches had been cut off. I put a saucer underneath the S. E. corner of the butt where the icicle had previously formed, and obtained a quantity of sap, notwithstanding the saucer had slipped away by the melting of the snow underneath it. I enclose a portion of the evaporated product, which I take to be sugar, chiefly. On the 29th the temperature was 34° at sunrise, I did not notice it higher than 38° during the day, which was sunless, damp and chilly; but as the temperature was high, I expected the sap would be flowing freely as on the preceding day; and as Lindley and Balfour say, that the office of the vasiform tissue is to convey fluids with rapidity in the direction of the wood, I cut off a side branch of a thrifty young hickory with a view to watch the vasiform tissue from the first movement of the sap to ascertain whether the sap would now flow from this tissue while it was yet in communication with the roots, or from the more compact part of the wood, as I had hitherto found. But after waiting some time no sap whatever appeared from the cut surface of the tree. I now took a portion of the branch to the house; the temperature of the room was 72°, and instead of sap flowing speedily from the wood as on all previous trials, a ring of the concentrated sap immediately issued from the bark, encircling the wood both at the upper and lower end, but no sap issued from the wood. As the branch was only $\frac{3}{8}$ ths of an inch in diameter, and smaller than any I had previously used, I cut from the branch of the tree felled on the 16th, a piece about $1\frac{1}{2}$ inch in diameter, and from the upper part of the same branch another piece $\frac{3}{8}$ ths of an inch in diameter. I noticed that no sap was issuing from the stump nor the trunk;*

* A young black ash which had been cut for a binding pole when hauling, say about the middle of February was laid on a fence near my stable, I noticed that sap oozed from the cut surface every morning when bright warm sunshine succeeded a compara-

but from the two pieces of wood sap began to flow on the inside bark before I reached the house, and not exclusively from a few of the external layers of wood on the side of the branch which had been exposed to the sun as had previously been the case if sap showed at all. When exposed to the higher temperature of the house the sap soon issued in quantity from the bark, but not sufficient to run off or drop, owing, however, rather to the viscosity of the sap than to a lack of quantity. The wood of the smaller piece remained dry. In the course of about a half hour globules of viscid sap appeared on the wood of the larger piece, but instead of being confined at first, chiefly to the circumference of each layer of wood as I had observed on the 22d, the globules of fluid of the last formed layer were confined to the innermost half, the part next to the bark being dry. On the wood of the second layer, from which more sap issued than from any other recent layer, and on the wood of the third and fourth layers, the drops of fluid were about equally distributed as I had previously observed, when the same kind of sap issued from the butt, but sap in no instance that I could find issued from the vasiform tissue, nor did the sap of the outside layers issue in sufficient quantity to spread over or overflow this tissue, before it began to evaporate or to be reabsorbed by the wood. Neither in the sap of the bark nor in that from the wood were there any bubbles of air observable save in one isolated drop resting on the compact wood.

Another anomaly here noticed was that apparently crude sap, (for it formed a drop which ran) issued in a circle about $\frac{3}{8}$ ths of an inch in diameter surrounding the pith. In all other pieces of wood previously examined, including that three inches in diameter, there was no heart wood properly so called, that is, none which had the reddish-bloom color of the heartwood of the hickory, but several circles of wood surrounding the pith invariably remained dry, unless overflowed, however copiously the sap might flow from the more recently formed layers.

From the 29th the weather became gradually colder. At sunrise on the 30th it was 27°, on the 31st 18°, and on Feb. 1st 14°. On this day I cut a tively cold night. On Sunday last, February 25th, the temperature was 20° below zero at sunrise, at zero on Tuesday, and rose to 38° during the day, with sunshine most of the time; yesterday and to-day have been densely overcast, and the temperature on both days has been as high as 54°. Yesterday I noticed that the wood of the ash was dry, but sap had oozed from both ends of the remaining part of the trunk of the hickory; but to-day at noon, on running my finger over each end, I found that it was now dry also—early in the morning there was a thick fog with a light drizzling Scotch mist.

branch from the tree felled on the 16th to ascertain what would be the behaviour of the sap now; four drops fell from the upper and three from the lower end of a piece when taken into the house. As the branch from which this was taken was cut from the wider side of the tree, I thought it possible that watery sap might have settled in it by gravitation; I therefore cut off another branch from the upper part of the trunk, and a piece from this now afforded crude sap also; I did not, however, count the drops, my attention, after noticing that watery sap was about to run, being mainly directed to ascertain the source of the air bubbles.

The temperature of February 2d, at sunrise, was 9°; near noon it had got no higher than 10°, the sky cloudless, with a strong west wind blowing. I now took another piece from the branch cut the day before from the upper part of the trunk, it measured two inches in diameter at the lower and 1½th at the upper end, and was about eight inches long; and instead of sap now showing at the bark as on the 29th, it was apparent before being taken into the house, on three or four of the last formed layers of wood on the side exposed to the sun. This was taken into the room at 12 minutes to 12, in nine minutes the first drop fell, at 10½ minutes past 12, twelve drops had fallen from the lower, and three from the upper part; at the end of this time the sap was still flowing; but having other business which required my attention I laid the wood across a plate, and on my return to the house, near one o'clock, found that more sap had fallen from each end. The bottom end of this piece was held lowest, as from some cause or other the sap seemed disposed to flow from it.

In order to determine whether the sap would flow with greater facility from one end than from the other, I cut off another branch on the morning of the 3d of February, the temperature at sunrise being 11° below zero. To avoid injury by the axe, and that both ends might be alike, I sawed off a piece 8½ inches long, averaging two inches in diameter, this was laid horizontally across a cup where the sun could shine upon it, time about half past ten, and 10 drops fell from the lower and seven the upper end. In the afternoon a similar piece, measuring 10¾ inches long and 2½ in diameter, was sawed from a branch of the tree felled in December, this was also laid across a cup, and from 2 h. 36 m. to 2 h. 58½ m. thirteen drops fell from the lower and ten from the upper part. These pieces were each sawed in two after the sap had ceased flowing; but the newly cut parts remained dry. Concentrated sap oozed from the bark from the end

whence the watery sap had flowed, but a few drops only, smaller than ordinary pin's heads were noticed on the bark where the wood was last sawed through.

I prefer not to make any comments on, nor to hazard any conjecture founded on the above observations at present, at least. I had intended to have added a few words on the source of the air bubbles or gas as the case may be, but as this dry narrative has already extended to a considerable length, and as there has been a remarkable difference in the amount of air emitted, I desire to examine further into this matter, and to send you the results hereafter.

GARDENING IN ENGLAND.

BY J. M.

I some time ago promised to give you some further accounts of objects of Horticultural interest that I met with in my travels in England last Summer. A few weeks of my time there was spent in the extreme southern counties, where the climate much resembles Northern France, and where the Winters oftener pass with no frost and snow than with it. I was surprised and delighted on visiting some of the large estates there to find several of my greenhouse acquaintances flourishing in the open air, in such a way as seemed to say to me, "see what we can do without you." It seemed indeed like being transformed into the cold conservatory of some Botanical gardens, to see the variety of plants and shrubs growing unprotected out of doors there.

The *Veronica Andersoni* and *Hydrangea hortensis* were the most striking of what I first saw; true, the latter will occasionally live out with us, but not to bloom; the one above referred to had been planted out about eight years; it was a mass of bloom when seen by me, and in height 6 feet by 8 feet in diameter. it was in a somewhat cool situation, and shaded from the sun by trees, at times throughout the day. The American species *H. quercifolium* was within a few feet of it, also in flower, its russet colored leaf in strong contrast with the bright green of the former.

The *Veronica* was a splendid specimen, its height was 10 feet by 8 feet in diameter, the numbers of its pale blue flowers being not the least of its attractions; its variegated variety also lives out, quite hardy, and was very thrifty.

Another plant or shrub, tender with us, the *Lycesteria formosa*, had formed a specimen 8 feet high by 6 feet through, making a contrast of singularity

by its long purple, pendent racemes of flowers, and stiff reed-like appearance, to the other shrubs near it.

The absence of such shrubs as the *Spiræa*, *Deutzia*, *Wiegelia* and such others as are common here, will strike the mind of a visitor to any of those gardens.

The broad-leaved Evergreens are planted almost exclusively in them, very few deciduous shrubs being used. I met with several specimens of the New Zealand Flax, *Phormium tenax*, doing well in the open air: its leaves are of a remarkable strength, it is almost impossible to break it by pulling; its leaves somewhat resemble, in shape, an Iris, or nearer perhaps the *Gladiolus*. The *Camellia japonica* will live out, but from what I saw of them, evidently not to their advantage.

Edwardsia microphylla, on a southside wall, flowered and perfected its seeds well. I had the offer of some seeds of it by the obliging gardener, but did not stay in the neighborhood until the ripening of them. Noisette and Tea Roses, Myrtles, and other tender plants were entwined around the base of the *Edwardsia*.

Jaune Desprey Rose being remarkable for its fragrance and beauty, is always met with at the horticultural shows there.

And now for a word about the shows. It would, I am sure, be a source of delight to any lover of Horticulture to see the interest taken in such affairs by the gardeners at these shows. The day of my visit to one it rained the whole morning; nevertheless the tent in which was held the display, did not, I think, miss a single article that was intended to have been taken there.

Three classes are made of exhibitors, 1st. Employers who keep gardeners. 2d. Tradesmen or persons without gardeners, i. e. amateurs. 3d. Laboring persons whose earnings do not exceed 15 shillings (\$3.75) per week. At the close of the exhibition, at dusk, the premiums in money are at once distributed to gainers of them. They are held three times during the summer, and at the admission fee of 50 cents, leave a handsome surplus after paying the premium money.

But I fear this is digressing from my subject. So to my trees again.

Of American trees very few seemed to thrive as they should do. The *Quercus rubra*, *Catalpa bignonioides* and *Quercus nigra* were stunted specimens; *Rhus typhina* and *Acer rubrum* being exceptions; what a gorgeous sight the large groups of *Rhododendrons* must be when in flower—under the shade of trees they thrive admirably. I saw masses

of several hundreds of them, 8 to 10 feet high, in perfect health.

On walking near the sea shore, the only plant we usually meet with is the *Tamarix*, the species I did not know; it stands the cold sea breezes in Winter where nothing else will live. I could tell you, I think, some interesting facts in regard to flowers and flower-beds, but fear I have already gone far enough, however I will venture to say a few words about them.

In the first place what a beautiful contrast is formed by the planting in a bed of plants of *Alma* *Geraniums* and some purple flowered plant. The one I saw used was *Verbena venosa*, a hardy species, it formed the most beautiful bed of any I saw. I suppose the *Verbena aubletia* of our borders would answer as well. The *Alma*, a variegated *Geranium*, has been in the States some years. The Missouri Primrose, *Oenothera Missouriensis*, is used for forming permanent beds of yellow flowers.

To what a large extent are the white or variegated leaf plants used as edgings to beds! Every bed has usually a border or edging of something of the kind. The *Coleus* usually grows too high, as also will the *Achyranthes*; both are fine for centres with something white leaved for an edging. The *Achyranthes* from what I observed of it would I think be best suited by being planted in partial shade here. I saw it there in every situation,—the best were in the moist or shady places, its color I think was brightest out of doors. I suppose from its being now so largely distributed here, we shall be able to form a tolerable fair opinion of its merits by the ensuing Fall.

MORE ABOUT THE "BLACK KNOT."

BY "A READER," SALEM, MASS.

The fungus named by Dr. Fitch (see April No., page 115) is the *Sphaeria morbosa* of Fries, and may be found described in his *Systema Mycologium*, vol. 2, p. 418. The late Lewis D. de Schweinitz, in an article on the North American Fungi, communicated to the American Philosophical Society, in 1831, makes mention of the same, and describes its various effects on the best varieties of the Plum and on the several Wild Cherries in Pennsylvania and North Carolina. It is evident, however, that the "Sphaeria" is the subsequent condition of the "knot," and is not the cause of the destruction attributed to it. Other species of *Sphaeria* may be found on other trees—the swellings on the oak for instance, are infested by *Sphaeria* fungus.

We are inclined to think that some ingredient in the soil is the cause of the mischief, and that a remedy may be discovered by which the evil can be avoided. The Wild Choke Cherry in some places is nearly dispatched by its ravages, and the worst infected of this shrub are found near old stone walls, where vegetable mould accumulates. Salt, lime and sulphate of iron (copperas) have been used as topical remedies applied to diseased limbs; perhaps these elements are needed at the roots. Sections of such diseased branches exhibit accumulations of deformed *buds* crowded together in the tissue as if produced by repletion. By cell growth this unusual form rapidly increases when the sap is most active; and a succumbent spongy mass is the consequence. By extraordinary pressure the bark or cuticle bursts and the timber weeps and bleeds, inviting first the weevil, which mistakes it for an unripe fruit, and next the cynips which deposits its egg in the hatched larva or maggot, and finally the invisible spores of the *Sphæria*, which rapidly vegetate and crowd the surface with opaque black spherules, containing within a whitish flesh filled with myriads of seeds, to spread and be dissipated by the atmosphere, when ready to fall from the deadened and brittle branch.

Such in fine is the epitome of the history of the Black knot. Who shall discover the preventive or the cure? Time and experiment may yet tell.

DOUBLE FLOWERS.

BY X.

To *A. H.*, in the April No., page 115.

The *Dahlia* and the *Zinnia* belong to the second order of the nineteenth class, Syngenesia superflua of the Linnæan arrangement, where the outer rows of florets, simply pistiliform, and incapable of impregnation naturally are called *superfluous*. The rest of the florets are hermaphrodite, or have in each of them *stamens* and pistils, these produce seed. The organ on which the ray or superfluous, and also the disc florets are inserted, is called the *receptacle*, and structurally considered is a shortened and flattened top of branch or *apex* of a stem.

In what is floriculturally called a *double Dahlia*, no seeds are produced, the entire number of florets become whorls or circles of ray flowers. It is only when a few disc florets escape this general change that the seeds are found, such seeds are thin, poor and starved, though capable of germination, the petal or ray florets absorbing the nutriment. The more meagre the seeds in the *Zinnia* too, the more double or multiplex will the composite flower

head be. Whatever increases the whorl of ray florets inward or toward the apex, diminishes the chance for hermaphrodite florets, and annihilates the stamens on whose produce the future seeds depend.

This may be high cultivation, or a very rich soil, or some unknown art of the florist, giving a plethora or diseased condition, which being multiplied from cuttings or from seeds, becomes permanent, and seldom if ever reverts to the simple and original type.

ON STANDARD ROSES.

BY E. FERRAND.

By standard roses, I here understand roses budded on the top of a stem varying in height from 3 to 5 feet; mere height would be a mere matter of taste, but most persons believe that a rose ought to be seen from above in order to enjoy all its fragrance and beauty. I think these lines may be of interest to the lovers of roses, and particularly to those who to the effect of obtaining a greater display of flowers than is commonly seen with out-door roses would be willing to bestow on standard roses a particular attention, just as much at least as is given to more common plants that are taken in and out every year. For if a rose tree, when left to itself, is a beautiful thing; it should be known that when taken care of, it will be remarkably more beautiful.

Besides beauty a great advantage with the budded rose is that some kinds give a greater quantity and of larger flowers than the same when grown on their own roots, and with some care the permanency of some sorts tending to degenerate can be checked by observing the following, which apply also to fruit trees, Pears especially. It has been remarked that some roses which were beautiful at the first have in some instances and in peculiar localities lost all their fine qualities; some profuse bloomers degenerating to give none but a few flowers, others being altered in the color, others in the shape and size of flower. With some Pears the quality of the fruit has also degenerated and the fertility of the tree reduced. These questions have been studied in the horticultural bodies of France, the country *par excellence* of Pears and Roses; experiments have been made, and it has been found that in order to secure the stability of a rose no propagation should be made but from branches having actually bloomed profusely, and those grown early preferred. The late grown shoots and those having no tendency to give bloom, in no case being used. The same selection was observed for the pear—the buds taken

from a limb showing more disposition to fruit. It has also been remarked, and that in every instance, with every kind of plants, as well as in all countries where horticulture is honored, that the character of a plant is better fixed when propagated by graft than by a rooted cutting—take a variegated-leaved plant for instance: in most cases, if propagated by cuttings you will lose the variegation of your plant, but you steadily fix it by grafting.

Some amateurs object to the cultivation of budded roses on account of the trouble they give with the suckers, and also of standard for the difficulty of covering them in Winter with straw or manure, when short roses are easy to cover; this is right; but I think a handsome rose tree well worth the trouble to be taken up in the Fall and buried in the ground till Spring when it is planted again; and note this, in France where the frost is not dreaded, skillful amateurs take up all their budded roses every year in order to trim the roots, carefully cutting off all suckers very close to the stem, and rubbing off with the knife those which show themselves like small protuberances; the branches are then cut quite short and thus a much better flowering is obtained than when the plants are left untouched. It should be recommended to spare less wood with roses than is generally done. Roses bloom on the wood of the year, and when too much wood is left in Spring it weakens each bud in proportion. To illustrate this, I will say that a rose tree is never more beautiful than the first year of its growing from the very bud. The greatest trouble with standard roses is, that in this country a proper stock is wanting, the Manetti being not at all proper for that. The only good stock being yet the common European Dog Rose: it must be well ripened before used, none but three years old stems being desirable. It can be sown easily or propagated by roots; it stands the the greatest cold of this climate.

Of necessity the standard rose must be budded, because but very few kinds grow strong enough to form a stem of even 2 feet, which is rather low for a standard. Moss Roses have also a greater tendency to grow suckers from the roots than the Dog Roses has, and consequently give more trouble than it. Whenever it is tried to form a head on a stem with roses or other plants no suckers should be permitted to show themselves out of the ground.

To this I will add that last year I received from Europe 100 standard rose trees with a large invoice of fruit trees, mostly Pears, for a collection for myself, they having by mistake been shipped on board a sailing vessel, were over six months in the pack-

ing and did not reach me till the hottest days on the 20th of June. I pruned them very short and planted them at once in the open ground, and in the Fall 50 had survived and made the most brilliant show and a vigorous growth. I had even more success with the fruit trees, having two-thirds of them, all of which are now very fine, but had I not cut all so severely as I did, leaving but a bare stem to the fruit trees, I would not have saved one hundred on the whole lot.

My roses were buried in the Fall and I am getting ready to set them in their places, and take them up again in November.

ESSAY ON GROWING SPECIMEN PLANTS.

BY CHARLES CRUCKNELL, GERMANTOWN, PA.

Read before Pa. Hort. Society, April, 3d, 1866.

In introducing the subject for discussion this evening, I wish to be distinctly understood that it is chiefly with the view of inducing others of more enlarged and varied experience to give their views and the methods which they adopt in growing plants for ornamentation.

It should be the desire of every gardener to establish a system of fraternal sociability and encourage a spirit of honest enquiry with each other, not only to aid in promoting one another's interest, and break down the narrow-minded selfishness that hides its light under a bushel for fear our neighbor might have something that would accrue to his benefit; but also for exerting the influence which we possess individually, and as a body, in spreading broadcast a taste for plants and flowers which seem to have been created for the single purpose of adding to the happiness of man.

It matters not how competent or skillful a man may be, he is never so far advanced but what he may add to his store of knowledge by drawing from the experience of others, and the sure way to gain this is by social intercourse.

It is not to be supposed that the gardener, with one small greenhouse, can successfully compete with those who have several ranges of glass built especially for the purpose of growing in each a particular class of plants that require special treatment, which it would be impossible to give them where a single house alone exists. But as straws show which way the wind blows, so will the energetic gardener—whatever position he may fill—by a few masterly touches of skill show that he has the abilities within him which he is ready to put forth when the opportunity occurs. It is not the position which makes the gardener, the reverse is often the case:

he gives to the place a "local habitation and a name."

An idea is prevalent that unless a plant be new, or rare, or costly, it is not worth spending time to grow it well. This is all wrong. Fashion is one thing, but beauty is another; and many of the common flowering plants are amongst the most lovely objects in the Floral kingdom, and not the less so because they are easily grown. In fact, it is the ease and simplicity with which they can be cultivated that gives to them the charming grace and loveliness of character which they possess, and has made them universal favorites.

There are plants in every collection that await only the magical touch of the skilled workman, to be moulded into whatever form or shape, fancy or taste may dictate. Take as an example the Fuchsia. To my view there is not a more elegant plant in cultivation. To the stateliness of the Norway Spruce is blended the light graceful character of the Hemlock. Every color and shade of color in the spectrum finds a reciprocal in its flowers. And where can you find such rich varied foliage?

You point to the rich leaves of the magnificent Cyanophyllum, the metallic-lustred Alocasia, to the low-growing Soncrilla with its delicate fairy-like flowers, or the wonderful Anætochilus whose rich velvety-textured foliage has often fascinated the gaze of many an envious mortal; you remind me of the stately Marantas, the grand old Dracœnas, the gloriously painted Crotons, and the luxuriant Musas, all of which are exceedingly beautiful; but neither of these, nor the Gesneria with its handsome foliage surmounted with a plume of gaudy flowers, can excel the inimitable grace, the infinite variety, and ever changing colors of a bed of well-grown Fuchsias.

Happily the cultivation of the Fuchsia is of the simplest kind. It may be managed entirely as an annual with the exception that it is grown from cuttings, and these can be rooted any time in December or January. For the first eight or ten weeks of its existence it requires hothouse culture; and as soon as one set of pots are filled with roots the plants should be shifted into a size or two larger, and so on till they are in ten-inch pots, which for all practical purposes are large enough. The writer of this essay has counted as many as five hundred flowers and buds on a single plant of *Guiding Star* the first week in June, that had been grown from a cutting rooted in the month of January. The wood should not be allowed to harden under any circumstances until they have nearly finished their growth. Whenever a plant shows a disposition to

harden its wood in the early stages of growth it is better to discard it, as in nine cases out of ten if one plant be retained disappointment is sure to follow.

Many of the soft wooded plants do better and give more satisfaction by being renewed annually from cuttings or seed than if the same plants were kept to do duty continually. It is not in the order of things, for an old plant to bloom so free or look so beautiful as one with youth on its side.

From the early dawn of intelligence in childhood to its hastening decay in old age, we associate in our minds the pure and the beautiful, as depending on, and forming an integral part of youth, and as closely connected with that period of existence as life itself.

The most difficult branch of the art of plant-culture, and that which reflects the highest credit on the gardener, is the growing and training of hard wooded plants. The Camellia and Azalea are familiar instances. Any one at all acquainted with the rudiments of plant-culture may if he chooses grow many of the soft-wooded plants, providing he has a structure suitable for the purpose, as they possess a natural tendency to assume a gay and lively character, combined with a form at once symmetrical and graceful,—independent of the skill of the grower. This is particularly true of many of the Ferns, the Centradenias, the Fuchsias, the Cyanophyllum magnificum and many others. But the habit of the hard wooded plants is entirely different. The Azalea for instance, if allowed to follow the bent of its own inclination, will grow into the most ungraceful form that can well be imagined, which in the hands of the skilled workman will become a thing of beauty that neither time, nor age, nor neglect, nor even mismanagement itself can wholly efface. Let skill once set its seal upon it, and so long as the plant exists, will it remain.

"We would have our Azaleas as handsome as the best did we but know how to make them so," is the earnest wish of every one who truly loves this desirable Winter blooming class of plants. To help those who feel this need, a few words of explanation on the whole subject of training will not be out of place.

We will suppose the plant to be trained is three feet in height from the pot, and in form very like an inverted cone, which is the appearance an untrained hardwooded plant generally presents when left to care for itself. It would seem almost an impossibility to reverse the position of the form of a plant of this description but with care and patience and observing a few simple instructions it may be

done. The following treatment has been found to do its work effectually, and has brought some of the most uncouth specimens imaginable into better shape:—

Drive a stake into near the centre of the pot, of the height desired, and to it tie a strong shoot which will form the leader; next fasten a piece of wire round the pot, below the rim, and to it tie strings sufficiently strong for the purpose, these in turn to be passed over the lowest branches, which must be bent down carefully for fear they break, till a circle of branches be formed round the base of the plant. With the base and the apex formed, no difficulty should be experienced in training the remaining part of the plant.

It will be found necessary to use the knife in shortening any branch that may interfere with the symmetry and roundness of the specimen, and also to give it a finish. This had better be left undone till the branches are all tied in their places, as then one can see better which may require it. No uneasiness need be felt on this account, as there is no plant in cultivation which is more benefitted by pruning than the Azalea.

Before concluding I would remark that the gardeners of this city—both commercial and private—rank high in this particular branch of the profession. Philadelphia, at one time could boast of the rarest collection of well trained Azaleas on this continent, or in the world probably.

As the rich tones of the organ swell and reverberates through the dim aisles of some old cathedral, filling the vast edifice with the mystic power of music, so does the magnetic presence of flowers influence our whole life, enriching the mind with new ideas and noble aspirations, enlarging the heart, exalting the imagination, and expanding the whole soul with intellectual forms of beauty, truthfulness and love.

We envy not the man who, with untold wealth, is ever in pursuit of happiness which he finds not; who cannot see in the innocent gaze of an unfolded blossom the great lesson which is there plainly written, that the truest of all human enjoyments is the love we bear for flowers.

CACTI FROM THE IMPERIAL GARDEN OF ST. PETERSBURG, RUSSIA.

BY HORTICOLA.

Several years ago (March, 1861, p. 84, and July, 1862, p. 344) Dr. Regel, Scientific Director of the Imperial Garden at St. Petersburg, Russia, gave in his monthly *Garden Flora*, (*Garten Flora*) a

description of a beautiful Cactus, belonging to the tribe of the Phyllocaeti, by many even now called Epiphylla, and produced by artificially crossing the *Phyllocactus crenatus*, Salm., with *P. Ackermanni* or some other large blooming red variety. The description is accompanied by a picture. Being very fond of Cacti, a large collection of which I had under cultivation in Germany, I wrote to Dr. Regel, and requested him to send it to me in exchange for other plants from this country. He was kind enough to comply with my request, and added other crosses from the same mother plant, fertilized with the pollen of varieties similar to that which produced the variety in question, viz., *Vogelii*, *lateritius*, *amaranthinus*, *splendens* and *grandiflorus*.

The *Phyllocactus* alluded to was called, by Dr. Regel, *Phyllocactus crenatus* Salm., var. *rosea grandiflora*, Regel. The habitus of the plant is not so robust as that of the mother plant, *Phyllocactus crenatus*, nor does it grow so rapidly and large.

As I had two specimens of it in bloom last Summer I can corroborate what Dr. Regel says about it.

The Editor of the *Gardener's Monthly* repeated the statement of Dr. Regel in a condensed form in January, 1864, p. 25.

While the two plants were in flower I was sick, and consequently prevented from taking notes and measurements; all I could accomplish was the impregnation of one of the flowers with the pollen of *P. splendidissimus*.

The fruit which I picked off last week was as large as a walnut, of a beautiful vermilion color. When I opened it the whole room was filled with an indescribably delicious perfume. Its taste was peculiarly aromatic, but too sweet for me. The ladies eat it with delight. The two other flowers not fertilized artificially did not produce fruit. The seeds I shall sow; I shall most-certainly succeed in raising some fine varieties from them.

The object for which I write the lines is to call the attention of amateurs to the flower of the plant. As the Night-blooming *Cereus* (*Cereus grandiflorus*) is so widely known, I deem it sufficient to say that the flower of the *Phyllocactus crenatus* var. *rosea grandiflora*, is very similar to that of the Night-blooming *Cereus* in size and form, it is very little smaller. *Its color is rose*, of such a purity and beauty that it was beheld with the greatest admiration by those who had an opportunity of seeing it.

I must confess that I never saw a Cactus flower that has struck me so much by its wonderful elegance and color. Even when the lamps were lit in the evening, I had it placed on a table before the

couch on which I was laying, surrounded by lights, that I might enjoy it as long as possible.

It may find its way into this country soon, or may have found it already. If these lines should have the effect to induce amateurs to procure it, it would give me pleasure, for theirs would be mine.

HOW TO SHADE A SPAN-ROOF GRAPE-HOUSE.

BY MR. JAMES LAMONT, GARDENER TO C. ZUG, ESQ., PITTSBURGH, PA.

My plan of shading is simple and cheap. I think it will be useful to others. It will help the Grapes to color, which is a great desideratum.

In the first place stretch a good strong wire the whole length of the house, four inches from the ridge pole, and then the shade must hang four feet from the ground level, and the space between these lines filled with muslin; then divide the house into two or three section. Then cut the muslin to the same lengths: when this is done, line your muslin well, and along the top cut button holes, say one foot apart, so that you can fasten it to the wire, which can be done with good twine. In the next place fix rollers to roll them up on. These rollers I would make of iron well painted. Wooden rollers would warp, and I would not recommend them. To each roller put two cords. The cords must be fastened to the ridge pole and then pass the cords through under the rollers and up to the ridge pole. Have two pulleys on the ridge pole and pass the cords through them, and from that point it can hang down, so as the hands can lay hold of them, and by pulling you can raise your blind (or in other words centre wall) at any time when it is not needed.

I think six feet apart will be a good distance for the pulleys, three feet on each side of the centre, and pulling fair with both cords in the hands together it will go up very nicely. Then have a hook or weights to hold it up. On cloudy days this will not be required.

If the south end of your house is all wood and glass, I would say shade it likewise from 10 o'clock, A. M., until 2 o'clock P. M., and the centre blind in the heat of summer days, I would leave the blinds down from 8 o'clock, A. M., until 4½ o'clock, P. M.

My reasons for recommending this shade is to equalize the heat, and to keep down or stop the focus in the opposite sides. When the sun is in the southeast the focus is in the west side doing the mischief; and the same where the sun is in the southwest, just *vice versa*.

I favor span-roof Grape houses, and we can get as good Grapes out of them. I hope a few may try this way of shade this Summer so that it can be tested. I can say a good deal in favor of it, but I will keep back till I here what may be said about it.

[All first-class gardeners know how important it is to have a partial shade to a grapery while the fruit is coloring. We should be very glad to hear from such of our correspondents who may have a better plan than this one of Mr. Lamont's to propose, if such there be. Mr. Lamont's plan has many advantages.—ED.]

WHY GARDENERS CHANGE THEIR PLACES SO OFTEN.

BY CHRONICLER.

There is a species of grievous tyranny to which many good gardeners are subjected, unknown to their employers, and we think its publicity will cause it to be ended. Where there is a farmer upon the place he is *Lord of the manor*; if the gardener needs manure or the use of a horse and cart he is repeatedly put off with a *civil answer*, until it is long after the time for him to put in his crops. If he is bashful or indifferent he will wait and all his crops will be late. If he is a man of anxiety, he will crop without manure. The lady is perplexed at her vegetables being too late or poor, and the flowers don't do well. The gentleman is reproached for having such a poor gardener; and the pleasure of the family is destroyed for that year. The gardener is rebuked for his incapacity; his only defence is telling the truth, and is discredited; the farmer gives him the *lie*, and is believed; and if the gardener boards with him, *woe to him!* the whole people upon the place are against him. He is without an equal, companion or friend, and he must either leave or continue in his degradation until his time is up; another comes in his stead to be treated in the same way, and the employers lament over the difficulty of *getting a good gardener*. If they would make the farmer and gardener change places for one year, *truth* would unveil the mystery: the gardener would become energetic and cheerful, and the farmer would be gloomy, and would be apt to say, what many a one had said to us, "I would rather serve twelve months in States prison than work in the garden one year." The spade is a laborious, back-breaking tool; carrying manure in a wheel-barrow is harder work than hauling dung with horse and cart; and pulling the heavy garden roller is harder than sitting upon the field roller and guiding the horses.

The Gardener's Monthly.

PHILADELPHIA, JUNE, 1866.

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OIL AS A REMEDY AGAINST INSECTS.

Many years ago we were interested in some experiments made by some medical students on the destruction of insect life by oil. The slightest drop of sweet oil, put on the back of a hornet, beetle, bee or similar thing, caused its instant destruction. We were told the breathing pores were closed by the oil,—and life was literally smothered out. In after life greasy water was always a favorite mode with us of destroying insects,—and we have repeatedly urged it upon the readers of this journal. Yet we are astonished to find how little the hint has been acted on. Almost every day we meet people who ask how to destroy this insect or that,—and our drawer is filled with similar inquiries; and to all the idea of grease or oil seems as new a one as if we had kept the matter a most profound secret.

Of the millions of people in the United States how few are there who would not "give any thing," as they say, to know how to keep away the Cabbage fly from their seed beds,—yet about a tablespoonful of coal oil put in a common garden water-pot of water, sprinkled over the seed bed, when the little jumping beetle is noticed as having appeared, will instantly destroy the whole brood.

A correspondent of this journal recently gave us an article on the virtues of coal oil in killing scale insects. We have repeated the experiment on some Daphnes with entire success.

In short we have no doubt that coal oil, well diluted with water, is death to all kinds of insects, and there is no reason why it should not be in as general use as tobacco is for killing aphides—more valuable in fact because it can be applied in so many cases where smoke cannot.

One great point in favor of coal oil is that it acts as a manure to vegetation, while dealing out death to insects. We have seen Cabbage beds nearly destroyed by the Cabbage fly, have the whole crop

of beetles destroyed almost instantaneously,—while in a few days afterwards the plants, as if by magic would cover the bed with luxuriant leaves.

We do not believe that the undiluted oil would prove injurious to the leaves, but such extravagance is unnecessary, as the small quantity we have given is effectual.

No doubt the Egg-plant fly, and all insects that can be reached by the oil can, be destroyed.

There is scarcely one of our readers to whom we are sure this hint alone will not be worth many annual subscriptions.

We may add that any oil is as good as coal oil,—but that being likely to be more easily obtained when wanted is recommended, also care must be used to keep the water in the pot stirred when used so that a portion of the oil gets out as the water runs,—otherwise the oil floating on the top of the water will stay there till all the water goes out and only the oil be left for the last. For this reason a syringe, in many cases, will be preferable to the water-pot, as the oil and water will have a better chance of getting out.

PUTTING DRAINAGE INTO FLOWER-POTS.

In one of our earliest numbers, Mr. Peter Henderson assumed the position, unqualifiedly, that crocking pots is unnecessary. From time to time statements and counter statements have been made, and the matter continues unsettled. It seems very easy to decide this question,—but first let us see if the champions of the different practices are not more nearly on the same platform than they suppose they are.

We know why plants want water,—all the nutriment a plant receives is taken into its system with the water it absorbs. A continuous current of moisture about the roots is therefore essential to all but swamp plants.

If we take two pots, one containing earth only, the other having a plant growing healthily in it; give to each exactly the same quantity of water, and set both in an exposed place; the one with the plant is dry long before the other. The most of the water goes not through the hole at the bottom, or through the porous sides of the pot, but through the thousand of little spongioles up into the leaves where it is evaporated, leaving only the solid matters it took up with it. The oftener such a plant dries, and can again get its water renewed, the oftener in fact is it taking its food, and getting fat according to good philosophy.

A plant, therefore, that is so full of roots as to be able to suck up easily all the water given to it, needs no "croaking,"—but until it gets to this full rooted condition, the rapid transition or circulation of moisture through the soil must be accelerated by artificial means, or the plant will *starve*.

In very small pots on a dry shelf, although the plants may not fill the pots with roots and so suck up the moisture to any great extent, very much will go through the pores of the pots, and in such cases drainage will be unnecessary.

In short, and to crowd the argument into as few words as possible, plants in pots, to keep healthy, must have the soil about their roots regularly moist and dry by turns,—when this can be accomplished without "croaking," this drainage will be unnecessary,—when there is danger that this will not freely ensue, plants should certainly be drained in order to assist the process.

Our friend in a recent paper has a pleasant allusion to an old foggy who always planted a grain of wheat or oats with the seed in his pot.

We think we have met that old fellow in our time, and have had our laugh at him also,—but we have lived to learn that he had a good ground for his practice, though the reason for it was no doubt unknown to him. And the reason is this:

There is no "medicinal" virtues in a grain of wheat—but it is of a coarse, strong nature and a sour soil will not easily kill it. It sprouts immediately it gets in the ground, and its roots ramifying in all directions suck up all the superfluous moisture in the pot that otherwise would stagnate, sour the soil, and rot the roots of more delicate and slow rooting things.

Most of us know that when we get any choice seeds, we generally take especial pains with them by careful watering and zealous guarding of the young seedling plants from the intrusion of the minutest weed,—and yet in the majority of cases more "damp off" under this cautious policy than when they are entirely neglected,—and it has come to be a rule with gardeners, that to raise seed successfully in pots, more attention should be given to the matter of watering than to any other process of the art whatever.

Now when seeds are somewhat neglected, weeds spring up and the coarser roots of the weeds taking up the superfluous water keeps the soil from souring.

We gave, last year, the result of an experiment a friend made with Egg-plants. One half the bed he hoed and kept clean from the start,—the other was left weedy for a long time, until the Egg-plants had a fair hold of the ground. They were then

cleaned and the crop was *earlier, larger and finer* every way than those particularly cared for.

We know that all such accounts excite the ire of the clean and careful cultivator. He is so embittered against weeds that he will not see in them any *uses*, only their abuses; and the philosophy of the past so impregnates his bones that he feels a sort of mental rheumatism whenever any new idea is propounded of a progressive kind. When he reads our remarks that even weeds have a beneficial effect in guarding the roots of more tender things,—we have no doubt he will imagine we are praising the management of that gardener

"Whose days were all spent in yawning or slumber
While his garden bore thistles and weeds without number."

And indeed there is no doubt many a lazy laborer might take advantage of the idea, and excuse himself for neglecting crops on the plea that "here the *Gardener's Monthly* says weeds are good things to have in a garden."

However, we are dealing with facts, and have to risk prejudice in our statements of them,—and we have no doubt, from our own observations, that the grain of wheat man,—and the weed-among-the-Egg-plant man have more of common sense in their practice than many of us, with old fashioned notions of propriety, are prepared to give them credit for.

All this has a close connection with this subject of draining pots,—and it all amounts to this, that the fibres of plants must be kept in a condition to have repeated changes of water,—when this can be done without "croaking" that process is unnecessary,—when it cannot or is not likely to be, croaking should be done.

THE STRAWBERRY SEASON.

It cannot have been concealed from our readers that we have a very poor opinion of the *majority* of the new seedling fruits annually foisted on the public at an enormous expense. The intelligent portion of the horticultural community feel as we do,—but they cannot help themselves. The tendency of the people to try to make large fortunes in a few minutes, added to their supreme ignorance, creates an enormous demand for every "novelty" that any ignoramus or sharper, starts as a "wonderful" fruit,—and every nurseryman has to have it or be thought by half of his customers to be "behind the times."

Our annual Strawberry shows used to be looked forward to with interest as showing how this delicious fruit had been "improved,"—their chief uses

now are to weed out worthless things, and to show how many new ones are but new names under false colors.

It may be worthy of inquiry at our forthcoming Strawberry shows, whether if so many persons have thought Buffalo Seedling so superior a new kind as to be worth paying a high figure for, and it is yet nothing but McAvoy's Superior,—whether Strawberry varieties have improved much during the last 15 years that McAvoy's Superior has been before the public.

WINE TURNED INTO VINEGAR.

Last year several wise men from the east came to Philadelphia, and bought up all the Linnæus Rhubarb plants they could get at ten dollars per hundred, and after taking them to Binghamton, Jersey City and other places, cut them up into little bits, and have scattered the fragments widely over the country as *wine plants* at forty dollars per 100. Lately they returned here. Among the "Dutch," in Montgomery county, they gathered a rich harvest into their garners,—hundreds of farmers there are at this moment who are "down on book larnin'," but who are in the holy hope of \$6000 per acre clear profit from their wine patches, from which pleasant dreams they will not awake until the decease of all their hopes about this time next year.

Having well bled "the Dutch," they went down amongst the Quakers of Delaware and Chester counties,—but they fell into the hands of the Philistines, and brought up in sadness in the county jail of Media.

Andrew W. Brown, Andrew Boyce and G. A. Martin, of Binghamton, were arrested for obtaining money under the false pretence of selling roots as "wine plants," knowing at the same time that they were nothing but Rhubarb plants. After a hearing before the Alderman, they were handed over to the authorities of Media "to do with them as seemed good unto them." When they get out we fancy they will give Philadelphia "Quakers" a "wide berth," and go where "book larnin'" is at a heavy discount.

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.

MUSCAT ESCHOLATA GRAPE—J. C., Rochester, N. Y.—In a recent number of the *Monthly*, Mr.

H. W. Sargent, in his letter dated York, England, speaking of his visit to Knowlsley Park, near Liverpool, the seat of the Earl of Derby, described a new seedling Grape he saw there, the Muscat Escholata. There certainly must be some mistake about this Grape being a new seedling, as we fruited it (or at least a Grape by this name) at Longleat Wilts (the seat of the Marquis of Bath), as early as 1854, and considered it but a synonym of the Muscat of Alexandria, as much so as the Tottenham Park Muscat. The house being devoted to Muscats only, the varieties being the Cannon Hall Muscat, the Muscat of Alexandria, the Muscat of Escholata and the Tottenham Park Muscat, but in point of truth two varieties only.

[Mr. C. is right. We have known this Grape for thirty years, and it is much older than this.]

HAMBURGH GRAPE—"A Subscriber," we do not know where from, says:—"I enclose some young blossoms off a large old Black Hamburg Grape vine. All the roots of the vine are outside. The blossoms are shrinking or damping off on one, and the leaves look pale and thin on the other. I would be very thankful if you would please to give some explanation through the *Monthly*."

[The roots have got injured some way. Perhaps they are wet so that the fibres have rotted,—perhaps you have been in the habit of digging over and cropping the border, thus destroying the surface roots. You must encourage healthy fibres, near the surface somehow before your vines will recover. Without knowing all the circumstances the best thing we can advise you is put a compost of coarse vegetable refuse and sand, say two inches thick over the border, and leave it that way for a couple of years, merely keeping down weeds.]

GRAPE SUGAR—SACCHAROMETERS—M., Harrisburg, Pa.—"If you can, will you please state in the *Monthly* whether Grape or Potato Sugar, such as is used in Germany in wine making, can be procured in this country? I should also be obliged to know where Acetometers and Saccharometers can be had. No doubt many of your readers, besides myself, would be thankful for the information requested."

[We suppose any large chemical house could furnish the sugar; and the instruments can be probably obtained from most of the large Opticians and makers of Mathematical Instruments.

In Philadelphia you can try McAllister & Bro.]

SEEDLING PELARGONIUM, from John Hirst, New Philadelphia, Ohio.—“I send you a flower of a seedling Pelargonium, seed from Jenny Lind crossed with the Emperor. Please give your opinion in the *Gardener's Monthly*.”

[The flower, packed in damp moss in a small tin box, came in first-rate order (a hint to those who send them in dry cotton and pasteboard). The flower is not superior to many of the known fancy varieties, but it is a first-class variety, and well worthy of propagation.]

CHILI STRAWBERRIES—*J. M. M., New Bedford, Mass.*, writes:—“Your answer to my enquiries about the Chili Strawberries puzzles me very much.

“Mr. Prince's (Flushing, L. I.) special Catalogue of Strawberries, August, 1865, Nos. 133—141 inclusive, are set down as true Chili Strawberries, with magnificent descriptions, and equally grand prices. I have a few of No. 133, but they have not fruited, and having bored my horticultural friends with inquiries, and got no answer, I thought I would try you.

“Again Nos. 111 and 123 of the same catalogue are set down as hybrid Chilis, as though the infusion of the Chili added some especial excellence to the pine stock.”

FOREIGN STRAWBERRIES—“My inquiry about *La Constante* seems to have been misunderstood.

“I have not raised foreign Strawberries, and made twenty or thirty kinds my pets, without knowing that *La Constante* was a Belgium sort, but what I desired to know was of what sort, i. e. from what named plant it was a seedling.”

[We have never seen any account by De Jonghe of the parents of any of his Strawberries. We place very little reliance on the genealogy of any new fruits or flowers, even when given; for we have found too often, after close investigation, that most seedlings are accidental, and the raiser then looks around for the probabilities, which seem to him facts, and he then gives them as *undoubted* facts to the public. In *nine-tenths* of cases we believe this to be how these matters stand.]

SEEDLING MIMULUS—*F. R. H. S., Boston.*—“I have forwarded a few blooms of some seedling *Mimulus* for your inspection as regards color, &c. I wish to know if you think the color distinct and worth saving. You will not be able to judge the size of the blooms, the plants being in small pots. I think under proper treatment they will prove good.”

[These are very pretty,—equal certainly to any thing we have seen, Mr. Bull's hybrid not excepted.

We often wonder the *Mimulus* is not more grown.

Potted in very rich soil, and the pots set in saucers of water, and then placed in *the full sun*,—there can be no prettier floral ornament grown.]

VARIEGATED WHITE SPRUCE—*J. M. M., Tompkins County, N. Y.*, sends us a specimen of a pretty variegated variety, well worthy of propagation, which he can readily accomplish by layering like the *Carnation*.

POMOLOGICAL PROGRESS.—“Some correspondent inquires of one of our contemporaries ‘what is the average life term of the dwarf Pear?’ To which he answers that the average is ten years; but if a tree have the care and attention it requires he believes that it will live at least two-thirds as long as a standard, say 25 or 30 years. As many of our own dwarf trees are 25 years old, and those of Col. Wilder 30, and yet in full vigor, we think the average is a little more than 10 years. Many of our standards, 30 years old, have but just begun to bear. It does seem as if it was about time to have a better knowledge of dwarf trees.”

The above is from *Hovey's Magazine* in reference to a remark of our own.

Our contemporary is growing very smart in its old days. We have before heard of Boston considering itself the ‘‘hub of the Universe,’’ but it is going a little further than this to ask us to calculate the *average* duration of the life of all the dwarf Pears planted in the United States by the length of those in Mr. Hovey's or Col. Wilder's grounds. We know of dwarf Pears probably 75 years old, but as they do not grow in Mr. Hovey's or Col. Wilder's, of course we cannot take 75 years as the *average* of the life of the dwarf Pear.

We are quite sure that every person out of the grounds of the gentlemen referred to, who know the meaning of the term *average*, and who are ‘‘posted’’ on the millions of dwarf Pears that have been set out during the past 20 years to the thousands only living of them, will feel our *average* a truthful one.

It is not the interest of a horticultural magazine to deceive the public; and nurserymen suffer when their customers are misinformed.

It is a well known fact that the average duration of the dwarf Pear is less than that of any other fruit tree,—not necessarily so, but through ignorance of its proper treatment.

With proper care and attention they are far more profitable and interesting every way than standards,

and everybody should have them,—but they so often do not get this proper treatment, that the average is just as we stated,—and we do not see that the dwarf Pear interest will suffer by the public knowing the truth.

HARDY IVIES—*S. T., Philadelphia.*—“On the southeast side of our house the Ivy was killed to the ground the past Winter,—variety the Irish. Is there any really hardy variety?”

[What is or is not hardy the the past Winter can scarcely be considered a fair test of, except so far as what are entirely uninjured. Native trees have been, in many places, destroyed. Of Ivies the narrow-leaved varieties are hardiest. The English is harder than the Irish, and the Russian harder than either.]

DEAN SWIFT—*C. C., Germantown, Pa.,* writes:—“‘Young Contributor’ says Dean Swift was an Englishman. Is not this an error? I have always supposed him to be an Irishman. He certainly possessed the rare excellence of *manly independence.*”

THE YORK IMPERIAL AND LANCASTER PIPPIN APPLES.—A correspondent inquires about York Imperial Apple. We had specimens sent us in 1862 from Mr. Evans, of York, on which we remarked at the time. His note accompanied the fruit we now give entire as it may answer our correspondent about the “York Imperial,” and is all we know of its history:—

“The ‘York Imperial’ has,—every thing considered,—proved our most desirable Apple for some years. It is a vigorous, thrifty grower; a regular and productive bearer (I had rather say *very productive*) and a valuable keeper, in addition to its qualities as an *Apple*, of which the specimens may enable you to judge. I have had excellent specimens of it a month later than this, and for our section consider it A No. 1 fruit.

“The ‘Lancaster Pippin’ has proved a regular and very productive bearer and an excellent keeper. The tree is very thrifty. It is new to me, and was handed me, with the ‘York Imperial’ I send you, by Mr. E. Jessop, several days ago. Should you know it under any other name, should be obliged to you for any information you may have regarding it. In quality it is only good.”

GREENHOUSE FOR TEXAS—*A Correspondent at Austin, Texas* writes:—“I am anticipating building a small greenhouse, and on as economical a plan as possible, yet frost-proof in Winter, combined

with all the facilities for shade in Summer as I can. For although it is but occasionally that we have frost enough to kill plants in an ordinary house here, yet we have it sometimes, and when we do get it, it is generally accompanied by a strong north wind, that would almost pierce through a bar of iron, and this generally occurs once or twice every Winter; and the first thing we know all our choice plants are gone to the wall. They are, in a few houses, reduced from the vigor of luxuriance to premature death, (for we have much fine Summer weather here even in Winter).

“Nature has done much for Flora in this our Land of Flowers; some of their fragrance is delightful, and their colors and hues splendid and various; but still as ‘a Prophet is not without honor save in his own country,’ the admirers are beginning to feel anxious to see some exotics among us, and that some of noted character; therefore, in order to accommodate a few of these foreign guests, it is that I wish to build this house of reception.

“I will give you my idea of such a structure as I have conceived. The ground plan I propose to be 20 feet by 18 feet inside, the aspect north and south it suiting the situation best. The north side I intend for a Summer residence for my pets, which will be covered with shingle, zinc or tin, with an open gallery which I propose to be 8 feet wide, this kind of roof will give shade in Summer which is much needed here. The south side, which will be 10 feet wide, to be devoted to Winter-quarters to be covered with glass.

“The division wall and the whole of the west gable to be built of brick.

Now, as in the multitude of counsellors there is safety, I wish to ask you two questions.

“1. Would it not be better to have the division of glass with shutters or very heavy blinds to let down in case of a norther?”

“2. Would you prefer brick or glass at the front of the south side and how high would you advise it to be carried before the wall plate for the rafter for the sash to rest upon? You have more experience than I in these things.

“I should like a propagating pit, against the front of the south side, say from two to three feet wide. Of course to succeed in this, it would be desirable to have bottom heat. Please let me know what would be the smallest hot-water furnace and pipe sufficient for a pit of this size.

I want you to encourage us amateurs of the far south. We have had a hard time of it lately, shut as it were, entirely out from our fellow-laborers in the same vineyard not permitted to pass compli-

ments, nor to get a word of advice from them; but we may be of some service to you eastern people yet, we have a great field before us here, and you have an opportunity to reap some of the fruits thereof."

[1. We should use board shutters made to fit on the outside, like sash, and be set away in piles ready to use, when not in service.

2. Use brick two feet above the surface of the ground. Then two feet or so of glass. Side light is of great benefit to plants blooming in Winter and early Spring, and houses with side light are more easily kept warm than houses without them.

We should glaze the north side as well as the south side,—and shade the glass in summer with whitening on the inside which could be washed off in Winter,—which would give you a chance to use it in Winter as well as in Summer.

You want so little heat in greenhouses that we see no use for the expense of hot water for the propagating pit. A hot-air chamber over the flue, made under a brick pit would answer every purpose.]

LYCOPodium Densa at the PENNA. HORT. SOCIETY'S EXHIBITION—*C. C., Germantown, Pa.* says:—"The *Lycopodium densa* as credited to Mr. Joshua Longstreth's gardener was grown and exhibited by Mr. Francis O'Keefe, gardener to J. B. Heyl, Esq., one of our best plantmen."

EFFECTS OF COLD ON THE WOOD OF PLANTS—*Dr. James Weed, Muscatine, Iowa*, sends the following memorandum:—"I understand you have experienced a lower temperature the past Winter than is usual in your climate. I trust you will not neglect to examine the young shoots and the young layer of wood, the growth of 1865, on the older branches of the Peach, Apricot, &c., and observe if in the slightest degree discolored. If so, by cutting through the new wood of 1866 in August or September the injury from the Winter's ordeal can easily be seen.

"We have a fine prospect for Cherries, Pears, Apples and Grapes at this writing (May 16), but are not yet safe from frost."

FRUIT PROSPECTS AT WEST MILTON, OHIO.—"The cold snaps we had last Winter done up our *Cherry* and *Peach* crop and came near doing up the trees too—however many of the finer kinds of each are sadly injured—and our wheat suffered severely also. The *two* last I think did the work in February and March. The depression was only 17° below

zero, yet come on so sudden it was too much for even comparatively hardy trees and plants to withstand. We had such a fine Fall and early Winter to ripen things, I had hoped we would have escaped this extreme cold once more. But we will still plant and hope to realize something from our labor in the future. Apples seem to be setting pretty well, if the frost and insects let them alone, hope we may have some again, also a few Pears, but we will have to depend more on the *minor* fruits again this season. People are awakening up around here to their importance, and are planting freely of them since Apples have become so scarce. Even the hardy May Cherry crop is nearly a failure with us."

NOTICE OF COL. ROBERT CARR.—Mr. Meehan was called upon by the Pennsylvania Horticultural Society to announce the death of Col. Carr only a few hours before the meeting,—and being wholly unprepared for the duty, a few historical inaccuracies crept into the narrative. It appears Col. Carr has left some distant relatives. The widow of the late Mr. George Lees, of Philadelphia, a sister of Col. Carr, is still living, in her 87th year, with several of her children and grandchildren. His isolated life, against the wishes of his relatives, but by the honorable instincts of his independent spirit, led us to suppose he had no surviving ones.

It was not Col. Carr's father who wandered away, but Mr. King, his step-father. His father, Archibald Carr, arrived here in 1784, established himself in the grocery business in Philadelphia,—and was accidentally drowned, on a voyage to New York in a sloop, for goods for his store. His body was recovered and buried in St. Paul's churchyard, Broadway.

Col. Carr married, as we said, his cousin's widow,—but that was the son of the William Miller we named, who was therefore Col. Carr's uncle.

He did not continue the business which he settled by marrying the widow, but established himself at once in the printing business in 4th Street, below Sansom.

He married Ann Bartram in 1809, and continued the printing business during his absence in the war from 1812-'15, by the help of a brother William, who was his partner—and he took up his residence in the garden after his return, Mr. Bartram being then deceased.

We are indebted to Mr. W. B. Snyder, a grand-nephew of Col. Carr, for these corrections.

GREELEY PRIZES—*P. T. Q., Newark, N. J.*—"In the May number of the *Gardener's Monthly*

under the heading of the "Greeley Prizes" you state that the \$100 offered by Mr. Greeley for the best Pear for general cultivation in the Northern and Middle States,—was awarded to Hovey's Dana. This statement is incorrect. The award was made to the Bartlett Pear and Baldwin Apple by a majority of one vote in each case over the Sheldon, and Rhode Island Greening; the former receiving four and the latter three of the seven votes.

"I quote the following from the report of the committee published in the March number of the *Horticulturist*. 'It was there determined that the committee should select by ballot six varieties of Apples and six varieties of Pears for general cultivation, comprising two Summer, two Fall and two Winter varieties. Mr. Hovey, from Boston, who was present, was invited to take part in the vote.

APPLES.

Summer. Fall. Winter.

Red Astrachan, Porter, Hubbardston's Nonsuch,
Primate, Gravenstien, Northern Spy.

PEARS.

Summer. Fall. Winter.

Manning's Elizabeth. Sheldon, Lawrence,
Rostiezer, Seckel, Dana's Hovey.'

We will have to call our Philadelphia friends to account if they do not examine the pages of their New York cousin more closely."

[We have never said this of Dana's Hovey. We judge from Mr. Quinn's note we read our contemporaries better than he does the *Monthly*. We stated sometime ago that we were astonished that the Greeley Committee should recommend a Pear like Dana's Hovey for *general cultivation*, when from the fact that it had not probably been fruited in a dozen different localities in the Union the committee could not possibly know any thing about its merits for general cultivation, unless, as with the age of dwarfs, Boston is the "hub of the universe" and what does well there must of necessity do for all times and places. In our April number (not May) we referred to our former remarks on this subject. We have only to repeat what we *did* say in the paragraph Mr. Quinn supposes he refers to, that as the committee reconsidered their *award* on the Iona Grape, we hope they will reconsider their *recommendation* of the Hovey Pear, until facts shall decide whether it can be justified.

The Hovey Pear is of first-rate flavor. The *Gardener's Monthly* we believe was the first magazine out of Boston to acknowledge its superior merits in this respect; but Mr. Quinn surely knows that

good flavor is not the only requisite to general cultivation.]

OBITUARY.

MR. L. P. CHANDLER.

As already briefly announced, Mr. L. P. Chandler died at his residence in the town of Burke, at 12 o'clock, M., May 8th, after three days illness, aged 34 years, 1 month and 28 days.

Mr. Chandler was the proprietor of the extensive Rock Terrace nurseries, situated five miles north-east of Madison. He was formerly superintendent of the fruit grounds of the Hon. Marshall P. Wilder, the well known President of the United States Agricultural Society, who resides near Boston, Mass. Mr. C. was the Vice-President of the Wisconsin Horticultural Society, and has always been an active and influential worker in every thing pertaining to fruit and flowers, holding a high rank among horticulturists. He has been a resident of this State for about six years, and has established his reputation as a useful citizen, a worthy and upright man. He leaves a wife and five children, and many warm friends to mourn his decease.—*Wisconsin State Journal*.

Books, Catalogues, &c.

THE BOOK OF ROSES. By Francis Parkman.
Boston: Published by J. E. Tilton & Co.

Some years ago, when a friend of the writer thought to issue a work on Horticulture, he offered it to the principal New York publishers, and was told there was no sale for horticultural works. Philadelphia publishers were then approached, with less encouragement; and at last the author had to condense his matter into a small compass and publish it in as cheap a form as possible and have it published at his own risk and expense.

Horticulture has become fashionable since that day,—and publishers, especially in Boston, vie with each other as to whom shall fall the credit of placing the best writers on horticulture before the public, and in the most inviting form. It is becoming almost a monthly duty for us to notice some beautifully gotten up and valuable work from the Boston press.

This one of Mr. Parkman is worthy of all the praise we have given the others in this general sense. Of the particular subject chosen by Mr. Parkman, much has been written, and written well, yet leaving much to be said by our author,—who,

well as he also has written, has yet, we think, left more to be said by those who shall write after him. The Rose, on an entirely American platform, has yet to have its principles defined. To Mr. Parkman belongs the merit of a nearer approach than any other writer has made.

The work is divided into seven chapters. Open-air Culture, Pot Culture, Propagation, Miscellaneous Operations, Groups and Families, Summer Roses, Autumnal Roses.

A very useful feature is the supplement, giving a descriptive list of all the best Roses. Many of our catalogues have them,—that is some a few, and others a few. We have ourselves felt the want of a list altogether, and we have to regret, that full as this list is, the author did not feel at liberty with his outline of giving “only the best,” to extend it further.

The most American chapter—that on the Prairie Rose—gives us much pleasure. It would seem as if the remarks of Rivers, that “none of them are worth cultivating,” has frightened American Rose raisers,—for we have not heard of any new one of excellence for a long time,—yet we are sure if the proper attention was bestowed on them all the merits of the most popular foreign varieties might be infused into them. Mr. Parkman is wrong in classing *Superba* with Prairie Rose. It is certainly a true Noisette, exhibiting strongly a marked feature of that class as grown in America,—a disposition to flower more profusely in the Fall than in the Spring, the reverse of which character is the Prairie Rose.

THE NEW BOOK OF FLOWERS. By Joseph Breck.
New York: Published by Orange Judd & Co.

This new edition of Breck is issued by the distinguished proprietor of the *American Agriculturist*, to whose superior talent as a publisher, the present extensive taste for agricultural and horticultural occupations the country owes so much.

Breck's “book” is very well known, and it is one we have been in the habit of recommending to our readers whenever we have had an inquiry for the best “book on flowers.” It has now, the author says, been entirely re-written,—but we are sorry to say that it is not as fully “up to the times” as it might be,—though we can fully endorse it as still the best of its class for the general reader.

As a sample of the short comings to which we refer, we take at random the chapter on the Tuberose. Breck says the botanical name *Polianthes*, is derived from the Greek words for *many* and *flower*. Those of his readers who have read the essay of

Doctor Asa Gray on the subject in the *Gardener's Monthly* will know better. We are also quite sure that the sentence “imported roots thrive much better than those raised here,” was correct when Mr. Breck's first edition appeared,—but will not be generally esteemed correct now. In describing which are the “best roots,” many readers would like to know how to select those which will flower from those which will not,—as this has been fully explained in the Horticultural journals during the past few years, it might have found a place in a new edition of Tuberose chapters. So also in the treatment of the Tuberose, one would think to read Mr. Breck, that only those could grow Tuberoses who have hotbeds or greenhouses, which is very far from the fact.

Mr. Breck's book is not alone in such faults as these. We can scarcely take up one new horticultural work in which we do not find them. It is painful to us to have so continually to refer to them, as it would seem as if we wished to be “nothing if not critical,” while we would much sooner praise than blame.

With the business tact Mr. Judd possesses, this edition will, no doubt, soon be exhausted; when a little more care on the part of the editor will make the work all that could be wished for in a handbook of flowers.

THE MINIATURE FRUIT GARDEN. By Thomas Rivers. First American from the Thirteenth English Edition. Re-published by Orange Judd & Co., New York.

There has been a great demand for this work in the United States,—many having imported it for themselves notwithstanding the great cost. By this effort of Mr. Judd it will now be sold at a low price within the reach of all interested in dwarf fruit trees.

TRANSACTIONS OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

By the issue of this little volume the Pennsylvania Horticultural Society has founded a new claim to public support. It comprises nearly 100 pages,—and besides the annual abstract of the proceedings of the committees on exhibitions, contains all the essays that have been delivered before them, which, considering that the essayists are selected from amongst the leading men in the science of gardening, gives to the “Proceedings” a standard value, which the members of the Society will properly appreciate.

New and Rare Fruits.

A NEW WHITE GRAPE.—*Mr. S. Miller* writes:—"Is it not desirable to get a good, hardy white Grape that will succeed in our latitude? Yet such is not yet before the public to any extent.

Suppose we run over our list and experience with white Grapes.

First, Maxatawney, white, at \$3 for a vine, turns out a red Fox Grape. Rebecca next, at \$3. tender here, and mildews, but of excellent quality. Anna, same price, don't ripen here. Cuyahoga, no doubt a superb Grape, but on ten vines, 4 years old, never a ripe berry; mildews, worst kind. Carpenter's Lydia, a noble Grape, but is nearer red than white. Maxatawney, fine, but mildews, and has failed to ripen in many instances. Then where are we? Allen's Hybrid, of the finest quality, but quite as difficult to ripen here as any other foreigner; tender, and if protected during the Winter mildews next season so that there is no ripe wood. I had canes of this variety, fifteen feet long, last Fall and as thick as my middle finger, laid on the ground, and this Spring all dead.

But to the point. We have a white Grape that bids fair to take a place in the first ranks. The Martha is simply a white Concord, perhaps not quite so large, but sweeter. Has every good trait of the Concord, which is its parent; ripens about the same time, and is a vigorous grower and abundant bearer.

I have seedlings from this crossed with Bowood Muscat, just coming up; what they will make time will tell."

[*Mr. Miller* puts the case well. We have really no good white Grape,—good in every sense of the word—a white as good as Concord would be an acquisition. *Mr. Miller* is the raiser of "Martha,"—but has sold the entire stock to another grower.]

THE IDA STRAWBERRY.—*Mr. E. H. Cocklin, Shepherdstown, Pa.*, writes:—"I send you by mail a few Ida Strawberry plants, please give them a trial, though probably you have them already.

"It originated with us ten years ago; do not know from what variety it was produced, but think it has a 'dip' of 'Lucy Fitch's Prolific.'"

"Its good qualities are, extreme hardiness, very prolific and beautiful appearance; berry large, almost round; color bright scarlet; fair quality; pretty acid when quite ripe; then first-rate. It is

a pistillate,—but without regard to fertilization it has always produced a large yield.

"W. S. Carpenter has put a prefix Miss to it. This is a sort of imposition. He first advertised it as Ida, this Spring he has attached the 'Miss.'"

Domestic Intelligence.

THE HONEY LOCUST HEDGES.—I have been practically interested in Honey Locust Hedges for a number of years and have tried it quite extensively in the east, especially in Northern New York, also in the west, and can speak in unqualified praise of the Honey Locust as a hedge plant, provided it be properly treated.

To commence with, the ground should be properly fitted either by spading or ploughing to the depth of at least one foot, and as wide as may be thought necessary. Before setting, the roots should be well puddled and the stalk cut back so as to leave but two inches above the ground. Then set the plants one foot apart with a dibble or sharpened stick, by making a hole in the ground inserting the root, and run the dibble down an inch or two from the root so as to crowd the dirt firmly around it. It should be always borne in mind that no plant will of itself make a good hedge,—that form, strength, density and effectiveness are solely the work of the knife. For the first four years the hedge should never be trimmed on the sides, but from one to two-thirds of the same season's growth should be removed from the top at the time of clipping, leaving the sides uncut. The best time to clip, according to my experience, is in June, the first of September and in the month of February. By clipping in June we cause the ensuing growth to greatly thicken; by clipping the first of September the growth of the plant is sufficiently checked to allow it to ripen all remaining wood for Winter, while the February clipping produces the same effect as the June trimming. At the end of four years sufficient height will have been attained to answer the purpose of a fence when shape may be given to the sides or the hedged trimmed to its proportions which for a full grown hedge should be three feet wide at the base two feet wide at the top and four feet high. The Honey Locust evinces wonderful tenacity of life, and bears trimming well. Care must be taken to cut back severely so as to produce a proper density and compactness of form and to induce the plant to acquire a dwarfed habit of growth.—W. D. HOARD in *Prairie Farmer*.

WINTER PEARS AT THE MEETING OF FRUIT GROWERS', AT ROCHESTER, LAST SPRING.—Mr. Marshall P. Wilder urged the necessity of thinning out the Winter Nelis early in the season. The remaining specimens would be much better in consequence. The same remark would apply to other Pears. The Doyenne d'Alençon was a very excellent Winter Pear—hardy, an abundant bearer, and a good ripener. The Beurre d'Anjou was also a valuable Pear. He made it a Winter Pear, and if he could have only one variety, that would be the one. The secret of keeping Winter Pears is to keep them below the temperature which will ferment the juices and bring them to maturity. His Winter Pears are left on the trees as long as possible. But, after all, Mr. Wilder doubted the expediency of growing Winter Pears extensively. Providence supplies a peculiar bounty for every season, and fruit out of season is not relished as well in its natural time. Winter Pears must always cost a great deal, for aside from the difficulty of raising them, they require a great deal of care afterward. He had sold selected lots of the Vicar of Winkfield, at Taylor's, New York, at \$12 per bushel.

WHEN TO MANURE ORCHARDS.—We often receive inquiries as to the amount of manure to be applied to trees. The answer must be, act according to circumstances. The question again recurs, How shall we know what our soils need? The answer is, observe the results of growth. An examination or analysis of the soil will be of little use. But the trees will tell their own story. If the soil is so rich that the trees make annual shoots of two or three feet or more in length, without any cultivation or manuring at all, (which, however, is hardly a supposable case), then it will be needless to give additional care. The *annual growth is the best guide to treatment*. There are very few Apple or other orchards which, after reaching a good bearing state, throw out annual shoots more than a foot or foot and a half long, and many not half this length. The owner may lay it down as an unalterable rule that when his trees do not grow one foot annually, they need more manuring or cultivation, or both. By observing the growth he can answer all questions of the kind referred to without difficulty.—*Country Gentleman*.

REMEDY FOR PEAR BLIGHT.—When the sap is in active circulation, smear the trunk and lower limbs of the tree with a mixture of sulphur and soft soap. Cut off and remove all dead limbs.—S. POLLOCK in *Iowa Homestead*.

Foreign Intelligence.

ERYTHRINA CRISTA GALLI.—This is very readily propagated by taking off the young shoots from the crown when they are three or four inches in length, and striking them in the sand in heat under a bell-glass. Or, when the plant has flowered, cut the shoots into lengths, with an eye and a leaf attached to each piece, insert in sand in heat as before, and they will strike as readily as the eyes of a vine or a rose.

VARIABILITY OF FERNS.—A crop of plants had been raised from the spores of *Nephrodium molle cristatum*, a very indifferently crested form of a very common Fern, a form indeed but slightly removed from the normal condition of the species, from the very slight degree of development manifested in the crests. In this batch of young plants occurred a considerable number—we are not informed as to the proportion—of most remarkable deviations from the parent plant. Many of them have the stipes and fronds repeatedly branched, and the parts everywhere densely crested, yet not assuming the character of *N. molle corymbiferum*; this form might be called *ramosissimum*, and is analogous to the magnificent form of *Filix-mas* bearing that name. Others, with more of the plane character of the normal state of the species, had well-crested apices both to the pinnæ and frond, and a forking of the stipes, though less developed than in the former: such a development as might be called *ramosum*. A third set, with very little of the plane portion in some cases, and none at all in others, bore a great glomerate crested head of crispy segments.—*Gardener's Chronicle*.

KOELREUTERIA PANICULATA.—This is a tree of the middle size, with a loose irregular head, polygamous, that is sometimes hermaphrodite, and sometimes uni-sexual: a native of China, and introduced in 1763. It was first cultivated in Croome, in Worcestershire, by the Earl of Coventry; and is highly ornamental, both for its large compound leaves and fine loose terminal spikes of yellow flowers. It is very hardy. It has not only a very fine appearance when in flower, but also in Autumn, when the tree is covered with its large bladdery capsules, and the leaves change to a deep yellow. It is of the easiest culture in any common soil, and is readily propagated, either by seeds or cuttings of the roots or branches. The tree ought to be in every collection on account of the beauty of its leaves, flowers and fruit.—*Loudon*.



KOELREUTERIA PANICULATA.

ISPAHAN PEACH.—Leaves finely and sharply serrated, without glands; flowers large. Fruit small roundish; skin yellowish white on the shaded side, tinged with red next the sun. Flesh parting from the stone, or but slightly adherent, white, sometimes slightly rose-colored next the stone, melting, with an acidulated sugary, slightly perfumed juice. Stone elliptic. Ripens at Paris about the middle of September. It was supposed that the Ispahan Peach might be the natural type of the Peach, which, originally brought from Persia, has given to Europe the multitude of varieties, and of which Duhamel described more than 43 of the more remarkable for their beauty and excellence; but this shrub, or bush, has not been found wild in Persia, only in gardens. We ought therefore to suspend our opinion on this point till under longer culture its variations have been observed. We owe the tree to the voyage of Bruguière and Olivier. They found it in the gardens of Ispahan, where they frequently met with it abandoned by Nature, without having been budded or pruned, in order to improve its production. They thought the fruit possessed an agreeable flavor, and although it was in the month of November, it was scarcely ripe. They collected some of the stones, which formed one of the 738 kinds of seeds which they collected during their interesting voyage, and with which M. Olivier (whose companion perished) enriched the Museum of Natural History on his return in 1800. Five of the stones were sown, none of which rose the first year, but three came up in the Spring of 1801.—*Décadine*.

THE DIET OF WORMS.—Many persons are not aware of the fact, that the earthworm really does live upon earth. It is sometimes stated in popular works on zoology that the worm picks out portions of leaves, grass, &c., and devours them; but this is quite a mistake—the earthworm lives upon earth. It must not be supposed that it assimilates the mineral constituents of the soil; its gastric and biliary secretions dissolve the decomposing animal and vegetable matters which are invariably contained in rich soil, and it is these which are assimilated. The earthworm could not live upon earth that had been burnt and deprived of its organic constituents. In a similar way the arenicola, or lugworm, which lives in the sands exposed by the action of the tide, gorges itself with that substance, and extracts the matters which it contains fit for nutriment.

FOREIGN CORRESPONDENCE.

BY AN OCCASIONAL CORRESPONDENT.

Upon looking over the pages of the *Monthly* for January, I could not but feel a sense of shame when

I reflected how much I had neglected my duty as a contributor to its pages, for I hold, and I have no doubt you, Mr. Editor, will agree with me, it is the duty of all to impart, if it is in their power, as well as to receive information. I also hold, and here again you will, I am sure, agree with me, that no one should attempt to write for the information of others upon any subject if they are not prepared to bring forward facts, or to speak from their own or their friends' experience. Speculations and theories are all very well, but let them be given as such, and then what value is to be placed on them is known. Well, when I look around and consider what subject I am most qualified to write about, I at once think of my Roses, a large collection of which I have the care of. First I must tell your readers I am very fond of Roses. Who is not? you will ask. Well, I carry my fondness for them to a passion, and often have I seen a smile on the faces of my fellow-workmen as they see me spending my dinner hour amongst my Roses. I will also mention a fact that one, at least, of your contributors will bear me out in; I have been very successful as an exhibitor of Roses, and am proud of my first prize cards, and I think, after having successfully combatted green fly, caterpillars, mildew, and the host of enemies the rosarian has to contend against, he has reason to feel proud if he obtains a prize amongst the host of competitors who always swarm in the Rose class.

The first difficulty, I take it, that the would-be Rosarian meets with is, what Roses to buy; and let me here state that the list of Roses in the winning stands which so often appear in the Horticultural journals is not, at all times, a safe guide to the formation of a collection. These collections, as exhibited, are in a great many cases sent by Nurserymen who have a name for Roses, and desire to retain it by advertising the number of cups and certificates they have won in the preceding year, and who have, in most cases, acres of Roses to cut from; and it is always possible that, to obtain a perfect bloom of any particular kind, they may have to search fifty plants for it.

Neither is it possible to give a list of Roses that can be guaranteed to do well in any locality, as I have often found that Roses which do well in one place can not be made to do at all in another. All that the Rosarian can do is to give a list of sorts that he has found to do well, and which, being possessed of a good constitution, will be likely to do anywhere; and this is what, with the permission of the Editor, I propose to do for the readers of the *Monthly*.

First on the list I am anxious to place Charles

Lefebvre. This variety has done splendidly with me for two seasons, both as a dwarf and a standard; it is very much in the style of *Senateur Vaisse*, but I have found it a stronger grower and certainly superior to it, though I would not desire to be understood to speak against the *Senateur*; he has behaved well, and fully come up to the good character I received with him. As I, in these notes, shall not attempt to confine myself to any class or color, I will leave the high-colored Perpetuals for a minute, and for fear I should forget it, write the name of the new Yellow Tea Rose, *Marechal Neil*; I had a few blooms from a small plant last season; they were so fine that I feel I cannot do justice to them; the advice I give the readers of the *Monthly* is, if you require something new and good, hurry off to your Nurseryman and give him an order for this Rose.

To return to the Perpetuals, I must mention *Souvenir du Comte Cavour*, the blooms of which, though I have not grown very large, is a great favorite with me on account of its color, which is a very dark shade of scarlet; it has nice foliage, is a good grower, and will be sure to please.

Next in my estimation I must place *Madame Charles Crapelet*. It is in the style of the well-known Rose *Jules Margottin*, and is of good form. The petals of this Rose have a very glossy appearance, which is very pleasing. *Comtesse de Chabrillant* is, I think, the most perfect shaped Rose with which I am acquainted; it expands a very bright pink, fading to a light pink wiltage; I have found it a good grower and bloomer.

Oliver Delhomme is, like the preceding one, remarkable for fine shape. It belongs to the high-colored class, and is very beautiful. The two old Bourbon Roses, *Acidalie* and *Souvenir de la Malmaison* are as good a white and blush as could be wished for; the first I have found rather shy of its blooms, and it should not be pruned very hard.

Madame Rivers is also a very fine white; though hardly so good a grower as I should wish, is still worth growing, as its blooms amply compensate for its growth.

To *Francois Lacharme* I must assign a first-class place; in color it is a very bright scarlet, is of perfect shape, and a good grower.

Anna de Diesbach, somewhat in the style of *Madame Chas. Crapelet*, but quite distinct from it, is a great favorite with me. It is very large; in fact that is the only fault I find with it; for I must admit, though I may perhaps be classed as opposed to progress, that I don't like huge Roses, and I think if raisers of Seedling Roses were to give more

attention to form and less to size, it would be a step in the right direction.

I must not omit my old favorite, *Gloire de Dijon*. This is with me the first and last in bloom. On a Standard of this variety in my rosary I counted at one time a hundred blooms. During the last season we were continually cutting from this Standard, and there were blooms on it nearly up to Christmas.

Madame Chas Wood, purplish-scarlet; *Auguste Mie*, light pink; *Duc de Rohan*, bright scarlet; *Celine Forestier* and *Triomphe de Rennes*, fine yellows; *Madame Boll*, bright pink and very double; *Triomphe de Caen*, very dark and beautiful in the bud; and *Empereur de Maroc*, for those who like a nearly coal black Rose, which is also very highly scented—will form a collection which, if not large, will at least have the merit of being distinct.

I propose, with the permission of the Editor, to give, in some future number, my ideas upon pruning Roses, the soil most suitable, &c., and until then let those readers of the *Monthly* who are not Rosarians purchase if only a dozen Roses, and give them a small amount of care, and I will guarantee them an amount of pleasure that they did not anticipate whilst watching over their Roses in early morn, or in the twilight of evening.

Horticultural Notices.

FRUIT GROWERS' SOCIETY OF PENNSYLVANIA.

(FORMERLY EASTERN PENNSYLVANIA.)

This Society has changed its name, the idea being to take the whole State under its wing. As a proof of its earnestness, it proposes to hold a Summer meeting at Pittsburg, on the 12th and 13th days of June. This will be about the time when Strawberries are ripe, and as discussions will be in order, no doubt the virtue of Pittsburg smoke, Pittsburg soil, or Pittsburg skill on the reputation of this delicious fruit will be thoroughly put to the test. We hope there will be a good attendance.

PENN'A. HORTICULTURAL SOCIETY.

STATED MEETING AND DISPLAY MAY 15TH.

The Committee on Vegetables report the following awards:—

The Committee on Fruits report that they have awarded the premium for Grapes to W. J. Young, gardener to Stephen Morris, for a dish of very fine Black Hamburg. They also have awarded a special premium of \$1 for a dish of well-ripened Peaches,

Hale's Early. They have awarded to Mr. D. W. Herstine the premium of \$2 for Strawberries—Wilson's Albany, they being remarkably large and well ripened.

Best 12 stalks Rhubarb to A. L. Felton. Best 6 heads Lettuce to A. L. Felton. Best collection of Vegetables to A. L. Felton. Best collection of Vegetables by an amateur, J. McDonald, gardener to M. Baird, and notice favorably some finely-grown Asparagus and Radishes from A. L. Felton.

A special premium of \$1 to Jacob Huster, gardener to H. Duhring, for 5 heads of finely-grown Cauliflower, and notice favorably his collection of Vegetables. Also a special premium of \$1 to Wm. J. Young, gardener to S. Morris, for early Tomatoes.

The Committee on Plants and Flowers report the following awards: Table Design, best, D. McQueen, gardener to J. Longstreth. Basket Cut Flowers, best, D. McQueen, gardener to J. Longstreth. Hand Bouquets, best, D. McQueen, gardener to J. Longstreth. Hand Bouquets, 2d best, F. O'Keefe, gardener to J. B. Heyl. Hanging Basket, best, F. O'Keefe, gardener to J. B. Heyl. Collection 12 plants in bloom, best, E. R. Hibbert, gardener to F. Rogers. Collection 12 plants in bloom, 2d best, D. McQueen. Pelargoniums, 6 plants, best, D. McQueen. Pelargoniums, specimen plants, best, D. McQueen. Ornamental Foliage Plants, best, E. R. Hibbert. Bedding Plants, 6 pots, best, E. R. Hibbert. Hardy Flowering Shrubs, best, P. Mackenzie & Son. They also recommend a special premium of \$2 to Mrs. Anna Williamson for a basket of Dried Flowers. Your Committee are pleased to mention a beautiful plant, *Gardenia Stanleyana*, from the garden of F. Rogers; *Ryncospermum jasmnoides*, from the garden of J. Longstreth, both in full bloom. Also Button-Hole Bouquets from D. L. McQueen, and Tulips from G. W. Earl. E. R. Hibbert, gardener to F. Rogers, collection 12 plants in bloom, collection 12 Ornamental Foliage Plants and one Hanging Basket. D. McQueen, gardener to J. Longstreth, collection 12 plants in bloom, Bed Plants, collection Pelargoniums, 6 Cut Tulips, Hanging Basket, basket Cut Flowers, Table Design, pair Hand Bouquets, Button-hole Bouquets.

The following is the committee appointed by the President to consider and report from time to time upon the best form of boiler for plant-houses: Fairman Rogers, Jos. Harrison, Jr., Prof. John Frazer, E. R. Hibbert, John Sherwood, P. Mackenzie.

Mr. T. P. James moved that the Committee on establishing Premiums be instructed to prepare

certificate cards to be issued to all persons taking premiums.

Constant Guillou, Esq., was duly elected to membership.

ILLINOIS HORTICULTURAL SOCIETY.

WINE DISCUSSION AT THE JANUARY MEETING.

Mr. Eisenmeyer read a paper upon the subject of Wine and Wine Making, as follows:—

The first requisites for wine making are a good cellar, good, clean, sweet casks, industrious hands, and a thermometer. But before we go to making wine, we must know the time of harvesting the Grapes. A "Must-scale" is, therefore, necessary, and as your Grapes are ripening, from time to time you must press out sufficient must to enable you to tell the amount of saccharine the Grapes contain. From 70 to 100 degrees, according to season and kind of Grapes, is a very good must, and will make excellent wine if rightly handled during the fermenting process and after culture. On the 15th of September last, we gathered some of our Concord Grapes, and, not having a "Must-scale" at hand, we are not able to say what its amount of saccharine was, but by adding a little sugar to the must we make a good wine. The grasshoppers were very destructive, otherwise we should not have harvested so early. On the 2d day of October, having in the mean time procured a "Must-scale," we weighed the Herbemont not fully ripe, which weighed 68 from Grapes on level land. On hilly land it weighed 75, and on the 9th of October its weight was 82, when we gathered it and made very good wine. Norton's Seedling, not fully ripe, weighed in October 23, 90. Catawba same day weighed 76, and on the 28th of October Concord must weighed 85 and Catawba 72. Thus you will see how to decide as to the time of harvesting Grapes. It is better to let your Grapes get fully ripe than to gather them too early. Better let the grasshoppers and other insects eat some of them than to gather too early. The grasshopper disappeared with us on the 25th of September.

The Grapes, when mashed and ready for the press, should be put into large tubs or barrels, and allowed to ferment for a few days, the tubs being covered up. Afterwards press out and put the product in your fermenting cellar to go through a second fermentation. The temperature should be as even as possible all the time, in order that the fermenting should not be checked. After that your wine is ready for the cellar and for the market if it has been rightly managed. It is, perhaps, not out of place here to say, that your casks should always

be kept clean and sweet; newly emptied brandy casks are always preferable. The foregoing process is applicable to our red wines, by fermenting over the pomace, you extract all the tannin and astringent substance out of the Grapes, which would otherwise be lost. If your must contains too much tannin or astringent matter, from one-fourth to one-fifth sugar-water can be added to make your wine more palatable.

A second and inferior quality of wine can also be made by adding sugar-water to your pomace. After the first pressing, let it remain a few days and then press again; if you had good ripe Grapes you will obtain a good second-rate quality of wine.

Dr. Hull—I would ask Mr. Eisenmeyer in regard to the sugaring of wine, what he thinks of it.

Mr. Eisenmeyer—Do with your Grape wine as you would do with your coffee, make it to suit your taste. I would call that good wine which was sweetened to the taste of the community in which you live.

Question—Do you use white sugar?

Mr. Eisenmeyer—I use the best.

Question—How much sugar does it take to a gallon?

Mr. Eisenmeyer—About 1½ pounds to one gallon.

Question—What proportion of water in that on exhibition?

Mr. Eisenmeyer—About ½ of a gallon.

Question—What kind of water do you use?

Mr. Eisenmeyer—Use the best you have; rain water is preferred.

Dr. Warder—I have been very much interested in hearing this paper read, and concur with the writer in all the leading points save one, and that is in relation to this unfortunate adulteration. If we cannot make pure wine from the Grapes we had better give up the business. It is said that the object was to suit the tastes of the people. Now if the tastes of the people are for adulterated wine, still we prefer the pure wine. I would be very sorry to have this Society recommend the use of any such process.

Dr. Schröder—Dr. Gall, of Germany, said that in good wine there should be so much per cent. of acid, so much of sugar, and so much of alcohol. Now, sometimes when the Grape crop was injured there was not found the right per cent. of sugar. So he came to the rescue and said, I will put sugar in; not the sugar bought here in the stores, only grape sugar, and he had on his grounds no less than two large grape sugar manufactories. He used so much grape sugar, and thus made a wine that was palatable. His intention was not to make adulte-

rated wine, but to make it *good*. I spoke on this subject in St. Louis two hours, and fought my way right through like an Illinois boy (laughter), and I told them that the American people was a *sweet* people and must have sweet wine. The Germans have sour pickles and a wine so sour that it takes three men to drink it (laughter); but the sweet wines are better. Go to Italy; there they like the sweet wines. Now, go to France; do they not like the sweet wines best there? That is what the American people pay their money for. They want sweet wine. I make sweet wine for the sweet people. (laughter.)

Wine that will weigh on the scale 85, they call sour wine. They want sweet wines, and, doctor, you will have to come to it. It is bad to use our common sugar. I make some grape sugar myself. You can make three or four pounds of sugar out of one bushel of potatoes. You can learn that from your Dutch doctor. (Laughter.) You will not have to come here to Normal to learn that. But what I want to impress upon your minds now is, that Dr. Gall did not propose to adulterate his wines. It was not his intention to adulterate it, but it was his intention to make it palatable.—*Prairie Farmer*.

ALTON HORTICULTURAL SOCIETY.

THE SPRING MEETING, 1866.

The following suggestions were made by Mr. E. A. Riehl:—

To make a hotbed heated by fire, select a spot having a grade of from one to one and a half feet in ten, making a trench five feet wide and three deep in the centre, with the sides sloping, so that they would represent a V with the top wide apart; make this as long as you wish your bed to be; fifty to sixty feet can be heated by one fire; in the bottom of the trench lay sheet iron or stone pipe six inches in diameter, or a brick flue; at the lower end of the bed dig a hole three feet long, two deep, and eighteen inches wide; in this place put a large box stove, or build a brick furnace with doors that will close snugly; if a stove is used, flags or brick should be laid over the top, also over the pipe for a distance of fifteen to twenty feet, and a coat of clay mortar spread on top to prevent too great radiation of heat at the fire end of the bed. At the upper end, place a wooden chimney six or seven feet high, to carry off the smoke; then place two by four joist six feet long, four feet apart, crosswise of the trench; on this lay a floor of one inch boards, put on frame, put in three to five inches of earth; throw earth up to the outside of frame so it will

shed water; wall up the lower end of the trench up to the floor or the bed, so that the stove will be inside under the bed, and only the door sticking out, so that you can make the fire from the outside. Put on your sash, start your fire, and in a few hours you can sow your seed.

These beds are cheaper than those made with manure, are more reliable, and can be controlled. Care must, however, be taken that the fire does not burn too strong. From two to four fires are enough for twenty-four hours; when the fire has started well, the dampers should be closed so as to make it burn slowly and steadily.

Sash should be made of well-seasoned two-inch lumber; sash six feet two inches long, four rows of eight by ten lights, laid lengthwise, i. e., the bars eight inches apart; lights should not lap more than one-fourth of an inch, and always laid in putty to make tight sash and prevent breakage of glass. Putty should have some white lead mixed with it to make it stick and last.

WEST JERSEY FRUIT GROWERS' ASSOCIATION.

[In our notice, in June last, of the very interesting report of the Proceedings of the West Jersey Fruit Growers Association for 1864-5, we took occasion to pronounce the essay thereto appended, on "Atmospheric Humidity as a Protector from Cold," one of the most valuable papers we had ever read. We also commended said paper as unanswerable in its deductions, and to be read with profit by every fruit grower in the land, and presented an analysis of it for the benefit of our readers. Having had renewed evidence of the truth and value of the essay, we will more than fulfil our promise, and publish it entire, believing it would be more acceptable and interesting to our friends.]

ATMOSPHERIC HUMIDITY AS A PROTECTOR FROM COLD.

BY JAMES S. LIPPINCOTT, HADDONFIELD, N. J.

The question has been asked why our native Grapes do not succeed as well in West New Jersey as near the lakes of Western New York and Northern Ohio? The large vineyards attempted in South-eastern Pennsylvania and New Jersey have invariably proven failures, while these near the lakes are almost always successful.

Some cause operating in each section over a large extent of country must be sought to account for this wide disparity in climatic adaptation to Grape culture. We believe this will be found in the vary-

ing amount of humidity present in the air of our region, while that of the lakes is more equable, and we believe, moreover, that we can prove this to be true in a manner not hitherto attempted.

We have reached the conviction that the climate of West New Jersey will not permit successful Grape growing for a series of years. Sooner or later, the destructive mildew presents itself, and withered leaves, bare branches, and an array of un-ripened berries are the result. Of the truth of this we have had ample illustration in the experience of H. M. Zollkoffer, whose vineyard of Catawbas and Isabellas, some sixteen years ago, existed near Chew's Landing in the county of Camden, N. J. This vineyard of ten acres bore two great crops, and though it produced fruit for a few years thereafter, it never again attained maturity. Though the after-culture was injudicious, the chief cause of decline appears to have been attacks of mildew, which occurred periodically, and blasted all hopes of success in a business so auspiciously begun. The entire scheme proved a failure, and was early abandoned, but not without serious loss to its zealous projector.

An attempt to explain the immediate cause of this appearance of mildew and consequent destruction of the Grape leaf and crop which are sure to occur almost every year in this section, would be out of place here; whether it arises from a sudden check given to the vital actions of the leaf—to destruction of its tissues by too great evaporation in excessive atmospheric dryness, or to engorgement of the vessels and their rupture, due to a sudden change from dryness to dampness, we will not say; we can, however, state from our own experience that the more destructive attacks of this evil have followed very early after sudden reductions of temperature while the vine was in the season of luxuriant early growth, and that the reduction of temperature was closely connected with extreme dryness of the atmosphere, so closely, indeed, as to be readily and reasonably considered in the relation of cause and effect.

Observations upon the relative humidity of the atmosphere in our country are so few in number, and so generally inaccessible, that it is not surprising that no attempt has been made to illustrate the periodical reductions of temperature connected with sudden accessions of dryness or diminution of the atmospheric humidity; indeed, it was not until the last two or three years that such relation was surmised, and it was not in the open air, nor by the meteorologist nor horticulturist that the discovery was made, but by the physicist in his laboratory, while investigating the properties of heat, that this

remarkable influence of humidity in arresting radiation was discovered.

Until quite recently it was believed that vapors furnish a perfectly open door for the passage of the waves of heat, because experiments made on atmospheric air were found to give no evidence that any heat was lost or absorbed by passing through it; but it has been proved by experiments conducted in various ways, at different times and seasons, and always with the same results, that a portion of vapor in the air near the earth prevents the free passage of many of the rays of heat which would have been radiated therefrom, and that an increase of the relative humidity still more largely arrests radiation. Regarding the earth as a source of heat, it is surmised that on a day of average dryness at least ten per cent. of its heat is intercepted within ten feet of the surface; and that, under some circumstances, the absorption considerably exceeds this amount. "Remove," says Professor Tyndall, the best authority on Heat, "for a single summer night the aqueous vapor from the air which overspreads this country (England), and you would assuredly destroy every plant capable of being destroyed by a freezing temperature. The warmth of our fields and gardens would pour itself unrequited into space, and the sun would rise upon a land held fast in the iron grip of frost." In the above is suggested the enormous influence which the newly-developed property of aqueous vapor must exert in the phenomena of meteorology.

To make this principle more clear, we may say that the presence of considerable vapor in the air near the surface of the soil renders the air nearly opaque to the rays of radiant heat which are at all times passing from the surface toward the upper regions; but that perfectly dry air is perfectly transparent to heat, or, to speak with precision, is perfectly diathermic or permits the rays of radiant heat to pass freely through it. This simple discovery, which was not established without innumerable experiments, serves to explain many phenomena before misunderstood or but partially comprehended. The withdrawal of the sun from any region over which the atmosphere is dry, must be followed by quick refrigeration, if the theory proposed be sound, and this we find to be true. The winters of Thibet are almost unendurable from the intense outward radiation or escape of heat uninterrupted by aqueous vapor, and her extremes of high and low temperature are enormous. In Australia, where the air is dry at times, the daily range of the thermometer, or from the extreme of low temperature to the highest in twenty-four hours, is very

great, amounting to between 40 and 50 degrees—a change we never witnessed in America, except on a day of extreme heat, closing with a storm of hail and terrific electric discharges. In the Desert of Sahara, that wide waste of sand whose fiery glow we would scarcely imagine to be ever tempered by cold, yet even here, "where the soil is fire and the wind is flame," the refrigeration is often painful to bear, and even ice has been formed in this region by night. To this extreme readiness to part with heat when the air above them is dry we must ascribe the ready formation of ice in shallow pans by night as practised in India. As water is a powerful radiant sending off its heat copiously into space when favorably placed, exposed to a cloudless sky and a dry atmosphere, and separated by a non-conducting substance from the warmer earth beneath, by sunrise a cake of ice will be found in each shallow earthen vessel so exposed and arranged. To prevent this refrigeration, a cobweb screen would suffice, and the still thinner, more intangible, though invisible vapor, by its spiritual presence, as it were, preserves from destruction, by the chill of excessive radiation, more effectually than the gossamer, may indeed become as sure a safeguard as a roof of glass above the tender plants. The decrease of temperature by night and the consequent formation of dew, and the still greater cooling and the deposition of frozen dew or frost, are familiar to every one; but that the energy with which this cooling is conducted is greatly dependent upon the dryness of the air has not been heretofore determined, nor has it been explained in popular language.

In the Atlantic States, or those east of the Rocky Mountains, these extreme variations of the thermometer are remarkable, and have been found very difficult of solution; but many of these anomalous extremes may be accounted for by reference to this newly-discovered property of transparent aqueous vapor. Its presence would check the earth's loss, and its absence, without sensibly altering the transparency of the air, would open a wide door for the escape of the earth's heat into infinite space. Now, the varying proportions of invisible vapor in the air near the surface play a very important part in modifying the climate of the State of New Jersey. Not only does this variation in the relative humidity in one section cause periodical changes, beneficial or injurious, to certain kinds of vegetation, but its more permanent abounding renders another section better fitted for their continuous and profitable cultivation from year to year.

(Concluded in our next.)

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THOMAS MEEHAN, EDITOR.
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Hints for July.



FLOWER-GARDEN AND PLEASURE-GROUND.

As soon as a flower fades on the Perpetual Rose cut it off. This is the way to have them flower again well in the Fall.

If you have more varieties than you care for, some of them poor, bud the rejected ones with the better kinds.

In budding, select strong, healthy shoots,—and let the buds to be used for the inoculation be a little in advance of the stock. Works on Roses mostly still keep up the recommendation originally copied from English works to “take out the wood” from the bud,—but no American operator does it.

Many persons use the Manetti stock to bud Roses on,—and it is recommended to “bud them as low” as possible. It is better to bud them a few inches above the ground,—for the Manetti will throw up suckers which, if left, will kill the Rose, and they are better detached when we can see a little stem.

When people will have new Roses at the lowest price,—or where much wood is desired for propagating purposes, or where extra fine flowers of weak growing kinds are desired, budding on the Manetti is all very well,—but it is all very bad to use the Manetti for the general public. Practically the bed of choice grafted Roses, become all stocks in a few years.

Scarce kinds of Roses may be propagated this month, by eyes of the unripened wood taken off just after flowering, and set in sandy soil in a shady

place. Cuttings from shoots grown in partial shade root better than those matured in the full light.

The Gladiolus has become one of our most popular Summer flowers. Those who have collections of them arrange the varieties very tastefully according to their colors. Take a list of colors as they 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.

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.

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 properly flower until the next year.

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.

The time is coming when transplanted trees of the past Fall and Spring will suffer more than du-

ring any other part of the season. If they show a vigorous growth of young wood, no danger need be apprehended, as it indicates that the roots are active, and can supply all the moisture the foliage calls for; but if no growth has been made, no roots have been formed, and the leaves are living for the most part on the sap in the wood and bark, and hot, drying weather will tell with injurious effect on such trees. This is generally first shown by the peeling off of the bark on the southwestern side of the tree,—the most drying aspect; and where such exhaustion appears probable, much relief may be afforded by cutting back some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in hay-bands, or shading the southwest with boughs or boards.

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 easier it dries; and the result is, the more water you give the more is wanted.

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.

In most kinds of soil the keeping the surface loose by hoeing and raking in dry weather, will be an excellent method of keeping the main body cool and moist,—admitting the air, which is a good non-conductor. In soils, however, which are deficient in loam, and in which sand prevails to a great extent, frequent stirrings have a drying tendency, and a mulching of short grass, or decaying vegetable matter of any kind will be found very useful around transplanted trees, shrubs and other things.

VEGETABLE GARDEN.

The great interest in Potatoes, caused by the experiments detailed in our columns last year, has caused as much interest to be taken in the new varieties of Potatoes as is taken in new Strawberries. So far as we have seen, the Early Goodrich promises to take the lead among the newer ones. We hope our readers will take notes and report the best to us.

Beans and Peas may still be sown, if done at once, with a fair chance for a late crop. The earliest kind of Corn may also be sown with a chance of its coming into use, if it escapes the grub. Drumhead Cabbage and Savoy may also be set out still in good, rich soil, where they will yet have time to head before frost in the Middle States.

The main crops requiring attention now will be Celery, Endive for salad, and Turnips. The latter merely to have a few early. August being the season for the chief or staple crop.

Beets may still be sown for Winter use, if the crops sown last month are likely to be deficient.

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 its made. The water adhering to the roots then gives to the set out plants the advantages of puddling.

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.

FRUIT GARDEN.

Look after insects. Caterpillars of all kinds are best kept down by hand picking.

Some people say positively that sulphur sprinkled in water, and this syringed over the Plum tree is a sure preventive of curculio,—the fumes under a hot sun being too strong for the insect,—but not too bad for the plant. No injury would result from a trial.

Keep pinching out all shoots from all fruit trees that are likely to grow stronger than the rest, or where they are not wanted.

Strawberries should be assisted to make strong-rooted runners,—good and loose soil placed near where the runners are, and if these are slightly covered all the better.

Raspberries and Blackberries should have their suckers thinned out, as weeds, as they grow, permitting only those to remain that will be wanted next year.

GREENHOUSES.

Vines planted permanently in conservatories or

planthouses are very liable to attacks of red spider, mealy bug, thrip and other pests. Frequent syringing with sulphur-water is the best remedy.

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 or any desired shape, pinch it back; and any climbing vines should receive due regulation as they grow over the trellis, or they will speedily become naked below. A good, stiff trellis is a desideratum hard to be obtained by the uninitiated.

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.

Communications.

FOLIAGE PLANTS FOR DECORATIVE PLANTING.

BY EDWARD S. RAND, JR., BOSTON, MASS.

Read before the Pa. Hort. Society, May 1st, 1866.

The great difficulties which meet every writer upon horticultural subjects are the wide field for experiments which is ever open, and the vast range of thought which must be embraced before the author can lay any claim to a fair and full presentation of the subject. Nor can any writer of his own experience originate or perfect any branch of science; the most that can be done is to graft into the stock planted in by-gone ages a few choice scions, in the humble hope that the fruit may

cheer, refresh and strengthen our fellow laborers; and in time the branch be strong enough to receive the grafts of better fruits, which may originate in years to come. This general truth is most forcibly impressed upon the botanist and upon his co-worker, the horticulturist; and in no country is it more felt than in our own. Embracing a range of climate from the Florida Keys, where the Orange ripens in the open air, to the hills of Northern New York or the mountains of Maine, where the Peach and most Pears are killed to the ground each Winter, we can have no universal horticultural literature,—certainly not cultural works of general adaptation. Thus it may seem presumptuous for a floriculturist, of New England, to write an essay for the edification of a Society in the Middle States, where the climate is so much milder that they may almost claim to possess a different, and in truth, a far more extensive hardy flora.

It must, therefore, be borne in mind that the experience here narrated is that of New England; and while whatever may be considered hardy in Massachusetts is certainly hardy in Pennsylvania, the converse is by no means true.

The subject chosen for illustration this evening, is one which, a few years since, would have had little significance. Horticulture, like all sciences, has its seasons of eccentricities so to speak; yet if in all, the study shows a steady progress we may not complain if perchance at times in some fanciful extreme the true ends of the science are momentarily lost sight of.

The "rage" for foliage plants, that is plants whose chief recommendation lies in the ornamental foliage, is of recent birth, but is wide spread and has certainly proved beneficial to floriculture.

Foliage plants are divided into two classes; those which by dark colored or variegated foliage produce striking contrasts, and those which by grandeur and abundance of stateliness of foliage produce marked effect on the lawn or in the garden. We can all call to mind plants which seem to be the connecting link between these classes, and which are showy both from contrast of color and effective foliage.

We have said the "rage" for those plants is of recent birth; but it by no means follows that the plants themselves are new discoveries,—true we owe many fine plants to the zeal of the botanist; and the skill of the hybridist,—stimulated by the demand created for the gratification of this passion; but the greater part of the stately foliaged plants have been known to botanists for years, while most of those affording effective contrasts are only varie-

gated varieties of well known inhabitants of the garden.

To discuss the causes which lead to these fanciful sports,—these seemingly accidental variegations would too greatly extend the limits of this article, suffice it to say that these variegations are generally first found in seedlings, are propagated by grafting, budding or cuttings, and are seldom exactly reproduced by seed. To this rule, however, there are marked exceptions, and it may be stated in general terms that seedlings from a variegated plant, other things being equal, are much more likely to produce variegated plants; but singular cases of disappointment in our own experience have caused us to know that this is by no means to be considered certain. Again, most of the cases where a variegated parent produces variegated offspring occur among annuals, and the higher we advance in the horticultural scale the fewer are the exceptions to the rule, or in other words the greater the tendency to revert to the primitive type.

Probably none will deny the statement that we are, in this country, making steady and even rapid progress in decorative planting; and it is also true that the introduction of foliage trees and plants has done much to develop the taste for landscape gardening as a fine art, if we may speak thus boldly. Much has been accomplished in the education of the eye of the masses by presenting marked effects or striking contrasts; the eye which would fail to ken the beauty of a noble tree, which cannot appreciate the delicate tracery of branches, or the elegant patterns of the foliage, is at once wakened to admiration by a contrast of a purple Beech and silver Poplar or the stately growth of the Canna and Ricinus.

And so far so good, for a mind of any appreciative power once interested in horticulture will not lose or even stand still,—the interest will increase and there will be progress; the progress of each one tells upon the mass, and thus tends to the great end, the general horticultural education of the people.

Practically considered, the foliage plants used for decorative planting divide themselves into two great classes,—hardy and tender. Of this latter class we do not propose to treat, except so far as such plants are useful for the Summer decoration of the flower-garden, and we must reluctantly dismiss with a mere mention the magnificent *Dracæna*, *Aloecasia*, *Caladia*, *Croton*, *Cyanophyllum*, *Rhopala*, *Pavetta*, *Marantas* and *Pandanus* of our stoves, as well as the elegant *Anæctochilus* and *Sonerilla* and hundreds of others.

The hardy and "bedding class," so to speak, is divided into trees, shrubs, climbers, perennials and annuals,—of bulbs there are a few of noticeable and marked variegation, but they are only available in early Spring. These we propose to take up in order, but first a few remarks may be allowed upon planting in general. Decorative planting may be either in the landscape or the garden,—it may be on a large or small scale. Of the former the greatest care must be used. As trees are usually employed, the full effect is for the future not for the present, and the great mistake is in too close planting, so that each individual is ruined and the mass is not elegant. It is difficult to conceive that the little sapling will produce the mighty tree; but every one who plants trees should remember he does it for posterity. Not for a year or ten years, but for all time. Again, do nothing hastily! To no one pursuit is Poor Richard's maxim: "what is worth doing at all is worth doing well,"—so generally applicable as to horticulture,—one tree or plant well set out and properly cared for is worth hundreds poorly planted and neglected. Therefore, whether it be a tree we plant for a hundred years, or a group of *Ricinus* for a single Summer let the work be well done. The error of too close planting is not confined to trees,—groups of such plants as *Cannas*, *Calocasia* and *Ricinus* are generally crowded. The true plan is when planting in May to allow for the size of the plant in August.

Again, contrasts of color are often poorly managed. As a general rule the more striking the contrast the better. All should, however, be well proportioned and in keeping, for bizarre effects are only pleasing in certain landscapes.

And first let us consider what trees are adapted for decorative planting, only, however, with reference to our subject of dark or variegated foliage; as in every genus of tree we can find some which are conspicuous for graceful or effective habit.

Of variegated Conifers or Taxads we know of but one which can claim a distinguished rank, the Golden Yew (*Taxus elegantissima*), a tree which is always distinct and vivid—is perfectly hardy, and which no garden should be without. Next to this we would class the Golden Arborvitæ (*Thuja aurea*), but which is open to the objection which we have to all of the genus, it is at seasons a dull looking tree, and withal barely stands the Winter in New England. The following are sometimes pretty, but are not fine enough for general planting: *Abies excelsa variegata*, *Juniperus Sabina foliis variegatis*, *Juniperus Virginiana foliis aureis*, *Chamaecyparis sphæroides variegata*, *Pinus sylvestris*

argentea, *Picea amabilis*,—but some are not hardy, and the variegation is precarious.

The contrasts of foliage presented by our native Pines, Spruces, Firs and Cedars are capable of very effective management.

Of deciduous trees the most distinct is *Acer negundo foliis variegata*, but it requires a shady place, or the colors run sadly, and large specimens are rarely seen. The finest for general effect is the purple Beech (*Fagus cuprea et purpurea*), which is now so common as to be obtainable by all, and which when large is a magnificent tree—it is of rapid growth when once established, and is a very clean tree.

The variegated Maples are varieties of the Sycamore Maple (*Acer pseudo platanus*) and are of two kinds, *Albo variegatum* and *purpurium*, both are desirable in a collection, but both lose their beauty after mid-summer.

Of the Ash we have many forms,—some remarkable for dull or peculiar foliage, but with the exception of the Weeping Ash (*Fraxinus excelsior pendula*), though very interesting, not very desirable.

The variegated and purple Elms (*Ulmus campestris montana* and *tuberosa*, &c.), are open to the same remarks, though the latter from its stately growth is often very effective. *Aesculus hippocastaneum foliis aureis* is very showy, as also the silver variety, but not very common. Some of the Alders (*Alnus*), Willows (*Salix*), and Lindens (*Tilia*) are worthy of a place in a large collection, but seldom maintain the variegation in good condition under our Summer's sun.

Of shrubs and small trees one of the best is the Indian Currant (*Symphoricarpus vulgaris foliis variegatis*), which is fine-leaved, well marked with white and very constant. The variegated *Acuba japonica* is very pretty, effective and handsome, but is tender in New England. The same may be said of *Euonymus japonica*. Tree box in its varieties, some of which are beautifully marked, is very ornamental and hardy.

Daphne eneorum variegatum is common and pretty. The purple Barberry is very ornamental, and the variegated *Daphne Mezereon* though rare is very desirable.

The many variegated Hollies are generally tender, but where they will survive there can be nothing finer; they are generally the English species, we do not know of a variegated variety of *Ilex opaca*.

An excellent way to grow these half hardy Shrubs is to keep them in large tubs, which in Summer

may be dispersed through the grounds, and Wintered in the cellar, where, if it is not too warm, and they have only enough water to keep them from drying up, they will maintain a state of rest and come out in fine order in the Spring.

Many greenhouse plants and succulents, such as the numerous tender Yuccas and the Century plants (*Agave*) and Aloes also do well under this treatment and add much to the Summer decoration of the garden and shrubbery.

Of Bedding plants the variety is almost infinite, indeed there are no greenhouse and comparatively few stove plants which do not do well in some localities if planted in warm sheltered places during the summer. We can mention but a few among which the whole family of Cannas and *Ricinus* are pre-eminent. These are raised from seed or with the former, also from old roots, and once established in good soil need no further care,—of their effect when judiciously interspersed I need not speak. *Calocasia esculenta* is very effective from its large foliage. It needs a deep, rich, rather moist loam.

The many species of *Erythrina*, though chiefly planted for their spikes of rich flower, are not ornamental in foliage.

Wigandia Caracasana is rather coarse but is effective. *Gynerium argenteum* (Pampas Grass) is very ornamental and blooms well in a hot place, if not allowed to become too dry. *Agapanthus umbellatus variegatus* planted in a tub and Wintered in the cellar is very ornamental in foliage and flower.

Of variegated climbers we have but few, the golden and silver Ivies are scarcely hardy. *Lonicera (Caprifolium) aureo reticulata* is very fine and maintains its variegation.

Calystegia sepium foliis variegatis when once introduced becomes as much a weed as the green-leaved species; *Cobaea scandens foliis variegatis* is as rampant a grower as the species, and requires the same treatment.

The variegated variety of the Hop (*Humulus lupulus*) is pretty but not constant. A very pretty little plant with fine cut grape-like foliage was sent me a few years ago under the name of *Cissus (Vitis) Sieboldii*, the contrast between the white and green leaves and the pink stalks is very marked, and the plant is a rampant grower.

Of hardy Herbaceous plants the name is legion,—indeed there is scarce a genus that has not its representative among foliaged plants. Annuals are not so well represented, but some of the sports are interesting. As a general rule the variegation of Perennials is best in early Spring. As the plant

sends up the flower stalk it fades, and towards July grows very faint or is lost altogether. It may be, in a measure, preserved by picking off the flower buds.

Funkia Sieboldii variegata is a splendid plant during the early Summer months.

Yucca filamentosa variegata is very fine, keeps the colors well, but is more tender than the species. *Convallaria majalis variegata* is very strikingly marked, but not very constant.

Farfugium grande is hardy if given a slight Winter protection of leaves, and is very beautiful.

The variegated varieties of the following are very desirable:—

<i>Aconitum napellus</i>	<i>Lamium</i> , in species,
<i>Arabis</i> , in species,	<i>Polemonium cœruleum</i> ,
<i>Achillea</i> ,	<i>Saxifraga sarmentosa</i> ,
<i>Convallaria polygonatum</i> ,	<i>Spiræa ulmaria</i> ,
<i>Funkias</i> , in species,	<i>Sedum acre</i> ,
<i>Glechoma</i> , in species,	<i>Trillium sessile</i> ,
<i>Heimerocallis flava</i> ,	<i>Vinca</i> , in species,
<i>Iris Germanica</i> ,	<i>Veronica</i> , in species.

Of Annuals we find many in the *Amaranth* tribe with dark or particolored foliage of which the most distinct is the new *Iresine Herbstii*, or *Achyranthes Verschaffeltii* which has not yet been proved in this country.

Perilla nankinensis is showy but lacks lustre, and is coarse. *Ageratum coelestinum variegatum* is prettier in a pot than in a garden.

Coleus Verschaffeltii (more properly a stove plant) stands well and is probably the best dark foliage plant. The new Japanese Maize is a great acquisition; comes true from seed and should be generally planted.

Of Bulbs we can say little. The Dogtooth Violets (*Erythrinum*) and *Trillium sessile* though pretty in early Spring are past by the first of June. The variegated *Colehicium* and golden and silver Crown Imperial are radiant in April and early May but soon pass away, and the variegated white Lily only stays long enough to bloom.

Thus have we briefly reviewed the available foliage plants for decorative planting, the mode of grouping, and thus the effects produced each can adapt to his own taste; and we can only hail each new acquisition to our already almost countless store, while at the same time we lift our souls in gratitude to the "Father of all Good," who so lavishly ministers to the ennobling and refining influences which His goodness has implanted in the human soul.

MANAGING THE PELARGONIUM.

BY "FOX HUNTER."

The Pelargoniums you think so good in my house are not treated different to what most gardeners follow, but as you think it may be useful, I write it out briefly for you:—

In July, after the plants have done flowering, I set them in the open air in the sun for a few days, when they are cut down. I cut according to the appearance I wish the new plant to make. If it have already several arms, in goodly arrangement, I leave the stubs three or four inches long,—if not good shape I cut in closer so as to get a better foundation. The cuttings are saved of desired kinds for propagating young ones,—but I prefer the two year plants for making specimens. I leave the cut down plants for two weeks in their old six inch pots,—when they are shaken entirely out, old roots cut very much away, and potted again into 4 inch pots,—they stay out of doors, in ashes, in a partially shady, but light place till September, never letting them want water by any means; they are then turned out, the soil carefully loosened, and as much suffered to fall out as may, without much disturbing the roots,—they are set back again on the ashes till end of September, when they are put in a cool greenhouse safe from frost and *damp*, which is a great enemy to the Pelargonium, and frequently watered with liquid manure. In February or early in March they get another final shift into sixes.

As they grow the shoots are staked out if necessary to make a uniform plant,—and very strong ones are occasionally pinched back.

My plants are not monsters to be sure,—but as you admitted, for six inch pots as I am limited for room, they can't be beat.

My soil is about equal parts turfy loam one year rotted, coarse sand and one year old cow manure.

VINEYARDS.

BY GERALD HOWATT, YONKERS, N. Y.

Those intending to plant a vineyard should study well the adaptability of their land for the vine before planting. It is generally presumed that any soil will answer for that purpose. The vine will certainly grow in any soil, but then will it be remunerative? I say not; and a vine will require the same attention, whether it yields ten or twenty pounds to the plant, so that it should be our aim to supply it proper nourishment. The best aspect is south or southwest. The great desideratum in a Grape soil is to have it loose, a good sandy loam; if it be

not such, to grow them profitably it must be made such. Ground that bakes will not answer; if your ground is a strong adhesive loam you must cart on to it gravel to keep it open. I have used three hundred loads of gravel to the acre to get it sufficiently porous. A good many growers will find that their failure proceeds more from this cause than any other, their land being too stiff; they must bear in mind that if a house has not got a good foundation it cannot stand. If Grape-vines have not well prepared land they cannot succeed, and this is a principal one; no matter what manure you supply or what care that you give them, except you attend to this your labor is vain. Oyster and clam shells, when they can be obtained, are a good and better substitute than gravel. Supposing then that our ground is all right I then plow and subsoil, commencing lengthwise (in May) and then cross plow and subsoil. I then haul on my manure, and apply from one to two hundred loads per acre, spread it as the plow proceeds, having a man ahead of the plow to put the manure in the bottom of the furrows. This is my principal manuring, as after manuring cannot be judiciously applied without detriment to the vine roots, when this plowing is finished do not harrow it; let it stand in furrows. I throw my lands into twelve pans, I then sow on this about one bushel of buckwheat to the acre enough will grow to shade and keep the ground open without harrowing. Latter part of July I run the roller over it and plow in the buckwheat; let the plow run twelve to thirteen inches deep, let it again stand in furrows and lands until middle of August when you again plow, cross plow and harrow. By this you will avoid working or lumping your ground in wet weather, and get your land into the best possible state for Fall planting. This in fact is more my reason for adopting Fall to Spring planting. It will be seen that this course could not be pursued by adopting Spring planting: if the Spring is very favorable you may manage to bring in your plants by middle of May. In wet weather this packs your grounds tight, the consequence of which is it takes all Summer to get over it.

Your ground being now ready, you mark it out for posts: I put mine in six feet square between every tenth row, I leave them nine feet apart to admit a cart to go between the rows, to manure, water, &c. When laid out you run your plow lengthwise and crosswise as deep as you can, with a wide mould-board plough running twice in each furrow, to facilitate the digging. At each of those angles dig your holes two feet deep and sufficient in diameter to give them working room. Let your stakes be,

of Chestnut, eight feet six inches long and about two inches at the small end; I split mine and have them smoothed with a draw knife, if the stakes are an object, which they ought to be, have them charred, after sharpening thirty inches from the bottom, this preserves them; your hole being two feet deep, you will insert your stake six inches in the bottom. If your subsoil is stiff use a crow bar to put them in, this takes your stake six feet over ground, which I consider sufficient.

You are now ready for planting, which will be about the first of September; your plants being grown in pots arrive from the nursery in boxes without the pots but balls all whole, place your boxes along the rows, water them in the boxes, set two men to each row, one to hold the plant, the other to fill in; in filling in around your stake put in the surface soil, place your plant against the south side of your stake, fill up the earth to the lower eye of your plant. In planting use two quarts of course bone dust to each plant; let a man go along and leave it at each stake, and the man in filling around the plant, let him mix it with surface soil, and when your ball is about half covered let him shake all around the bone-dust, fill in to about half an inch or the surface; have your water cart along, and give each plant one good watering, and your plants will receive no more of a check than if they were removed from one pot to another. By adopting this plan, I am confident that I save one year's growth; my ground is in good condition, plants are already to start when spring opens, and no drawbacks on account of weather; and, doing things as they ought to be done, when planted, let them be tied to the stakes, and the subsoil earth from the holes scattered over the surface, and let them remain until the middle of November, when I cut them down to within three eyes or buds from the bottom, or more plainly leave three eyes from the ball, then cover those over with earth in shape of a sugar loaf, at least, raise it about ten inches high, bringing it to a point at top; when all is finished, run a one-horse plough along each row, throwing the furrows from the plant,—this is to carry off all surface water. My object in leaving three eyes is, that I can select the strongest when they break and remove the other two; generally the upper one is the strongest. Observe not to do this until the buds are developed; in case of bleeding, after they are in leaf, you can cut all you like with impunity. Some may say this is an expensive mode of growing, but I assure them one acre thus treated is worth five in the ordinary way of growing, and will pay much better. In the first

place, it is much cheaper to go over one acre than five; secondly, you have better fruit, and can command a better price; thirdly, you have your four acres, which you can devote to other crops. First Spring, when the ground is dug, take the earth off your plants, leave your three eyes, set your plough in, give it a good ploughing both ways, and deep, (as this is your last ploughing for the season,) let your ground remain in furrows; when weeds show themselves, run the cultivator through them, all the weeds it does not take out around the plant, hoe them out, train your single stem up to the top of your stake; do not stop your plant until it reaches the top; this is to encourage the expansion of the roots,—remove all tendrils,—stop your side shoots at the third eye or bud; it will again break,—again stop at the first eye, and so on, all through the season.

In November cut down to six eyes, lay them horizontally, and cover with earth five or six inches, and cover with earth, (roof-shape.) The second season, in April, uncover your vines, train and stop as last season, leave your side shoots about five inches long; keep the weeds down all summer, and keep tied. In November plough three furrows in the centre of your rows; prune in December, leaving the full length of your cane, (six feet); cut your spurs to the second eye from the main stem, lay down and cover with earth; early the following spring tie up your plants. On the breaking of your eyes remove the poorest one; from the other your fruit stems will appear, probably two or three bunches will show, remove all but one, leaving the largest bunch, and only allow every alternate spur to bear one bunch each. Do not be too avaricious this season; if you take more you will materially injure your vines, (saving at the tap and wasting at the bung, is poor policy.) After your fruit is set, stop at two eyes beyond your fruit, let one of those eyes grow, stopping it again; at all times keep a growth ahead of your fruit, until they commence to color, when you can remove all. Be careful from the setting of your bunch, until you cut it to remove all growth and tendrils between your bunch and main stem, for if those are left it will take all the sap from your fruit. This November give your vineyard a top dressing of manure, according to the strength of your vines. As you are now ready for a full crop the following season, open around your vine three feet in diameter, with a digging-fork, two inches deep, and apply two quarts of coarse bone-dust to each plant, and you are again finished manuring for three years. The following year allow each spur to bear one or two bunches;

prune and lay down, as before mentioned. Next season, if your object is quantity, instead of quality, you may allow two and three bunches to each spur; if you intend your Grapes for wine, you can allow three bunches to each spur; if for market only two, and in some instances but one, always bearing in mind that a well-grown fruit will command double the price that an inferior one will of the same variety. The covering of the vine I consider quite essential in all stages, as it saves the eyes from being frozen,—at least, the idea proper, is to save them from the sun, as when the eyes are frozen the sun kills them, and by growing on single stems and to single stakes, this is much more easily accomplished. People need not be afraid to plant vines, as our export trade in Grapes is heavier than our home consumption. For wine-making, I prefer the amber Grapes; the Delaware in our climate, and the Catawba in the south. The Catawba, where it can be grown, is decidedly the best wine Grape, both in quantity and quality. For market none sell so well as a black Grape. My planting the past season has been principally confined to Adirondac and Concord for black, Delaware for ambers. Our white Grapes, at present, have not come to the standard to be depended on, although I would advise to buy some of them, but keep them from your vineyard, as they are all, more or less, subject to mildew, which, being our great enemy, be careful not to encourage it. I should have said, in planting your vineyard, select the best and richest part of your ground for the Delaware, it being a weak grower, your poorest ground for Adirondac, Concord, or any other rapid grower.

NOTES FROM WISCONSIN.

BY JOHN TOWNLEY, MOUNDVILLE, WIS.

DROSER A ROTUNDIFOLIA.

Among the plants recommended to be grown under glass shades or in Wardian cases, I never see the sundews mentioned. When doomed to live two or three years in the midst of London, one of my window pets consisted of a plant of the airy and elegant, maiden hair fern. On the surface, covering the soil, was a mass of that interesting moss-like fern, *Hymenophyllum Tunbridgense*, gathered from the curious, dripping rocks in the neighborhood of Tunbridge wells; whilst here and there, nestling amongst the latter, was a plant of the round-leaved Sundew,—all, of course, covered with a glass shade. As the Sundews grow mostly in wet, spongy bogs, they are seldom or

never seen by ladies whom, I presume, take most interest in this sort of parlor or window gardening but I have always found them objects of great interest and curiosity to those not previously acquainted with them. The glandular hairs of the crimson-tinted leaves, which cause the plant to appear as if sparkling with dew when the sun shines upon it, though not so sensitive, or so quickly irritable as those on the leaves of its family connection, the Venus Fly-trap, will gradually bend over and enclose a dead fly if placed upon a leaf, as I have time and again proved.

FAST HOLLYHOCKS.

It was stated in the *Monthly* that an English gardener had found that if Hollyhock seed was sown under glass in February, and the young plants were planted in the open ground in April, they would flower in September of the same year. On the 8th of June last, I sowed under glass, on a spent hotbed, a few Hollyhock seeds, which had been sent to me by a sister from England. On July 21st the produce was transplanted, and two out of the nine plants raised threw up flower stems; one produced several perfect flowers, and the other had two or three buds so far developed as to show the color of the flowers when their precocious efforts were rendered abortive by frost. I am puzzled to understand why these plants flowered, though raised so very late in the season, when self-sown plants, and plants raised from seed sown in the open ground, very early in spring, never attempt to flower until the second year. It could hardly be that they were starved into premature bloom, for the ground into which they were planted was well prepared; more than the usual amount of rain fell during the latter part of summer, and the plants grew with great luxuriance.

PROLIFEROUS TIMOTHY.

Last spring I plowed under clover in which some Timothy was growing. The land was planted with corn, which was cultivated twice, well hoed, then twice plowed; in hoeing, Timothy plants which had not been plowed under, had the earth shaken from their roots, and were then thrown upon the ground to wither; a plant here and there survived this rough treatment, and, plant-like, did their best under the circumstances to perpetuate the species by producing one or two flowering stamens each. These were necessarily formed much later in the season than it is natural for the plant to flower; and I noticed when cutting up the corn that several plants had formed proliferous heads, as *Poa alpina*, and some other grasses do

when growing near the summits of high mountains. I have grown several acres of Timothy during the last eight or ten years, but never before found a spike bristling over with young plants, instead of bearing seeds.

PARSNIPS APT TO BE POISONOUS WHEN ABOUT TO FLOWER.

If it is not generally known that there is danger in the root of the Parsnip on the approach of the flowering season, some pain and anxiety may possibly be prevented by giving the needed warning. A boy, three years old, the son of a near neighbor, was left by his mother to play with a younger sister, while she busied herself with weeding her garden. A quantity of Parsnips were growing around,—they had sprung up in fence corners,—among loose stones, &c. The boy, unperceived by his mother, managed to pull up a root, and as he had been given a piece of raw turnip to eat sometime previous, he thought this was turnip also, and was thus led to eat a quantity of the root; he soon became sick, and went to his mother, who, seeing her boy deadly pale, hurried with him to the house, when he was soon seized with convulsions; salt dissolved in warm water was given to him, which had the desired effect, causing him to vomit as much of the root as I could have held in my hand. As he now seemed easy, and thinking all danger was over, I left to return home, but was speedily called back, when I found the boy again convulsed; the nearest doctor (who had been sent for) being six or seven miles away, and remembering having read that the active poisonous principle of the nearly allied plant, hemlock, was an alkaloid, I caused castor oil to be given to him, in the hope that it might somehow neutralize the poison, or prove otherwise beneficial; be that as it may, the child had no fit after and recovered.

It may be well to add that the Parsnips were growing on the north side of a ridge, where a log house had formerly stood, and where a cattle-yard had been; and that the plant had run wild, having been allowed to grow from self-sown seed, year after year, during ten years at least.

INJURIOUS EFFECT OF GAS-TAR ON VEGETATION.

BY MR. JAMES CHARLTON, ROCHESTER, N. Y.

Last fall, commencing business in a modest way, I built a lean-to propagating house, against my dwelling house, with a walk through the centre, and a tank on each side, the length of same being 28 feet, and 9 feet in width. After making my

tanks, using 1½ inch lumber, costing \$45 per M., I determined to give them both inside and out, a coating of boiling tar, having, like several other parties, a faint idea that "Gas-tar" was the best preservative of wood in existence. The said house was built the last of September and beginning of October, and both the tanks, as well as the ends and front of the house, was thoroughly painted with the tar, boiling hot. The house was finished, but the "boiler," being forthcoming, (the boiler I am using being of a new pattern, was being cast for here in Rochester, and they being very unfortunate in the casting of same, I was necessarily delayed longer than I wished to be.) I did not have a chance of starting the same until the middle of January.

In the meantime, I had built another small, span-roofed house, for a succession house, 40 feet long and 10 feet wide, with walk through the center, and tank on each side, using on the outside of the tanks and on the sides of the house another coating of the inevitable "Gas-tar."

By this time the boiler for No. 1 was ready, set up, and the tanks connected with same, the fire built, and everything seemed to work to a charm.

After testing the boiler for about 24 hours, I commenced to fill the house with stuff,—Roses, Spireas, Grape-vines, &c.—plants to get stock from. The plants being dormant, of course I could not see at first if the gas was hurting them or not, for as soon as the heat began to rise, the gas began to make its appearance very plainly. On the plants commencing to grow, it killed the young shoots as fast as they grew, and in fact, killed a great many large plants, both root and branch. The Rose and Grape-vine leaves would turn black, become contracted, and then fall off.

It being apparent that I must either shut up the house or control the gas, I went to work and boarded up the tanks, at the same time washing the ends of the house with thick water-lime, and I have at last, after a great deal of trouble and anxiety, succeeded in being able to grow stuff tolerably well. This was in my first house only; in my second I burnt over my tanks with shavings, and gave the sides, as well as the tanks, three separate coats of good, thick, hot lime, as a whitewash, and keeping a heat up in the tanks for about two months, I have at last succeeded in pretty well subduing it so far, that I have filled it up with young Grape-vines, with a fair promise of their doing well.

Such, Mr. Editor, is the effects of Gas-tar with me, and, as "misery likes company," I would like to hear what Ellwanger & Barry, Mr. James Vick,

and Mr. Peter Henderson, have to say on the subject of Gas-tar, and its consequences, as a warning to others.

Some few years since, the President of the Rochester Gas Company being informed by a friend that Gas-tar was a good thing to keep off the bugs from the Squash and Cucumber plants, concluded to try some. A few days afterwards, on being questioned as to the result, said that it was the best thing that he had ever seen, for it had killed *the bugs*, but at the same time it had killed the plants likewise.

[We once saw a set of newly-made hothead frames gas-tarred to preserve the wood. They were used in spring for early vegetable plants. All around the sides for a foot or more from the boards the plants were small,—not half the size of those further away.

There is no doubt the odor of gas-tar is very obnoxious to insects, and many may be driven away by its use,—but it requires caution, as Mr. C. well shows.—ED.]

FORMATION OF DEW, IN ANSWER TO MR. YARDLEY TAYLOR'S OBJECTIONS.

BY A. FENDLER.

Having in two former numbers of this journal given the general outlines of the doctrine of the formation of dew, as adopted for the last forty years in schools and by scientific men generally, I thought my task ended, and if more complete information was desired, the reader could have his wants easily supplied by referring to any modern work, treating more particularly on this subject. But the criticisms by Mr. Yardley Taylor in the April number of the *Monthly* show, that a little more discussion is needed. And, as he says, his object is nothing else but to arrive at truth, I shall be obliged to make a few more remarks.

His first sentence, namely the heading of his article is erroneous. For I never supposed, indicated, nor pretended to have a theory of *my own* on the formation of dew; and, in justice to other men, as well as to myself, I desire such an impression to be removed. The theory, if it belongs to any one in particular, belongs certainly to Dr. W. C. Wells, of London, a native of South Carolina. The only particulars added to it, in order to make it quite complete, are those of Melloni, who repeated the experiments of Wells, and established, beyond a doubt, the correctness of his conclusions, which were the result of indefatigable and comprehensive scientific investigations, through a number

of ingenious and accurate experiments, furnishing to scientific minds the most satisfactory explanation of all the phenomena pertaining to the formation of dew.

My endeavor in the matter was merely to give an exposition of this theory, of the correctness of which I have been convinced by numerous observations in different countries and climates. To be able to thus recommend it to the general reader, is all the claim I have in connection with it.

Mr. Taylor, in considering heat as something ponderable and having body, yet doubting its emanation from the sun, says: "To suppose such an amount given off without diminishing the sun's body, is taxing philosophy rather heavily, as there is no evidence of diminution." Further on he says: "Light, we know, does emanate from the sun;" and suppose it to produce heat by friction in moving rapidly through our atmosphere, quoting aerolites as a parallel.

Here, then, it is evident he considers light to be likewise of a ponderable or material nature. Hence, we are justified to retort with his own objections, and ask: Can this emanation of luminous matter from the sun go on continually, in all directions of space, without diminishing the sun's body? And would such a supposition not be taxing philosophy as heavily in this case as in the case of heat, which he rejected for the very same reason, that there is no evidence of diminution in the sun's body? And if his views about the materiality of light are correct, why not, as he does in regard to heat, accuse nature of extravagance in casting so much light off into space, in order to illuminate only the earth, moon and planets, mere specks in the universe?

According to Mr Taylor's view, as we understand it, heat ascends with the heated air until the latter be obstructed, and then it can rise but slowly. The rays of light, emanating from the sun, carry the ascended heat back again to the earth. In this way there would be no loss of heat upon earth. Further on he supposes the light of the sun, coming in contact with our atmosphere, to produce heat by friction? In another place he says: "But may not heat belong to this earth, and have had its origin in its creation." Thus, while he allows no consumption or loss of the heat created with the earth, he supposes at the same time a steady daily production of new heat to take place. We may well ask: what becomes of all the accumulating heat produced day after day, and year after year, by friction? The amount of heat so produced, moreover, would be greatest in the morning, soon after sunrise; and late in the evening, immediately before

sunset; because when the sun is near the horizon, the rays of light have to pass through denser layers and a far greater number of particles of the atmosphere, than at noon.

The remarks I made about the radiating heat of a glowing fire in the open air, my critic deems "not to be well taken." Standing out doors, thinly clad, in front of a blazing log-fire, with the thermometer say 10 degrees below zero, any one can soon find out which side of his body receives more heat, the side turned towards the fire, or that turned away from it. A thermometer, placed in front of the fire, will certainly be affected by the latter, and the mercury rise according to its distance from the fire, even in spite of a wind blowing from the direction of the thermometer *towards* the fire, thus precluding the possibility of the mercury being raised by heated air proceeding from the fire. If, moreover, a suitable screen be interposed between the fire and the thermometer, the mercury in the latter will again *fall* to its former low temperature, which could not possibly take place, if the whole mass of air around the thermometer had the high temperature indicated by it while exposed to the radiation of the fire without a screen, thus proving that the propagation by contact (conducted heat) is not the only mode in which heat travels, but that it is also transmitted in straight lines as *radiating heat* through air, without heating the latter to any extent.

Place two spherical concave mirrors of polished metal at a distance of 10 or 12 feet, but so that the axes of both mirrors fall upon the same line; put a piece of dry tinder in the focus of one of the mirrors, and a burning coal in the opposite one, that is 10 or 12 feet from the coal; the tinder will soon ignite as if brought in contact with fire. It is evident that the tinder in this case has not been ignited by the intervening layers of air; for even if it were possible that these layers of air had actually been heated to such a high degree by contact with the burning coal, they could have *ascended vertically* long before they could *horizontally* reach the tinder.

Touching upon the principal conditions of energetic radiation I think we were justified by facts in saying, as we did, "a perfectly clear sky, which by its deep azure tint gives proof of a pure transparent atmosphere, not laden with any large quantities of moisture and vapor;" for in this instance it is not denied that the air, when transparent, may contain moisture. But the *deep azure* tint of the sky I still hold as indicative of its containing no *large* quantities of moisture. If clouds, or even rain,

should be formed in such a sky, as Mr. Taylor says, it does by no means follow, that a surplus of moisture was contained in it. It is more likely this moisture, having been conveyed there by warm upper currents of the atmosphere, coming from more southern latitudes,—for the air of the higher regions is never at rest, as I had ample opportunities to observe during a residence of four years in regions 6000 to 8000 feet above the level of the sea,—a strong breeze may swiftly carry the clouds onward, while at the same time a perfect calm may prevail below.

In Venezuela, South America, I found that nothing can equal the deep azure tint and transparency of the atmosphere during the dry season, from the middle of December to the end of March. As soon, however, as the rainy season approaches, the azure of the sky becomes less intense, and is changed for a more or less uniform grayish tint. In New Mexico, too, the absence of humidity gives to its sky its noted transparency, for there the atmosphere is extremely dry, dew being almost unknown, and crops cannot well be raised without irrigation. In our own latitudes we may witness the greater transparency and deeper azure of the sky immediately after a thunder shower.

On page 9, in the January number of the *Monthly*, the word "horizons" ought to read "haziness."

In my article on dew I never said any thing in relation to "thawing," as Mr. Taylor asserts I did, where, on page 105, he speaks about crystals of frost. I spoke about the rays of the sun dispelling fog and dew, and said: "This process (of cooling) continues until the rays of the sun strike the bottom of that basin." Of course, every one knows that if they strike the bottom, they have to strike at the same time the crystals of frost, as well as the grass covering that bottom.

It is also very plain that if air, cooled by radiation of the slopes, glides down to the lower grounds, it is bound to lift the warm air of the latter vertically up to the more elevated regions, where the warm air spreads, and affords protection to trees and plants. The remarkable phenomenon in the valleys near Alexandria, Va., cited by Mr. Taylor, is but another beautiful illustration of what I said on page 43, in relation to the accumulation of cold air in basin-shaped valleys. If in such situations a thermometer be placed on the elevation and another in the low part of the valley, it will be found that after 9, P. M., or sometimes sooner, the mercury in the valley begins to fall, while that on the hill keeps stationary, or may even rise, and we may in

some localities be able to feel a warm current of air coming from the valley, and in other places a cold current flowing down.

On page 105 he says, water will not mix with other fluids of different densities. But is not alcohol, for instance, of a different density from that of water, and yet, does it not freely mix with the latter fluid? The specific gravity of absolute alcohol is 0.791, that of water being 1000.

We live in an age of progress, and what use can there be in trying to disprove with a few contradictory conjectures, and with the old hypothesis, long since abandoned, of light being a ponderable, that which eminent men of genius, with indefatigable perseverance and patience, have proved by the most varied and ingenious experiments, to the satisfaction and approval of the rest of the scientific world.

WHEN DOES NEW BARK FORM, AND OTHER ITEMS.

BY JOHN M. IVES, SALEM, MASS.

An article with the above heading (in part) I saw in your last issue, which reminded me of an experiment which I made many years since upon an apple tree. The rough bark was scraped off in June very severely. I then covered the trunk with cloth to prevent the sun from striking upon the naked trunk; this was kept on for about six weeks, when a new and smooth bark succeeded. This can be done in June on all thrifty or healthy trees.

CUTTING THE NOTCH IN LAYERING.

You are right in layering, cutting the notch on the upper side.

CAUSE OF MILDEW.

Dry air, I am satisfied, is *often* the cause of mildew, particularly in the Gooseberry. I have never known Houghton's Seedling (which I first sent to the west) mildew, except in a hot or dry situation, as also the Scotch varieties.

TRANSPLANTING EVERGREENS.

Evergreens in our locality, we find, should not be transplanted early,—not until they begin to push, say June or last of May.

BLACK KNOT.

I observe an article from our city of Salem, relative to the Black Knot on the Plum. This fruit was a specialty with me twenty years since, having nearly fifty varieties in fruiting. The *little Turk* or *enreulio* was so troublesome that I had recourse to what was considered a strong dose, in placing around my trees, on an acre, six hogsheads of waste salt. This I put on in March; when the

frost was out, I then had it spaded in. The following summer I had the largest quantity of Plums in our county. A. J. Downing, who saw them, said in his *Horticulturist*, that for this locality, not famous for this fruit, it was a fine crop.

The Black Knot began to infest the trees to such an extent that I was induced to cut down tree after tree, until they were about all exterminated; for, with all my experiments and investigations, I was never able to divine the cause, and, like the potato disease, I still believe it a mystery. All that can be said of it is, as Governor Lincoln said of the potato disease, "It is death to the Plum."

The extravasation of the sap was my first theory. The insect theory was the next. The first I surmised from this extravasation on the Swamp Azalea, called here Swamp Apple. The insect theory was, in consequence of *never* finding any trace of a worm in these excrecences, when in a cheese-like state, until they become black.

[We should be pleased to hear from Mr. Ives again.—ED.]

MORE ABOUT THE "BLACK KNOT."

BY MR. J. STAUFFER, LANCASTER, PA.

The article by "A Reader," in the June number, leads me to throw out a few thoughts on that subject, which can do no harm, if they fail to be satisfactory.

My observations on the "Black Knot" incline me to the opinion that it is caused from prematurely mild weather in early Spring, starting the sap, and then again checked by subsequent cold and frosty winds.

The flow of sap thus arrested, becomes partially absorbed, or its more aqueous portions evaporated, leaving it to clog the delicate tissue, so that when the sap is again started, it meets with obstructions, a swelling and small fissure of the solid bark will be the result, encouraging the extravasation of the juices to this point, inducing a swelling and mortification, otherwise the "Black Knot."

Sometimes the fissure is known to be produced by frost, forming what is called a double alburnum; that is, first a layer that has been injured by the frost, and then a layer that passes into wood. Or a sudden thaw may produce a partial disease on the south side of the trunk,—this, followed by a sudden frost, would but increase the evil.

The expansive force of the freezing sap, however induced, is known to split the alburnum into clefts or chinks; such injuries degenerate into a chilblain, that discharges a blackish and acrid fluid,

which becomes putrid by exposure to the lodgment of snow or rain, and forms an excrescence or ulcer.

Ulcers of this kind will not heal of their own accord, and no better remedy is known than to shave them off neatly, and then to cover them with grafting wax. If mixed with iron-rust or filings, I believe it would be still better.

The galls formed by the puncture of insects, and which surround the eggs deposited by the parent, are quite different in their structure, and their juices are healthy and aid in hatching and feeding the larvæ to its maturity; indeed, some of their galls (usually made in some vigorous part of the plant) acquire a morbid degree of luxuriance, frequently swelling to an immoderate size, and assuming the most extraordinary shapes.

I agree with "A Reader" with the single exception, when he says: "We are inclined to think that some ingredient in the soil is the cause of the mischief." I know there are peculiar conditions of the soil when too wet or too rich, or lacking an element needed in the composition of a certain plant. Besides, there are peculiar vapors arising from certain electric conditions of the atmosphere. Nevertheless, the views above given have, in a measure, satisfied me on the cause of the "Black Knot."

[We noticed the "knots" forming this year on the 4th of May,—a month earlier than any date we have here before recorded.]

The only objection we see to our friend's theory is, that the causes he points out have been in existence, like the causes of ulcers and chilblains, for all time past,—whereas, the "Knots" are often unknown in localities, until once taking possession of the place, it seems impossible to eject them.

Having advocated the fungoid theory from the first, we throw out these suggestions for our friends' consideration.—ED.]

NATURE'S LAW OF COLORS—HUMBUGS, &c.

BY PETER HENDERSON.

I trust you will bear with me in again recurring to this subject, but this time, in part, I beg your indulgence to make a personal explanation.

When I replied to Mr. Ferrand, in the April number, it appears that I unconsciously wounded his feelings when in illustrating my argument, I stated that, about a dozen years ago, I had seen a "gentleman from France" attempt to sell some unusual colored Roses that he had for sale. When I penned that article I can assure Mr. F. that I did not know that he was a Frenchman,—did not know

that his father ever sold Roses, or that he had a father living at all, for that matter. And how he came to imagine that I intended anything personal in the matter, I am utterly at a loss to conceive.

If I was unfortunate enough to show up the rascally pranks of a man who happened to be his countryman, I disclaim all intention to hurt his feelings thereby.

Mr. Ferrand thinks that that manner of "illustrating" my argument was entirely out of place in discussing this subject of colors. I endeavored to show you, by picturing that case, that the diffusion of more scientific knowledge on this question would render null the evils arising from the operations of such impudent scoundrels, and think this illustration had a fair bearing on the case. And to show you, Mr. Editor, that my previous sketch of such swindlers was no fancy one, I enclose you the printed Catalogue of another operator who (you will see also) claims that his goods are "direct from France" (I hope that Mr Ferrand will not claim, nor disclaim kindred with this one) that were sold on the 9th and 10th of May, of this year, at No. 167 Broadway, New York, from which, permit me to make the following extracts,—understand that nearly all the lots were illustrated by colored plates, vividly representing the colors: "Lot No. 19 is Monthly Rose, Prince Napoleon, *white, red and yellow.*" "Lot No. 21, *Perpetual Moss Rose, golden yellow.*" "Lot No. 47 represents 3 varieties of the Trumpet of the last Judgment." "Lot No. 52 and 53 five varieties of the Hand of God." "Lot No. 66 *Yellow Pyrus* and a *Blue Azalea.*" "Lot No. 153 *Perpetual Moss Rose, golden yellow, striped violet.*" "Lot No. 237 three varieties of the Great Mogul (?)" "Lot No. 257 *Perpetual Rose, Great Turk, jet black.*" "Lot No. 329 is particularly interesting, embracing *Blue Pyrus Japonica, Blue Jessamine* and a *Yellow Deutzia.*" "Lot No. 344 is a regular mouth-waterer, 'African Cherry, 4 to the pound.'" "Lot No. 354 modestly represents *Perpetual Rose, General Scott, blue and white.*"

Now is it to be wondered at, that the simple Quakers of Pennsylvania, or the unsuspecting Dutch farmers of New Jersey are victimized by the wine plant peddlers, when the sharp business men of New York are seen eagerly paying enormous prices for such rubbish as this?

Had the gentlemen that formed that company in the auction room at No. 167 Broadway on the 9th of May, been readers of the *Gardener's Monthly* for the past year, they would, no doubt, have saved their money,—saved themselves from the ridicule

of their friends, and very possibly have handed that blaspheming scamp over to the police. If we wish to keep up our profession to the high standard to which it properly belongs, we should do all in our power to prevent it being disgraced by the successful operations of such swindlers.

[The Catalogue sent by Mr. Henderson is a very amusing one. We shall place it amongst our "Curiosities of Horticultural Literature." Sorry we cannot have some of the pictures also.—ED.]

TREATMENT OF RASPBERRIES.

BY CHARLES REESE, BALTIMORE, MD.

In reply to "J. H. F.," in May number, page 146, permit me to say, the remark, "*Do not permit any suckers to grow for a year or two,*" is intended to apply only to small, weak plants, such as are generally sent from the nurseries; and it is for the purpose of establishing them firmly in their new home, and strengthening the roots before they are allowed to bear fruit. "If any blossoms appear cut them off," for even a small amount of fruit the first year after transplanting exhausts a plant more than three times the quantity the second or third year, and "encourage the growth of the laterals," because on them will be the fruit buds for the next year's crop, and "cut them back to six inches," because that will leave quite as much fruit on them as they can ripen thoroughly.

THE FRUIT GARDEN OF ISAAC B. BAXTER, ESQ., PHILADELPHIA.

BY CHRONICLER.

Isaac B. Baxter, Esq., has been for twenty-five years one of the most skillful and successful amateur fruit-growers in Philadelphia; and the fact is certified by the numerous prizes awarded to him for best fruits annually by the Pennsylvania Horticultural Society. His garden, at the corner of Fifth Street and Washington Avenue, is a model orchard in its way, two hundred feet long and a hundred and fifty-six feet broad, including the dwelling house and a tool and fruit-house. It is stocked with fruit trees, grape-vines and small fruits. The trees are so close that nearly all their branches meet, but by a judicious annual pruning, each tree is kept within certain limits, and they are all remarkably fruitful. There are several Espaliers, as well as standard trees. Pears are most numerous, and next, Peaches, with several Plums and Cherries, and a few Apricots, Nectarines and Quinces. There are all the best varieties of native

Grapes and some foreign kinds, all loaded with fruit in the season when we saw them. There is also a glass vinery with foreign Grapes in full bearing. The garden is layed out into beds and walks, and a flower apartment in front of the house. The ground is annually dug, manured, and cropped with vegetables; but the shade of the trees is almost too much for them.

RECIPE FOR DESTROYING INSECTS.

BY "E. A.," BRUNSWICK, N. J.

I have to-day, received from a friend in England, a recipe for destroying insects that infest plants which is considered better than Gishurst compound.

It is, boil $\frac{1}{4}$ lb. Quassia chips in one gallon water 15 minutes, strain and add $\frac{1}{4}$ lb. soft soap. Apply with a brush.

WHENCE COMES FRAGRANCE IN THE BLOOMS AND LEAVES OF PLANTS.

BY WALTER ELDER, PHILADELPHIA.

We think it comes from the composition of the sap of plants, as it is present and absent in all colors, and its very opposite is in many colors. Of white blooms, those of *Magnolia glauca* and *venusta* are sweetly perfumed; those of *Magnolia conspicua* and double blooming Cherry are scentless; those of Privet and nearly all the species of *Philadelphus* are fragrant; while those of *Deutzia*, *Viburnum* and *Spiræa prunifolia*, and *Reevesii* are inodorous. Those of White Lily, White Narcissus and Sweet Alyssum are sweet scented; those of white Crocus, Snowdrop and white Candytuft are without smell; those of all the Gardenias are highly perfumed; those of white Camellias are scentless; those of white Horse Daisy have no smell; those of Wild Chamomile have a strong, detestable effluvia.

Of yellow blooms. Those of Barberry, Wallflower, Musk plants and yellow Nasturtium are fragrant; those of *Kerria* and *Forsythia* are inodorous; and those of African and French Marigolds have a heavy, offensive effluvia; those of Cowslip and Primrose in English pastures are sweetly perfumed; those of yellow *Ranunculus* and *St. Johnswort* in American pastures have loathsome effluvia; those of *Olea fragrans* and the night smelling *Jasmine* are of a greenish yellow and very sweet scented; those of the European Linden tree are a greenish yellow and sweetly perfumed; those of the *Ailanthus* are of the same color and their effluvia is disgusting.

The blossom of the English Hawthorn is very sweetly perfumed; that of the American Hawthorn

is scentless, both are white; *Mignonette* and *Grapevines* have green blooms very odoriferous; *Calycanthus* blooms are brown and fragrant, so are the leaves and stems; Sweet-brier with pink blooms is wholly sweet scented; the blue, sweet Violet is more fragrant than the white Violet; and the light colored blooms of *Heliotropium* are sweeter perfumed than the blues; *Epigæa repens* is sweet scented and the white *Anemone* growing beside it in the woods is inodorous; *Daphne odora* and Chinese Honeysuckle have purple and white blooms, and both are extremely odoriferous; the white *Jasmines* are the most fragrant of their genus, so is the *Clematis flammula*, also with white blooms. Rose blooms of all colors are fragrant, so are those of *Haycynth* and *Gillyflower*, and yet *Camellia*, *Chrysanthemum*, *Dahlia*, &c., have blooms of as many colors, and all are scentless; the purple blooms of *Lilac* are as fragrant as the white; *Wisteria sinensis* and *frutescens* are nearly alike in form and color, the former is sweet scented, the latter has no smell.

Of fragrant foliage the American *Arborvitæ* is the only species of its genus that has sweet scented leaves, so it is with the English Walnut tree; the leaves of *Artensia* (Southern Wood), *Aloysia citriodora* and *Cinnamomum verus* and *camphora* are very fragrant; and of *Geraniums*, the leaves of Apple and Rose scented, Nutmeg, Pennyroyal and Lemon scented are sweetly perfumed; *Monardia*, Balm, Mint and Thyme have all fragrant leaves; *Brugmansia*, *Clerodendron* and *Rue* have leaves of repulsive effluvia.

In planting a flower bed, or embellishing a pleasure ground, or stocking a greenhouse or hothouse, or making up a bouquet, care should be taken to mix fragrance along with beauty. In all ornamental garden work fragrance should accompany beauty every where, for then the beautiful looks more lovely, and is more enchanting where the surrounding atmosphere is richly perfumed with fragrance. Thus, fragrance like virtue imparts grace to beauty, and we love it more. The pleasant perfumes of *Carnation* and *Picotee Pinks* give greater luster to *Sweet William* and *Columbine*; the sweet odors of *genus Narcissus* make the fine markings of *Tulips* more fascinating. The fragrance of Orange and Lemon tree blooms add additional charms to those of *Calceolaria* and *Pelargonium*.

The Gardener's Monthly.

PHILADELPHIA, JULY, 1866.

✉ 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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PLAY GROUNDS FOR THE YOUNG.

Almost all who know any thing of London, know of a fashionable quarter of the city called *Pall Mall*. In the days of the "Merry Monarch" as Charles II. is called, this was the play ground of the members of the Court for a very popular game since known as "*Croquet*." When the modern name of Croquet was given to Pall Mall, or why it was called Croquet at all, has not been decided by those interested in the philology of sports,—but the game itself has become very popular in Europe, and is fast becoming an "institution" in this country, especially with the young.

"Especially with the young." We might all be much younger than we are if we would only think so. The fountain of perennial youth which Ponce de Leon left home, friends, ease and luxury to discover in the the new world,—and paid with his life the penalty of his dear attempt,—can be very nearly found within the reach of all of us, at no other expense than a little common sense.

Our great want is out-door occupations as a relief from business,—“out-door sports.” Our national fault in the education of our children, and in our career as men and women, is the making of business the chief end and object of all we teach and of all we do. Time spent in “meaningless” recreation is “time lost.” It is said “not to pay.”

We read of strong English men and rosy English girls. We are told the secret lies in “out-door exercise,”—and we turn to our pale women and dyspeptic men,—but they shake their heads and say what will become of the work? It must be done.” And so year after year of our lives roll on, whispering to us with each declining day “you are growing old,” and receiving in turn the responsive sigh “I wish I could be young again.”

There is nothing like horticulture to make one forget the march of time and keep one's affections green. It “does not pay” in money,—but it “pays” in happiness and health, and in affording

the divining rod which discovers the secret springs of the fountain of youth as nearly as it is likely to be found in this life.

In “out-door sports” horticulture sympathizes. She is a twin sister, and with whom she is proud to be seen hand in hand together. She is not jealous of the other's lover, but rather aids her to win him; though she may like to have a little “say” in the details of her choice.

And, coming back to Croquet, we may say that we regard the present prevalent rage for this little game amongst the young folks as a fair sign of the “good time coming” when Roses shall bloom on fair American cheeks as well as in fair gardens,—only, (and in the name of horticulture we must have our “say,”) it would be best, if possible, that the beauty of the lawn be not sacrificed for the croquet ground as we see it sometimes is. Nevertheless if “father” does not provide a proper place for these little recreations we would say to the young folks “play away” in the best place you can find.

We hope to see the time when a “play ground” will be considered as much essential to a perfect plan of a country place, as a stable or orchards.

In many places tracts large enough for cricket or base ball could not perhaps be afforded,—but there are few places which might not spare enough for Croquet. A level spot, 40 by 50 feet is quite large enough. If a little more it would be much better, as Weeping Ashes or small clumps of other suitable trees might be planted to form arbors, under the shade of which they might sit as spectators who will feel that for them all stories of perennial youth are but Indian tales. With a little art and skill these play grounds might be made as pretty and interesting as any part of the prettiest place.

MINERAL OILS FOR DESTROYING INSECTS.

When engaged in the pot culture of fruit trees many years ago, we employed coal tar smeared round the stems near the ground to keep away borers, mice, &c., from Peaches, Plums and the like,—always with success and never with injury.

We have since seen well authenticated cases where injury or even the death of the tree has resulted from its use, and have had several times to warn our readers against it. Whether there is a difference in the quality of the tar, or a difference in the capacity of the plants to resist any injurious matter in the tar more at one time than another, is more than we can say, but the injury is a fact.

We have had a similar experience recently in the

use of coal oil. A large and varied collection of greenhouse plants was about to be set out for the Summer; some had a few thrips, others red spider and others scale,—and it was decided to get a large tub of water and put in about a pint of coal oil, and dip each plant into the tub to clear it of any insect that might be on. Of hundreds that were dipped most of them are uninjured, and the insects destroyed,—but a few kinds have their leaves badly hurt. *Fabiana imbricata* a dozen plants have been nearly killed. *Ardisia crenulata*, dipped in at the same time, entirely uninjured, and the same curiously differing results more or less throughout.

The most curious instances are in the collection of Azaleas. Three-fourths of them are uninjured, most of the other fourth have the leaves spotted here and there with brown, and a few have their leaves entirely destroyed. So far as we can judge, the amount of injury to the leaves depends on the state of maturity,—but at any rate enough is shown by this extensive experiment to prove that as in the case of coal tar it is too dangerous an element to be used without more knowledge or caution than can always be given.

It is, therefore, proper that we should qualify our remarks of last month by this additional experience. Mineral oils had better not be used,—but vegetable or animal oils, so far as we have had experience, may be used in all cases with perfect security.

SPECIALTIES FOR SMALL GARDENS.— THE ROSE.

In our last we gave an excellent paper on standard Roses. This way of growing the Rose is nearly abandoned in this country. The action of the sun on the stem in Summer, and of frost on the head in Winter have been found in a series of years unsurmountable obstacles. We think it quite likely some way may be found by which these evils may be removed,—and Mr. Ferrand's paper will do much towards it.

It often seems to us, when we see every where around us magnificent attempts at large gardening on very small grounds, that much more satisfaction would result if the owners would make a specialty of some one plant, and endeavor to produce a great variety of results from it. For this species of gardening the Rose affords excellent materials.

The following cut from the *London Gardener's Weekly* gives a very good idea of a rose walk, one of the most beautiful things possible in a garden. As will be seen by the illustration, standard Roses would be essential to such an arrangement; but, taking for granted that we could not get satisfactory results from them, we could make very good substitutes by selecting very strong growing Hybrid Perpetuals, and train them up posts with a single or even more stems to the desired height, and then head them off, which would make quite as good



plants as the common budded standards. We have seen some excellent Baronne Prevosts this season trained in this way; and, to make a dozen complete we add the names of eleven others that may be grown on the same system:—

General Jacqueminot,	John Hopper,
Jules Margottin,	La Esmeralda,
Comtesse de Montvliet,	Md'lle. Bonnaire,
Imperatrice Eugenie,	Louis Bonaparte,
Beauty of Waltham,	Anna Alexieff.
Alexandrine Bachmeteff,	

There are many kinds of Hybrid Perpetual Roses which grow quite dwarf,—these would make good half standards for a Rose border; a dozen of these might be:—

Paxton,	Dr. Arnal,
Virginale,	Youland d'Arragon,
Adele Mauze,	Sydonie,
Coronet,	Ed. Desfosses,
Madame Boll,	Monsieur Robert,
Madame Rivers,	Caroline de Sansal.

For the front of this border any of the Bourbon or China Roses answer admirably.

For permanent belts or borders there is nothing like the hybrid perpetual class,—quite as hardy as the old June or Summer Roses, quite as beautiful, and with a little management, have the superior attractions of successions of bloom through the whole Summer and Autumn months.

It was fashionable once to deplore the fact that the beautiful hybrid China Rose was neglected for the modern Hybrid Perpetual, many of which, so it was argued, flowered no oftener than they,—and we are sorry to say no modern writer on the Rose has thought it worth while to examine the reasons for these regrets, but repeats them in regular routine. Supposing they do not flower quite as freely as we might like them to do through Summer and Fall, they are as good as any of the Hybrid Chinas, even viewing them entirely as Spring bloomers. John Hopper, Comtesse Cecile de Chabriliant, or even Baron Prevost, will certainly equal, at any time, Brennus, Blairii or Coup d'Hebe among the best of the Hybrid Chinas.

To have these H. P. Roses flower profusely in Fall it is best to cut off the flowers as fast as they fade, and to cut them several eyes down from the old bud. This forces out a new, young growth, which is to bear the later flowers. Where very fine flowers are desired in Fall, some of the young shoots may be shortened back before flowering, sacrificing, as we do with Raspberries, at times the whole fruit crop, for a later advantage. By a little

study a knowledge of this art of pruning may be attained, so that one may prune back just at the time to produce the flowers at any exact future time, when good blooms may be particularly desired.

Some Hybrid Perpetual Roses bloom naturally more freely in the Fall than others, and we have thought to name a dozen good ones of this class might not come amiss, they might be:—

Madame Vane,	Joseph Vernet,
“ Charles Wood,	Marquis d'Ailsa,
Dr. Arnal,	General Washington,
Souv. des Anges,	Geant des Batailles,
Prince Albert,	Madame Pigeron,
William Jesse,	Monte Christo.

In making collections of Roses for special purposes the Connoisseur will notice several sub-classes of Hybrid Perpetuals, with which, by arranging each, all by themselves, he may make some striking effects. There is a section which have large, broad petals like old fashioned Poppies, for a dozen of which we might name:—

General Jacqueminot,	Solfaterre H. P.,
Mons. Robert,	Comtesse de Montvliet,
Madame Boutin,	Christian Puttner,
Louis Bonaparte,	Hector Jaquin,
Charles Lefebvre,	Eugene Sue,
Jacques Lafitte,	Madame Emain.

Again, a beautiful section is the round, broad petaled, cupped and compact Roses, of which take for a dozen:—

Comtesse Cecile de Cha-	Mad. Campbell d'Islay,
brillant,	
Jules Margottin,	Madame Boll,
General Simpson,	Auguste Mie,
L'Enfant du Mont	Geant des Batailles,
Carmel,	
Madame Knorr,	Lord Raglan,
Society of Horticulture,	Eugene Appert.

Another very pretty section is that which has a few broad petals around the outside, and the inner part of the flower comprised of numerous small, irregular petals,—twisted about without order or method, and just the thing for those gentlemen whose taste leads them to regard the rugged ugliness of the branches of the Oak to be the greatest beauty of the tree,—or for those ladies who esteem a pretty bonnet in proportion as its floral dressings are arranged the most “lop sidedly.” To select a dozen of these, take

Crystal Palace,	Marquis d'Ailsa,
Pius IX,	Dr. Arnal,
Lilace,	Madame Damesne,

L'Enfant du Mont Carmel, Montaigne,
 Paxton, Duchess of Cleveland,
 Youland d'Arragon, Sydonie.

A most beautiful object on a small place is a bank of Roses, where there is a wall it may be arranged against that,—but the loveliest effect is produced by making it in the convex bend of a walk. The bank should be higher than the line of sight so that no one could see over it, and slope off not to steeply towards the walk. The concave side of the bank (its back) should be very thickly planted with beautiful flowering Shrubs, and the planting of the grounds be so arranged that an occasional glimpse of these Shrubs should be caught from some opposite part of the grounds. The idea that you are approaching merely a shrubbery, is agreeably changed for the Rose bed when the visitor comes to it,—and the Roses will seem absolutely more charming for the surprise.

In some parts of the grounds set beds of Roses may be adopted after some pretty designs, many of which suited to this purpose we have, from time to time, given in the *Gardener's Monthly*. Teas, Chinas and Bourbons are best for such beds. One kind selected for each bed, and neatly pegged down so that not any of the earth may be visible.

A dozen for this purpose might be:—

Agrippine,	Madame Bosanquet,
Cels,	Souv. de Malmaison,
Bougere,	Saffrano,
Madame Bravay,	Devonienis,
White Daily,	Pink Daily,
Hermosa,	Louis Philippe.

Though naturally tender, these Roses are easily protected when in beds. Dry leaves may be strewn in through the pegged down shoots, and just enough soil be sprinkled on to keep the leaves from being blown away,—or branches of evergreens may be used for spreading over, and a little soil thrown over them. The worst of all protecting material is straw or manure, which, decaying rapidly, communicates the same process to the Rose shoots, and is more destructive than a moderate frost would be.

Scrap and Queries.

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

☞ The Editor cannot answer letters for this department privately.

THE RED SPIDER REMEDY—“*Ignoramus*” writes:—“For red spider in greenhouses take a

tin vessel,—put in it 1 quart of lime and 2 handsful of sulphur, then fill it full of water and put the vessel on the flue near the fire (*not spread*), always keep it full of water, and from time to time add more sulphur.”

MUSCAT TROVERON GRAPE.—We have received from Mr. Brooks, gardener to J. D. Cameron, Esq., of Harrisburg, Pa., a few samples of Nectarines, to judge if the names be correct, which they all appear to be,—and we may take the opportunity to compliment the grower on the superiority of the productions. The Muscat Troveron Grape was a splendid bunch for a pot vine, weighing 1 lb. 4 ozs. The plant we are informed having 4 other similar bunches on it. The flavor is rather of the Frontignan than Muscat.

The range of houses at Mr. Cameron's were built entirely under the superintendence of Mr. Brooks, from plans furnished by a gentleman of Philadelphia,—and are probably the finest in the State. The success of the houses, and the crops growing in them do credit alike to the skill of the gardener, Mr. Brooks, and the liberality and taste of Mr. Cameron.

WINTER ON EVERGREENS IN ST. LOUIS—A Correspondent says:—“The past Winter was not as severely cold as at Philadelphia, but the frosty nights and scorching sun of March was sadly injurious.

Podocarpus and Torreya taxifolia, killed.

Cupressus Lawsoniana, Cryptomeria japonica, Thuya Lobbii, Taxus adpressus, slightly injured.

Juniperus Langoldii and other Junipers quite fresh and uninjured.

Have great trouble with the Oaks—some of the *Q. cerris* and *Q. macrocarpa* have died, but am persevering to have the *Quercetium* as complete as possible.”

CORRESPONDENCE ON PEARS—*J. S. J., Salem, Mass.*—“When your magazine was in quarto form, there was articles from some writer upon the Dwarf Pear culture which were the best I have ever seen. Why do we not hear more from him? I have not the numbers before me, I think his name began with B.”

[Bright was one of the most talented of our correspondents,—but he has dropped out of the horticultural constellation, and is now a wandering star, either amongst the Mormons or some other border Territory, we do not know exactly where.]

BEDDING THE GRAPE-VINE—*A Correspondent from Dundaff, Pa.*, asks:—"Can the new or cultivated varieties of the Grape be successfully budded on the native Grape-vines, as I have a quantity I wish to bud the coming season. At about what time is best to bud the vine."

[We have never known any one succeed in budding the Grape-vine. If any of our readers have we should be pleased with an account of the success.]

EXPRESS CHARGES.—As the season is commencing when our correspondents send us specimens of fruits for name, comparison or other purposes, and usually pre-pay the freight on them,—we may remind them that the surest way to save us from paying the freight over again, as we have often had to do, is to mark the box themselves "Paid through to Germantown."

HARDY RARE SHRUBS NEAR BOSTON—*Anxious Inquirer, New Haven, Conn.*, writes:—"Having lately added to my collection the following Shrubs, for the open ground, I should be much obliged if you can inform me whether they are *hardy* in this latitude, or what degree of protection any of them may require:

"*Golden and Silver Yews, *Berberis Bealii, *Berberis japonica, Berberis Darwinii, Ilex laurifolia, Ilex Scotica, *Ilex opaca, *Andromeda Catesbiana, *Andromeda floribunda, Cryptomeria japonica, *Cupressus Lawsonii, *Deciduous Cypress, Portugal Laurels, *Rose acacia, Euonymus gold and silver striped, *Jasminum nudiflorum, Jasminum involuta, Jasminum white, Jasminum Chrysanthemum; English hardy Heaths, vagans, vulgaris, ciniera.

"I have Sargent's edition of Downing, but it is not entirely satisfactory as to the above plants."

[Those we have marked * will prove hardy with you, the others not.]

A CORRESPONDENT from Wolcott, Wayne Co., N. Y., returned from the war with "Cavalry Sheridan," writes:—"I have delayed sending my subscription for a long time, not because I did not expect to send for the *Monthly*, but a small thing you can do one day as well as another often gets delayed, so in sending for the *Monthly*. I hope the *G. M.* will ever hold as prominent a place with the horticulturists as it has in the past.

"I have set a vineyard the past Spring of a few hundred vines. I have a young Apple orchard of 1300 trees set for fruit, and yet I expect to extend.

"The fruit crop looks promising in Western New York. Apples, Pears, Peaches, Plums, Cherries, and Grapes are setting finely. The Currant worm is still at work. But as an offset there is an increased attention being paid to Strawberries and Raspberries so that the supply is largely on the increase from year to year. Black Naples Currants are coming more into use, as they are fine for jelly, tarts and pies, the worm does not trouble them as they, in the raw state, have an odor not in liking with his smell or taste, &c."

QUERCUS PYRAMIDALIS—*Mr. Ferrand supplies the following interesting note*:—"I notice what you wrote on Quercus pyramidalis in *Monthly*; there is a large specimen of this species in my father's ground gives seeds freely, which reproduces the pyramidal form ninety times in the hundred, the balance returning to the common oak form."

DOWN IN EASTERN TENNESSEE—*A Correspondent, near Chattanooga*, writes:—"I have undertaken a good large 'steut' (?) but hope by the blessings of Providence to succeed, for that is what, in this practical age, gives value to man's efforts to improve, especially where innovations upon established usages and customs are introduced.

It does seem difficult for these people to understand how it is that I have taken hold of a tract of their 'thin' worn out land, that has been cropped for 25 years without *once* seeding down or manuring, and made such splendid growth of 'garden truck' as now graces my naturally beautiful grounds.

"Cabbage heading finely *without* fertilizers; Onions large enough for early market; Peas *now in use*; Tomatoes as large as Lima Beans; Lettuce heads big as your hat, and Radishes to match, &c., &c., *in open border without manure* (indeed I found none on the premises) Sweet Potatoes, vines 2 feet long and growing like fun. Oh, don't get weary now. I very seldom 'bore' you, but they *do* talk a 'deal' about that 'Yankee' at *Spring Garden* over in 'Co-oa-hul-las' and I hope it will not be in vain.

"I have planted Monitor, White Sprout, Goodrich's Seedling, Cuzco and Garnet Chili's in this poor place and the *tops* are out-running me—2 feet long—(soil gravelly loam and clay subsoil) shall I 'mow them off' as some cultivators direct, or 'let 'em grow!' Shall I 'roll a barrel' over my *big* Onion *tops* to make them 'bottom freely'?"

[The last is good. We do not know for potatoes.]

THE CHILI STRAWBERRY—*A Tennessee Correspondent* says,—“J. M. W., asks for ‘the peculiar excellencies’ of the Chili Strawberry. I have cultivated it—comes *awfully* recommended, and I found it an awful grower. Fruit *very* large, of tolerable quality, only *not much* of ‘em. Better suited to the soil and climate of Georgia *perhaps*.”

SULPHUR FOR ANTS—*A Cleveland Correspondent* says:—“I have tried the ‘sulphur’ for ‘Ants in Hotbeds’ heretofore, and am happy to say it does the work.”

FRUIT PROSPECTS IN WEST MILTON, OHIO—*L. S. M.*, writes:—“Our past Spring has been very unlike that of last year. Very dry and cold, the frost continuing to make its returns up to the close of last month, and cutting down tender vegetables, &c.

“The prospect of fruit in this county (Miami) is not at all flattering. Cherries will be ‘few and far between,’ Pears very scattering, Peaches and Plums ‘nix cum rouse,’ but Apples are setting better, some trees are full. We hope to have more this year than we have had for 3 years past* to supply the lack in other fruit. Some of our more tender Cherry trees are killed out-right by last Winter’s cold. We’ll have near half crop wheat;—the freeze and H. fly nearly destroyed it.”

PREPARING ROSES FOR WINTER BLOOM—*C. E. D., Pautucket, R. I.*, asks:—“Shall I cut my Rose bushes, that are to bloom next Winter, close to the ground now?”

[Good strong, healthy wood is very desirable for Winter flowering. If they had been cut earlier it would have helped strength,—but to cut down much at this season will probably weaken, and produce unripe wood which will not flower well.]

JAPAN SOPHORA AND VIRGILIA LUTEA—*J. G. D., King of Prussia, Pa.*, asks:—“Please inform a subscriber through the *Gardener's Monthly* if the Japan Sophora is hardy in our latitude, what its good qualities are as an ornamental tree, also if it has blossomed, to your knowledge, in this country or Europe, and what kind and color the flowers are.

“Please inform me in like particulars in regard to the ‘*Virgilia lutea*.’”

*That seedling sweet Apple I sent thee specimens of last Fall is again full of fruit (a fine Apple), so are some other seedlings.

[The *Virgilia* has long racemes of white flowers, somewhat resembling the Locust. Its name *lutea* is derived from the color of the wood. It is not uncommon about Philadelphia, in flower; a large tree of *Sophora* once existed in the Bartram garden. Flowers similar, but smaller, to *Virgilia*. Both are very ornamental trees in themselves independent of their blossoms.”

OBITUARY.

THURLOW W. BROWN.

The editor of the *Wisconsin Chief*, an excellent Horticulturist, and a valuable occasional correspondent of this journal, died on the 5th of May, in his 47th year.

It was never our good fortune to meet Mr. Brown,—but sympathizing with him strongly in his temperance labors, through feeling how little use we might have been to the community but for such labors as his by others in times past,—and always reading his pleasant letters laden to overflowing with a love of nature and the good of his his fellow-man, we looked forward pleasantly to the time, now never to be, when we might meet face to face.

Mr. Brown took a great interest in the success of the *Gardener's Monthly*. When on lecturing tours, generally at his own expense, he seemed to lose no opportunity of helping us; for subscriptions through him this way were frequent. For three months before his death, as we learn from a notice in his journal, he wrote but one letter and that we received a little while before his death—despondent about his health, but yet giving us no idea that his complaint was dangerous.

Over work in the cause of humanity has been fatal to our friend,—and yet it is better to depart feeling that a short life has not been spent in vain, than that the spot which once knew us in a longer one, shall not only “know us no more for ever,” but not miss us either. We part with our friend feeling that not only the temperance cause in which he specially worked has suffered, but that by his death horticulture and our readers have lost likewise.

MR. H. K. POTTER.

A singular casualty recently occurred at Grafton, Mass., by which Mr. H. K. Potter, a gentleman well known to many citizens of Worcester as an active member of the Horticultural Society, lost his life. He had been for some time engaged in sinking large stones that lay around on his farm, and

had finally come to the last one, a huge boulder, weighing perhaps two tons or more. He was engaged all the morning of Friday in digging a large hole by the side of it and partially under it, when the rock fell, crushing him against the side of the cavity, and probably causing instant death.

Books, Catalogues, &c.

CULTIVATION OF THE GRAPE. By W. C. Strong. Boston: J. E. Tilton & Co.

This is another of the beautiful works for which Tilton & Co. have become so famous,—and in this instance the book is worth the attention the publishers have given to it.

Mr. Strong is well known as an intelligent Grape grower, and with that happy judgment which selects subjects interesting to the public and at the same time entirely within the knowledge and control of the writer, always manages to attract interest to any thing he undertakes.

In this volume Grape culture is brought down to the present state of Grape knowledge. Every thing that has been written in reference to the subject seems to have had Mr. Strong's careful study, and to have been compared with his own experience,—so that while furnishing a guide to the Grape grower, he gives him at the same time an Encyclopædia of the whole subject.

GRAPES AND WINE. By George Husmann, of Hermann, Mo. New York: Published by Messrs. Geo. E. & F. W. Woodward.

This little book is refreshingly original. It is the practical experience of a very successful Vineyardist, in one of the most successful regions of the far West. It is a detail of the practice of one who has been successful, without reference to any other better or worse ways of other people. Of course a work of this kind will excite controversy as the practices of no two cultivators exactly coincide,—but so far as we can judge, at this distance from the field occupied by the author, all his positions are sound in the main.

Mr. H. is an advocate of sugaring wines under certain circumstances; and he seems to us who have no partiality either way, and may thus perhaps be considered a disinterested judge in the controversy now raging between the two wine classes, to make out his case conclusively. What nature is occasionally deficient in, he would supply to bring her up to her usual position.

In his description of varieties of Grape many will think that his condemnations and praises are too sweeping, and tinged somewhat with personal prejudices. He does not hesitate to write praisingly of a variety he received from "a warm-hearted friend" which he has "fruited only once,"—while of another variety, the raiser of which "did not deal liberally with him though he offered a dollar an eye," he cannot give a good opinion because he "fruited it only once." We do not think that these little matters have in the least affected Mr. H.'s judgment,—but those who do not know him will regard them suspiciously, and he would have therefore served his own cause by leaving them out.

TRANSACTIONS OF THE MICHIGAN STATE BOARD OF AGRICULTURE, FOR 1865.

From Sanford Howard, Esq., Secretary of the Board. The transactions of this Society always have the good fortune to be very interesting and valuable,—and this volume equally so with its predecessors. As specially referring to horticulture, we learn that the Apple crop last year in Michigan, though not abundant, was the most profitable one ever known. The Peach crop was limited to a few favored localities along Lake Michigan. In the central part of the State however in some places in the garden of Mr. M. Yawger for instances abundant crops of the finest varieties were obtained. Pears generally did well. The Pear blight occasionally made its appearance. The Plum is generally over-matched by the curculio. Grapes are annually increasing in the State, they are troubled a little by the rot. Cutler and Savidge of Mill Point had an estimate of four tons from half an acre—chiefly Isabella, Catawba and Concord. S. O. Knapp, Esq., of Jackson, is recorded as one of the most successful Pear orchardists. His collection embraces about 500 bearing trees. He is a practitioner of screening his orchard from winds. He uses for this purpose native Thorns, Hemlock and Arborvitæ.

PRACTICAL AND SCIENTIFIC FRUIT-CULTURE.—By Charles R. Baker. Boston: Lee & Sheppard.

Mr. Baker is a young nurseryman, managing partner in the Dorchester nurseries, and a nephew of Hon. M. P. Wilder. Intelligent, and with a praiseworthy ambition to be of service to horticulture, we feel that he will some day be a very useful member of the Horticultural fraternity. We say this much in behalf of Mr. Baker's motives, objects, and capabilities, because strict justice compels us to say that the present work is a failure, and we

have no doubt Mr. Baker in future years will himself feel it to be so.

He tells us in the preface that Mr. Wilder is not responsible for the "peculiar" sentiments of the work, which we can readily believe; and he expresses a regret that Mr. Wilder's illness did not permit him to "revise the manuscript." We also regret it, as we are quite sure he would have advised a suspension of publication until our young friend had better digested what was due to horticultural literature, to contemporary authors, and to the credit of the horticultural community.

Mr. Baker could scarcely have read Barry's Fruit Garden, and other contemporaneous works, or he would have seen so far as he has developed any thing in this work, that he has nothing to say not already better told. He gives a long list of works relating to the subject, from Jethro Tull to Knight and Loudon, to whose old-fashioned notions, picked up in another and different climate, he acknowledges his indebtedness, but he seems completely to ignore all his fellow-laborers in the same field.

To Mr. Baker's youthful inexperience as to the proprieties of authorship also, rather than to an obtuse moral feeling, do we attribute the wholesale appropriations of the labors of others, evidently without any application for their consent, which the volume exhibits. Fitch on Insects, Berkeley on Fungi, French on Drainage, and Barry on Varieties of Fruits, (from American Pomological Society's Catalogue,) have been seized on by the strong hand.

Of the latter, *one-eighth of the whole book* is an exact copy. French's Drainage is made to contribute about 36 pages, and other authors in less proportion. The very audacity with which Mr. Baker acknowledges these appropriations, satisfies us that he could not have supposed there was any thing improper in the proceeding.

We pass over the peculiarities of style and of grammar; the misapprehension of scientific principles and consequent erroneous deductions from them; the illogical conclusions from well-known principles; and the unfortunate recommendations of useless English practices for American cultivators; as, in view of other circumstances, hardly worth the criticism.

The writer of this notice has a warm personal friendship for Mr. Baker, and only his public duty as a reviewer could induce him to write thus of a work the author of which he esteems. And although this maiden effort has proved a failure, we are sure the author is capable of better things, which the public, we hope, will benefit by in the future.

New and Rare Plants.

THUJOPSIS DOLABRATA.—Of this still rare and beautiful Evergreen Mr. Francis Parkman hands us the following note of its behavior the past winter:

"This beautiful Japanese Evergreen has proved with me hardy to a degree far above my expectations. Two plants of it have stood here in an open situation for three Winters without injury, receiving no other protection than that of two or three pine boughs thrust into the earth around them. The past Winter has proved, in this neighborhood, very fatal to Evergreens, and has killed back Hemlocks and Arborvitæ in abundance; but not a single frond of the Thujopsis was even browned. Another plant of the same species stands, in a most thriving condition, on a bed of Rhododendrons, where it was planted three years ago when not above four inches in height. It has never suffered in the least from the Winter, and has now reached the height of a foot or more.

"Both varieties, the variegated and the plain, seem equally enduring. With respect to that other singularly beautiful Japanese Evergreen, *Retinospora pisifera aurea*, I am not inclined to judge so favorably. It has been badly killed back even in a cold frame; but its beauty is so great, especially when its young buds are opening, that it is well worth all the pains that may be necessary to shelter it."

THE following plants have recently been figured in Hooker's *Botanical Magazine*.—

HABRANTHUS FULGENS (Brilliant Habranthus).—*Nat. ord.*, Amaryllidææ. *Linn.*, Hexandria Monogynia. Native of tropical and southern extra-tropical America. Flowers scarlet, with yellow centre and tube. Introduced by Messrs. Backhouse, York.—t. 5563.

DENDROBIUM DIXANTHUM (Double-tinted Yellow Dendrobium).—*Nat. ord.*, Orchidæææ. *Linn.*, Gynandria Monandria. Native of Moulmein. Introduced by Messrs. Low & Co., Clapton. There are two tints of yellow in the flowers.—t. 5564.

GLADIOLUS PAPILO (Butterfly-flowered Gladiolus).—*Nat. ord.*, Iridæææ. *Linn.*, Hexandria Monogynia. From the Cape of Good Hope. Flowers various tints of pink, yellow and purplish crimson.—t. 5565.

PERISTROPHE LANCEOLARIA (Lance-leaved Peristrophe).—*Nat. ord.*, Acanthæææ. *Linn.*, Dianthia Monogynia. Native of Moulmein. Herbaceous. Flowers pale purple.—t. 5566.

Domestic Intelligence.

CULTIVATION AND VARIETIES OF RASPBERRIES FOR MARKET.—J. P. Willits, of the firm of Willits Bro's, Buchanan, Michigan, who has had 10 years' experience in raising small fruits for the Chicago market, writes to the *Prairie Farmer*:

"Our new plantation of Raspberries we are putting in rows 5 feet apart each way, which enables us to run the cultivator both ways. But we recommend when land is high priced, as in the vicinity of Chicago, to plant 5 feet, by 2½ in the row; then, after the second crop of fruit is off, remove every other plant, leaving them 5 by 5.

"When canes have thrown a growth of 4 to 5 feet, pinch them off, which causes them to thicken up, whereby they will support themselves without stakes or trellises, besides the fruit is much finer.

The Doolittle Improved Black Cap is the only variety we are planting to any extent for market, it being perfectly hardy, and standing our coldest Winters without protection, flesh hard, which enables it to bear carriage, of large size and an abundant bearer. It does not sucker from the roots, but is propagated by covering the ends of the canes. August and September is the time to propagate them.

"We are cultivating, though in a small way, the Purple Cane, Miami, Catawissa, Brinckle's Orange and American Black Cap."

THE EVERGREEN CHERRY.—"Since my previous letter to you respecting the Evergreen Cherry I have learned that the plant is very difficult to transplant. In fact that it cannot be removed from the nursery as young trees (fruit trees) usually are. All Evergreens, I believe, are attended with the like trouble. On this point though you will be better posted than I. I am told that the young plants are here kept in pots until ready for sale, and then planted without disturbing the roots. Small plants sell for \$2 each. The price and difficulty of transplanting accounts for the paucity of this species of hedge in this country.

If you can plant the seeds directly alongside of a straight fence (say the front of a lawn), it would be the easiest method of establishing a hedge that would be most brilliant and superb, and at the same time serve as a rare and striking advertisement.

"Some young plants that I examined a few days since showed a complete lack of fibres at the roots—striking *straight down* into the ground. The soil was a *sandy, sandy, very sandy loam!*

"Despite this drawback to the hedge cherry, for *fencing* purposes it will still be a great acquisition to the nursery. By chopping the roots in the ground a few times I presume it may be made to throw out laterals sufficiently to transplant without the use of pots.

"And I cannot but think that if the young plants were taken up and *puddled*, and kept *moist* until set in the hedgerow, that they would live. Especially if this were done on a cloudy or wet day, or in the night. I have succeeded thus with young Cedars from the bluffs, after failing with less care.

"The opinion is entertained here that it will be able to withstand the frosts of the States. If it proves otherwise, the fact will be greatly to be deplored. For, without considering it as a hedge plant, it is calculated to form a striking contrast to the prevailing trees and shrubs of the lawn during the Summer, and in Winter a most agreeable relief to the monotony that Pines, Firs and Cedars present.

"I do not despair, though, of the Cherry being extensively used as hedge. I have an abiding faith that, with the requisite care, it may be transplanted, though not as cheaply as the Osage Orange. But let any man of taste once behold a fence of it, and woe be unto him until he can have such a fence himself! His peace of mind will be gone to a certainty. A terrible affliction is in store for this wicked generation (Cherry fence on the brain) unless Jack Frost happen to nip it in the bud. And *bad cess* to him if he do!

"I regret that I cannot give you the botanical name of the plant, but I will endeavor to do so at some future time."—P. S. BURNES, in *Coleman's Rural World*.

[This is the *Cerasus ilicifolius*. It is a beautiful thing and has been tried in the Germantown Nurseries where it does not stand the Winter,—but would no doubt further south.—ED. G. M.]

HORTICULTURAL ENTERPRISE IN THE UNITED STATES AND CANADA.—No one can even glance through the columns of the rural journals published in the United States, without being struck with the evidence they furnish as to the activity of mind and business energy which are being put forth in the department of horticulture. Floral novelties, new fruit seedlings or hybrids, ornamental shrubs, for which distant parts of the earth has been ransacked, rare seeds and choice bulbs never before heard of, are constantly pressing into notice; and while, of course, many of them are mere pretenders

to excellence, and trumpeted forth for money-making purposes, it cannot be gainsayed that we have obtained some very valuable horticultural acquisitions from our neighbors across the lines. In Strawberries and Grapes alone, American horticulturists have greatly distinguished themselves. Of the former, it is only necessary to name Wilson's Albany Seedling, a treasure of untold value to the gardeners, professional and amateur, of this continent. A little acid, it has, nevertheless, qualities which place it immeasurably in advance of all competitors thus far. Yet this magnificent berry will doubtless, ere long, be surpassed by some of the seedlings which enthusiastic horticulturists are testing in their grounds. Of Grapes, we have several most valuable varieties. The originator of the Concord, Mr. Bull, of Concord, Mass., has lived to see his vine planted by millions from Maine to Minnesota. Dr. Grant, of New York, and Mr. Rogers, of Salem, Mass., have also achieved important triumphs in Grape seedlings and hybrids. *The Grape for America* has, however, yet to be produced,—if, indeed, our fellow-countryman, Mr. Arnold, of Paris, has not already accomplished what so many have long been aiming at,—the combination of the luscious flavor of a glass-grown Grape, with the hardiness of an out-door vine. Hon. M. P. Wilder, of Boston, Mass.,—very high authority—in a letter that we have seen, expresses the opinion that Mr. Arnold's will prove the Grape of this continent, and that posterity will "cherish the name and bless the memory" of its originator. To all which we heartily respond, "So mote it be!" When it is considered that thousands of seedlings must be grown and tested ere a single variety worth any thing is obtained, and also that the process of hybridizing is a very slow and difficult one, some idea will be formed of the amount of thought and labor necessary to the production of any real acquisition to our horticultural treasures. While our American neighbors are busily engaged in the search for novelties and improvements in the regions of floral and shrub beauty, they are especially diligent in the realm of fruit. They have produced Apples, Pears, Peaches, Plums and Cherries, that leave nothing further to be desired. In the department of small fruits they have been very assiduous, and have succeeded in obtaining a gooseberry that defies the mildew,—that bane of imported gooseberries,—some valuable blackberries, the Rochelle and Kittatiny, the former a great success in the Midland States, and the latter hardy enough for the most northerly situations. It is questionable if any country on earth

be better supplied with fruit in variety and succession than is the United States at the present time.

These brilliant successes would not have been achieved but for the existence, in pretty considerable development, of horticultural tastes among the people. There has been a healthy demand for every thing really valuable, whether it be for ornament or use. Eminently a practical people, the Americans are, nevertheless, an æsthetic people. They are often extravagant in their outlays for matters of taste, ornament and display. They cultivate the beautiful, in dress, furniture, and the surroundings of their homes. Were there not a demand for the expensive novelties we see continually advertised in their agricultural and horticultural journals, they would not be offered. A seed of the *Victoria Regia* for one dollar,—a fine lily bulb newly from Japan for eight dollars,—a Yeddo Grape-vine also from Japan for ten dollars, a new gladiolus bulb or dahlia tuber at three or five dollars, a new species of spruce seed three dollars per ounce, are specimens of advertisements by no means rarely to be found in the journals referred to. The large scale on which some things are raised and sold cannot fail to attract attention. Grape-cuttings are sold by the million, cranberry vines by the barrel, and a nursery or two, or three hundred acres in extent is not uncommon. As for the sales of such common nursery articles as Apple, Pear, Plum, and Cherry trees, they are past enumeration.

Is the rage for these things excessive and reprehensible? We are not prepared to say that it is. Of all extravagance that can possibly be committed, surely there is none so excusable as that which is expended on the beautiful and useful things of nature. Condemn, if you please, costly dressing, flashy jewelry, splendid equipage, expensive cookery, and lavish architecture, but respect the eagerness to collect and plant about one's house the lovely and valuable creations of God,—the flowers and fruits that declare his glory and show forth his handy-work.

We, in Canada, need no checking in this direction, but rather urging. We have thousands of rural homes that haven't a beautiful thing in all their surroundings, except the landscape and the sky. Many a farm has no fruit on it except a few Strawberries on the edge of the woods, a straggling patch or two of Raspberries in the fence corners, or may-hap a few huckleberry bushes in some neglected spot. Our nurserymen are very poorly encouraged. Any travelling irresponsible peddler of fruit trees is patronized before well-known persons who have a stake in the country and a character to

maintain. And we have plenty of farmers who have yet to buy and plant their first fruit tree. Matters are improving somewhat, but we are very far behind-hand in all matters of taste and refinement. There are, we are glad to know, many attractive country homes in various parts of Canada, and some neighborhoods are fast acquiring a reputation for the culture of fruits, flowers, and rural beauty in general. But these are exceptions. We hope they will, ere long, become the rule. For natural advantages, we have a land that cannot be surpassed. Let us enrich and adorn it with fruits and flowers, with shrubs and trees. Much may be done at but little cost. The taste once exercised will improve, and busying itself to multiply the delights of home, will enjoy them with an ever-increasing relish.—*Canada Farmer.*

Foreign Intelligence.

CURIOUS AFRICAN TREE.—The most curious, and in every respect far the most remarkable, of all the plants found in Angola, is the N'tumbo of the natives, a tree of so abnormal and peculiar structure, that Dr. J. D. Hooker rightly remarks in his memoir in the Transactions of the Linnean Society of London, that since the discovery of *Rafflesia Arnoldi* in Sumatra, no plant has excited so great an interest as the *Welwitschia mirabilis*, dedicated to the honor of its discoverer.

This prodigy amongst trees belongs to the order Gnetaceæ, and certainly attains an age of at least 100 years. The unbranched stem, raised only a few inches from the ground, measures in very old individuals about two feet in length, and 4, (according to Welwitsch,) or even 6, (according to Monteiro,) in breadth at the crown. Raised, as it is, so slightly above the dry, gravelly soil, it resembles a gigantic loaf split in the centre into two wide-gaping halves, or a massive round plate depressed in the centre, with a rough, cracked, warty, dark-brown surface, whose entire never changed nor renewed foliage consists of two opposite evergreen coriaceous leaves spread over the ground, variously curled and waved, which are from 1 to 2, or even 3 fathoms long, and 2 to 2½ feet broad, and what is most remarkable, they are the pair of cotyledons of the germinating plant, which continue to exist through its whole life, a phenomenon of which we have scarcely an example in any genus belonging to the higher orders of plants. The forked inflorescence, which breaks out every year in the circumference of the crown, bears smaller, barren, hermaphrodite catkins, and larger

carmine red female ones 2 inches long, and very like Fir cones.

Welwitsch found these mis-shapen monsters deeply sunk in the soil, with their middle-sized roots, in considerable quantities at Cabo Negro, (15° 40' south lat.,) on the dry plateau of the coast of Benguela, which is covered with loose, sandy, rough rubble, and from 300 to 400 feet above the level of the sea. A little north of this place at Mossamedes, in the neighborhood of the Nicolas River, on the little Fishbay, at 14° 20' south lat. Herr Monterio found it at a later period in a perfectly similar situation on quartzose schistose soil; and Mr. Baines, as also the well-known Cape traveller, Mr. Anderson, in Damaraland, between the 22d and 23d degrees of south latitude in the neighborhood of Whalefish Bay, in a district in which not a drop of rain ever fall. The distribution of this remarkable plant, as at present known, which calls to mind some vegetable of a creation long since past, fall within the 15th and 23d degrees of south latitude, and may therefore be considered as tolerably characteristic. It is well known to the natives. We must mention, as of peculiar interest to the man of science, as also for the Pharmacist, or even the Ethnologist, the notice in the Portuguese language of the samples of wood, materia medica, and manufactures from Angola, sent to the Industrial Exhibition of London in 1862, of which Dr. Welwitsch is the author. It is greatly to be desired that this pamphlet of scarcely four sheets should find an intelligent translator, through which the meritorious and zealous labors of our friend should obtain a wider circulation and estimation.—*Gardener's Weekly.*

STRAWBERRIES IN THE UNITED STATES.—Strawberries come in about the end of May, and beginning of June, and for three weeks or a month reign supreme, to the exclusion of almost all other fruits, and owing to the extreme heat then prevailing, the Strawberry season only lasts for that period. The same cause also detracts materially from the flavor of the Strawberry, the very rapid maturing process undergone, operating, at least, against the juices of this fruit being highly perfected; but as they are seldom eaten singly, and never sent to table as gathered, any deficiency of flavor is not easily detected when "smothered in crame." Strawberry-growing for market has been gone into most spiritedly, the principal grower in the States, Mr. Knox, of Pittsburgh, Pennsylvania, rejoicing in the regal title of the "Strawberry King," and long may royalty be thus honored. Many varieties, such as

Keens' Seedling, British Queen, and Sir Harry, do not thrive well; but again, some others, such as Triomphe de Gand, Victoria, La Constante, &c., seem to have a more adaptable constitution, and bear abundantly. The favorite market variety, and the most prolific bearer I ever saw, is a seedling raised in this country, called Wilson's Albany. It is a little acid, unless when dead ripe, but a valuable Strawberry for preserves. Triomphe de Gand has risen rapidly in favor, and bids fair to be a standard fruit.—*Correspondent of Cot. Gardener.*

CONSOLEA.—Favored by the climate of Sicily, M. Michel Angelo Console, Assistant Director of the Botanic Garden of Palermo, has had the rare opportunity of examining the flowers of certain plants, formerly referred to OPUNTIA, but now called CONSOLEA, to wit: *O. rubescens* and *O. spinosissima*. He finds in their blossoms a structure which has not hitherto been observed or recorded in the plants of this family. The base of the style, which is tapered below so as to become substipitate, stands in a kind of cup at the apex of the ovary. In other words, the style is inserted in a cupuliform disk. It seems that the species in which this structure has been observed, have other characteristic features,—as, for example, the stems are tall, nearly simple, and everywhere inarticulated and continuous. These facts have induced M. Lemaire to propose for the plants a new genus of Cactaceae, which he calls Consolea, in honor of M. Console, and to which he refers *O. rubescens*, an unarmed, and *O. catacantha*, *ferox*, *leucacantha*, and *spinosissima*, all aculeate species.

WELWITSCH, THE AFRICAN EXPLORER.—Dr. Frederic Welwitsch was born at Mariansaal, in Carinthia, and from the very commencement of his academical course he acquired a great taste for botany. He was soon well known for his passionate love of collecting, his scientific knowledge of his native flora, and his indisputable merit as a contributor to the accurate knowledge of the Flora of the Vienna basin, and of Lower Austria. He soon, however, extended his researches beyond these narrow limits, and included the Floras of the rest of Europe and other continents in the compass of his investigations. Desirous, however, to observe for himself, he accepted, a short time after he had taken his doctor's degree, the invitation of the Wirtembergish Botanical Travelling Union to explore the treasures of the Portugese Flora, a task which had been so happily commenced by Link and Hoffmannsegg. Having accomplished what he

undertook to the satisfaction of his employers, he was induced to remain at Lisbon as a teacher of botany.

These brief details will serve to show how he became connected, and eventually to his distinguished credit, with the scientific expedition to Angola fitted out by the Portugese Government. Furnished with all the information necessary for such a journey, hardened in body against the evil influence of a changeable temperature, accustomed to endure with patience and impunity all sorts of privations and difficulties, extremely enterprising and cool in the midst of danger, gifted, moreover, with an eminent degree of tact and discrimination, Welwitsch was exactly the man to be implicitly trusted with so hazardous an expedition.

More fortunate than Smith, who, together with most of his companions in Captain Tuckey's expedition to the river Congo, which at first appeared so hopeful, at last fell a sacrifice to the dreadful fever of the country, Welwitsch examined the greater part of the coast between the Congo and Cabo Negro, as also that lying between 6° and 16° south latitude. He penetrated, moreover, through indescribable difficulties, from the mouth of the Cuanza 250 miles into the interior, as far as Banza di Quisonde, towards the east.

In the first year of his abode in Angola he examined the coast between the Congo and Cuanza for more than three degrees of latitude, oppressed by the heat of the desert, added to hunger and thirst. In October, 1854, he passed through the hilly and mountainous districts to the east, in order to penetrate the wonderful and richly-wooded districts of Cazenaja and Golungo-alto. Welwitsch remained nearly two years, wandering through these regions in every direction, mostly on foot, oppressed by fever, and with legs swollen and covered with sores. From September to December, 1858, (the spring-time in Angola), when scarcely recovered from illness, he visited the shores of Dande to the north of S. Paolo de Loando, and in the following year, (1859.) from June far into October, the coast of Mossamedes as far as Cabo Negro extending southward from Benguela.—*Gardener's Chronicle.*

PARADISE APPLE STOCKS.—A very interesting discussion has been going on in the *London Journal of Horticulture*, as to merits of this, and history of varieties. The following extracts from a note by J. Scott, will interest our readers:—

"Whilst on a botanical tour in the south of Russia I crossed from the Sea of Azof to Astrachan, and along the shores of the Caspian, over

the Caucasus to Tefis, thence to Mingrelia and Batoum in the north of Armenia. I had, therefore, an opportunity of seeing our little friend in all his pride of place in those mighty mountains that stretch from the Black to the Cyprian Seas, and divide Astrachan from Georgia, Armenia, &c., and whose summits may be said to be capped with eternal snow. There, amidst some of the most sublime scenery in the world, our petit Pommier, or, what I know for it, the *Pyrus malus præcox*, revels and luxuriates, forming jungles of considerable extent, and throwing up its innumerable progeny in thousands around it. It is found at great elevations, reaching almost to the snow-line; however, at these altitudes it is a "wee thing;" lower down the mountains, where the Walnut, Chestnut, and vine grow to mammoth proportions, it attains considerable dimensions.

"Your friend, of Sawbridgeworth, says that, 'The Pommier de Paradis should be grown in dry, light soils.'" He may have got this out of his quarto edition of Miller, but I do not think it speaks much knowledge of the plant under consideration. My experience of it is just the contrary. The tree in its wild habitats luxuriates in dark, deep, rich, boggy soils, where its roots are always in contact with moisture, and in summer especially so, from the melting of the snow above continually running down the mountains, and watering all the vegetation below copiously. I think those who attempt to grow it in "dry, warm soils," will be like the two friends who killed it by the thousand. They may roast the little Pommier, but they will find it difficult to freeze it to death. I have seen it in too many frozen localities to allow me to think that; in fact, were I to trace its geographical distribution from Persia to Astrachan, and from thence northward, I think it would be found a fellow denizen with the Siberian Crab itself. This I know, that both the *Pyrus astrachanica* and *P. præcox* are hardy at Warsaw and Moscow, and the two are found inhabiting the same localities as far south as Persia.

"As to Mr. Rivers' supposition, that this and the Dwarf Apple of Armenia are the same, I cannot say whether it is correct or not, as I have not seen the article in the 'Horticultural Transactions,'" but I may say that the *Pyrus communis* and *malus* have each of them other representatives in these regions, such as the *Pyrus communis flore pleno*, &c.

"Your correspondent Mr. Robson, I think, mistakes the purpose for which Paradise stocks are advocated. He says a less quantity is produced by trees on this stock than by the same number of

trees on a free-growing stock. This is, I think, admitted by all parties. What we claim for the Paradise is its dwarfing nature and early bearing character, making it a useful stock for such as have small gardens, yet require to have a diversity of fruit. We all know that a tree spreading over 20 or 30 square yards will, possibly, yield more Apples than the twenty or thirty trees on Paradise stocks which will stand on the same space of ground. In the one case you have one sort of Apple to repletion, in the other twenty sorts in moderate abundance. This is all we advocate, and do not deny the contrary proposition; yet to all who want to have large Apples, quickly in bearing, we say, use the Paradise stock. I had a tree here in 1865 that weighed, with root and branches, half a pound; and this little tree, 18 inches high, and no thicker than a little lady's little finger, bore three fruit, one weighing 15 ozs., the other two just over 1 lb. Here was an instance of a tree producing four times its own weight of fruit, and the more I see of the true Pommier de Paradis stock, the more I am convinced that it is *the* stock to graft large Apples upon. Small-growing Apples are generally produced upon small-growing trees, and, therefore, are less needed upon the Paradise stock.

"May I ask what Dr. Hogg means, in his 'British Pomology,' by recommending certain sorts to be worked on the Paradise stock? Is it a fact that he had any other stock in his mind's eye at the time than the said Pommier? If so, I would urge all writers on pomology, when speaking of stocks, to give right names to things. Why give the name of Paradise to the Doucin, or the Dutch Creeper, or to any other surface-rooting stock? The Pommier de Paradis seems to have had the priority, and why deprive it of it?"

"I have now to say that what are called Doucin and English Paradise stocks, are nothing more than some surface-rooting Crabs, chosen for their free-rooting propensities by somebody, just as Mr. Rivers and myself have chosen our No. 1's, and which we both mean to make so much of. Some years ago I bought five hundred Doucin stocks from Mr. Rivers, and five hundred from a Woking house. I planted them as follows: Mr. Rivers' first, and the Woking ones second, with three thousand Crabs following. Now I declare and affirm, that I never could tell the difference between the trees grafted on any of the three lots; they all grew alike strong, and threw up stems 6 feet high the first year after grafting. So much for the dwarfing character of the said Doucin sent by Mr. Rivers, which, I must say, was quite true to name and de-

scription, and the right sort, as far as I am a judge. The Woking stocks were English Paradise, or at least what I have always seen for it; and both stocks, as already stated, forced on the trees as well as did the Crabs planted in the same quarter, and at the same time, and this is the case with every Apple stock I have yet grown, excepting the Pommer de Paradis; only that good surface-rooting stocks ripen the wood better than do the deep-rooting kinds, thereby causing the Apples grafted on them to bear sooner. As to Mr. Rivers saying that there are several sorts of stocks used by the French, and called Doucin, I know it to be so, but these stocks are just of the category that Mr. Rivers' and mine are—surface-rooting Crabs."—*Cottage Gardener*.

NEW GREEK CONIFERS.—What is *Picea Apollinis*? Link and Antoine describe this as a distinct species. Endlicher made it a variety of *P. pectinata*. Carriere regards it as a species allied to, but distinct from, *P. pectinata*, and Mr. Gordon records it as a synonym of *P. cephalonica*. In our opinion it is entitled to rank as a species forming the transition between *P. pectinata* and *P. cephalonica*. Its leaf is pointed, as is that of *P. cephalonica*, but not so sharp. The number of rows of stomata on the leaf, as well as the branches and cones, are much the same in both. The scale of the cone has its lip more turned over than in *P. cephalonica*, and its bract is broader, and somewhat more expanded at the base. Its seed is similar to that of *P. pectinata*, but quite distinct from that of *P. cephalonica*. The expansion of the wing is present in *P. Apollinis* and *P. pectinata*, but does not occur in *P. cephalonica*. It has certainly more to do with *P. pectinata* than with *P. cephalonica*. What is *Picea Panachaica*? This, we believe, is one of Dr. Heldreich's new species. The form of its seed corresponds with that of *P. cephalonica*. The other parts seem all equally identical with it, with the exception of the leaf, which is a trifle narrower, and more elongate. The distribution and number of the rows of stomata, however, are the same, and we can see no reason for holding this to be different from *P. cephalonica*.

BAMBOOS FOR PAPER.—Mr. N. Wilson, of the Jamaica Botanic Garden, informs us that the Bamboo is being largely exported from the island to New York, for the manufacture of paper. As much as 70 per cent. of clean fibre is obtained from it. The Bamboo (*Bambusa gigantea*) attains its full height of 80 to 100 feet in three or four

months time, and the average growth during that period has been ascertained by measurement to be 8 inches in the 24 hours.—*Gardener's Chronicle*.

Horticultural Notices.

PENNA. HORTICULTURAL SOCIETY.

The regular monthly meeting of the Horticultural Society was held on the 19th, in their hall. The fine collections of vegetables were the special attractions of the visitors. In the collection from the garden of Henry Duhring were some Green Cos lettuce, nearly eighteen inches long, and weighing several pounds. To have this rare variety in perfection European seed is essential. In the lot from James McDonald was an early Cabbage of the Battersea variety, which weighed eight and a half pounds. A. L. Felton had among his some Lettuce of the curled Indian variety, eighteen inches wide, and as hard in the heads as a real Cabbage. This was considered the best variety for summer growth. Much interest was manifested in a lot of potatoes in Felton's collection. Early white sprouts and early Goodrich, planted the same day. Early Goodrich was double the size of the sprouts.

Peaches, Nectarines and Grapes, from the garden of Stephen Morris, Germantown, attracted much attention for their great beauty. They were, of course, raised under glass. "Stump the World," a pointed Peach, was considered one of the best for forcing in pots.

The finest Strawberries of Triomphe de Gand ever exhibited were from D. W. Herstine, Germantown, and J. R. Keim, in the city.

Fuchsias were in abundance, but nothing particularly new. A new passion flower was on exhibition, pink, with singular, but beautiful, narrow petals, a greenhouse variety called Princeps. A new, hardy shrub came from Robert Buist called Double Deutzia Crenata, very beautiful. There was little new amongst the flowers, although as beautiful as usual at these exhibitions.

The first premium for Potatoes was awarded to A. L. Felton, for Early Goodrich. Best half peck of Peas to James McDonald, gardener to M. Baird, Esq.,—the Common Extra Early. Best Early Beets to A. L. Felton,—Common Red Turnip variety. Best six heads of Lettuce, the Summer Green Cos, to Jacob Huster, gardener to Henry Duhring, Esq. The best collection of Vegetables, by a market gardener, to A. L. Felton,

and a private gardener to Jacob Huster, gardener to Henry Duhring, Esq. A special premium was awarded to James McDonald, for the fine head of Cabbage, previously referred to.

The best Table Design, best Basket of Cut Flowers, and best Hand Bouquet, were awarded to Donald McQueen, gardener to Joshua Longstreth, Esq. There was nothing particularly *new* or worthy of special note in the arrangement of the Basket and Bouquets on exhibition this time, except that *Cyrtanthera magnifica* makes a good centre for a Basket, and that Pansies, when arranged in a Bouquet with other flowers, the said "other flowers" being *all white*, have a very pretty and striking effect.

The premium for best Ornamental Foliage Plants was awarded to W. R. Hibbert, gardener to Fairman Rogers, Esq. They consisted of Marantas, Dracœnas, and other well-known plants. The second premium to Donald McQueen, gardener to Joshua Longstreth, had more variety, and were nearly as well grown,

The Committee called especial attention to some beautiful new plants from Robert Buist's collection. Mr. Chinnick, foreman, *Cissus amazonica*, a small-leaved, but beautifully variegated kind, *Gymnostachium Verschaffeltii*, which may probably prove a valuable leaf plant, but rather too small to judge, besides the *Deutzia* before noted, which is much more beautiful than we had anticipated. They also especially commended the beautiful *Passiflora Princeps*, from W. Sutherland, gardener to B. Bullock, Esq.

We have not the report of the Fruit Committee before us,—but we may remark that the fruits from W. Young, gardener to Stephen Morris, were particularly fine for orchard house fruit, and were very much admired,—while the two dishes of *Triomphe de Gand* were probably never beaten any where.

The Rose and Strawberry Show was held the Tuesday previous. It was for some time undecided by the Special Committee whether to hold it or not, as the weather was so backward, that for a while it seemed as if it might as well be deferred to the regular meeting night, but a few hot days decided the Committee to hold it as stated; but at the "ninth hour" of making the decision, it was not possible to advertise it so well as to bring out the real strength of the growers, and the results will not, therefore, benefit the community as it otherwise would.

We must say, however, that in spite of all, the

"improvements" made in new varieties, there were few, if any kind exhibited that drew more attention than the magnificent Hovey Seedling, of Mr. Harmar, who continues to be its great champion in this region. This and the Agriculturist, the *Triomphe de Gand* and the Albany Seedling were the decided favorites out of 29 varieties on the table. In size and flavor combined Lemig's White and Abington Blush lead the way, but are deficient in productive character. The Great Eastern, exhibited last year, was still considered as "maintaining its ground," as also was the "Stinger," a variety which was exhibited last year as the "Union," but which name has been dropped, on account of that name being already appropriated for a variety which is, however, believed to be the same as *Victoria*.

Of Roses the best 25 and best 12 were awarded to Robert Buist, and second best in each class, to Thomas Meehan.

WEST JERSEY FRUIT GROWERS' ASSOCIATION.

ATMOSPHERIC HUMIDITY AS A PROTECTOR FROM COLD.

BY JAMES S. LIPPINCOTT, HADDONFIELD, N. J.

(Concluded from page 192.)

We are not aware that any instrumental meteorological observations have been made corroborative of the truth of the principle advanced regarding the presence of aqueous vapor as a screen preventing the escape of radiant heat from the earth by night, except those we have ourselves instituted. Those, however, sustain the principle in the amplest manner, leaving no doubt of its correctness, and confirming the opinion expressed by the distinguished demonstrator, that the newly developed property of aqueous vapor must exert an enormous influence in the phenomena of meteorology. For more than a year past we have observed three times daily the state of humidity of the air around us,—have noted the temperature at various hours by ordinary and self-registering thermometers, which show the highest and lowest degrees to which the mercury has risen or fallen since last observed. The month of June, 1864, offered the best illustration of the influence of the protecting presence of humidity, or rather by its absence, of the injurious effects of excessive radiation through very dry air. We will remark that the average humidity of the air at 2, P. M., near Haddonfield, N. J., for June, 1864, was 51 per cent., or one-half saturated; that is, that the air held for that month, at that hour, an

average daily amount of vapor, which was but half the amount it might have held without disposing it as dew; that is about 6 grains to the cubic foot. On some days of that month the humidity reached at 2, P. M., beyond 90 per cent., or nine-tenths of its capacity, and held suspended about 9 grains of vapor in each cubic foot of air. But several remarkable days of great dryness, and some of excessive aridity occurred. At 2, P. M., of the 10th of June, we noted that the Hygrometer showed that but 45 per cent. of moisture was present, and at 9, P. M., a very low degree of 54 per cent., which for this hour is still more extraordinary, the monthly mean for 9 P. M. being 70 per cent., and often rising to 100, or saturation. There was thus at 2, P. M., as above, but $3\frac{1}{2}$ grains of vapor in the air; at 9 P. M. but $3\frac{1}{4}$ grains, and at the hours of 2 and 9 P. M. of the 10th, the wet bulb thermometer of Psychrometer or Hygrometer sank lower than it did at those hours on any other day in June. Through this comparatively transparent or diathermic medium, this dry air, the rays of radiant heat streamed away into the upper regions of the atmosphere, for the night was cloudless, and the consequence was a fall of the mercury in the self-registering thermometer, sometime in the night to 43° at six feet above the earth, and almost to 32° at the surface of the ground. This great reduction of temperature was felt from Maine to Minnesota, as far south as Haddonfield, N. J., Annapolis, Md., Northern Ohio and Illinois. Over this region a frost occurred more or less severe, except along the Southern border, where, though this effect did not appear, other results followed which, to some of the crops, were quite as disastrous as a frost would have been. In Massachusetts hickory shoots were entirely frozen; snow occurred in some places in New York and Vermont, and corn, potatoes and grass were injured. The wind being mainly from the north, the same degree of cold occurred on the next morning, or the 12th, or within one degree, that of 44° , though the relative humidity had risen to about the mean for the month, but still indicating but 50 per cent. of saturation.

On the 12th, at 2 P. M., a still lower per centage of humidity, viz: 36 was noticed, which implied but $3\frac{1}{2}$ grains of vapor in a cubic foot of air, and the low minimum of 44° was observed on the morning of the 13th following. Again on the 17th, 18th and 19th the humidity fell to 40, 41 and 42 per cent. respectively, and on the morning of the 18th, 19th and 20th the minima temperatures were 51° , 47° and 52° . On the 23th, at 2, P. M., the relative

humidity was but 24 per cent., and the amount of vapor but $2\frac{1}{2}$ grains, but the change from a drying north wind to a moist and warm southern breeze, and consequent increase of humidity and temperature, prevented so rapid a decline as would otherwise have followed, and we noted but 50° as the minimum before dawn on the 29th, a temperature lower than had been observed since the 19th, when it stood at 47° , except the 22d, which was also 50° .

The minima temperatures before sunrise in July of 53° , 56° and 58° , which are low for this month, were invariably observed to be preceded by very low humidity at 2 P. M. of the preceding day, as indicated by the per centage and by low tension of vapor at the same time, and at 9 P. M. of that day, and at 7, A. M., of the morning on which the low temperatures were noted, and the lower the humidity and tension, the lower the minima, other things being favorable. Thus, on the 16th, at 2 P. M., we noted relative humidity about 30 per cent., the average for the month at that hour being about 50° ; the tension of the vapor, or pressure it would alone exert in raising the column of mercury in a barometer, was but .309 of an inch, which corresponds to the pressure of about $3\frac{1}{4}$ grains of vapor in one foot of air, a proportion closely according with that of former dry spells, as will be perceived by comparison with the measures before noted. At 2 P. M., of the 17th of July, we observed about 23 per cent., the low tension or force of vapor .303, indicating the presence of $3\frac{1}{2}$ grains of vapor, and though the amount of humidity was slightly increased before 7 o'clock on each morning, yet the minimum thermometer which sunk to 53° before dawn on both the 17th and 18th, which was 16° below the mean for the month at 7 A. M., and seven degrees below the mean of the lowest temperatures observed on thirty mornings before dawn, as self-registered.

But the most remarkable of the dry days was the 22d of July, when at 2 P. M., the per centage of moisture was but 23, a tension of but .188, which at the lower temperature then prevailing, indicated but about 2 grains of vapor to each cubic foot, a lower measure than previously observed, and one-third the average of the month at 2 P. M. At 2 P. M. the dry thermometer stood at $73\frac{1}{2}^{\circ}$ and the dew-point at $45\frac{1}{4}^{\circ}$, indicating that it would have been necessary to reduce the temperature of the air to the latter degree to cause it to commence the deposition of its vapor as dew. On the morning of the 23d, the mercury sank to 46° at six feet above the earth, and some degrees lower at the surface. This dryness prevailed over a wide extent

of country,—even in Maine was recorded remarkable drought and absence of dew, and throughout the Eastern and Northern States it was attended in many places by smoky haze. The night of the 22d was at several places noted as unusually cold, and frost appeared in Massachusetts, Connecticut and Pennsylvania. On the 22d a neighboring farmer remarked to us, that he had never observed a drier day, and that his oats, which he was then cutting, became dry before it reached the ground.

On the 23d and 24th, the dryness continued, and on the morning of the latter the minimum thermometer was at 50°, but on the 25th it did not descend below 60°, a haze pervading all things, and a southerly wind having set in to bring its warmth and humidity over us to correct the dryness of the northern wind, which had hitherto prevailed. The measures of humidity immediately rose to near saturation, and the lowest temperature at night increased to 60° and 69°, or from 14° to 23° higher than during the prevalence of the drought. No extremes of dryness or of low temperature occurred again during the season of vegetable growth in 1864.

One of the noteworthy consequences attendant on this abnormal decline of temperature, was extensive injury to the Grape crop. Very soon the vines gave sign of ill-health,—leaves began to mildew, entire bunches were covered with a white fungus, which destroyed many of the berries both out of doors and under glass. The second sudden reduction and accompanying dryness came so soon upon the heels of the first, that “the struggle for existence” could not be maintained, and most of our vines gave up the contest, and failed to perfect the labor they had auspiciously begun, and we had but few out-door Grapes that reached perfection.* Now this conjunction of circumstances so unfavorable to the health of the vine, must occur at intervals of varying length in this region, but occurring as it does not unfrequently, renders the cultivation of native vines, on an extended scale, an unremunerative business. Experience of years ago has fully demonstrated that the same phenomena have occurred that we observed in 1864. Mildew brought destruction to the leaves of the vine,—the fruit remained unripened,—the buds for the following year were not matured,—the plants declined and finally died. The disheartened enthusiast retired from the field to brood over the wreck of his hopes, if not of his fortunes.

Such were the causes, among others, and these the most influential, which affected the Zollkoffer vineyard, and its fate the same, which, if its destiny deter others from similar efforts to be alike failures, will not have been attempted in vain.

Near the ocean and bay, better success has been attained. The Catawba flourishes near Absecon in a manner that leaves little to desire, as we have observed in the garden of Mrs. McClees, of Cottage Retreat, Atlantic City, in the summer of 1864, and in the vineyards of N. Hines, near Absecon, in 1863. These vines were loaded with fruit, promising great excellence, because their leaves were strong and healthy, no mildew having appeared in the region; because there had been no sudden and extreme reduction of temperature. There had been no reduction of temperature, because there had occurred no days of extreme dryness: there had occurred no periods of excessive dryness, because this ever-present ocean had restored, with every recurrence of the sea-breeze, the vapor which was needed to supply the place of whatever had been carried away by the winds which had been blowing over the land towards the ocean, and which, in our district, remote therefrom, was not, and could not, be so easily and immediately supplied.

Proximity to the ocean and to large lakes is thus favorable to fruit-growing, and the reason therefor appears to us to have been made clear from considerations connected with the presence of humidity in the air, combined, no doubt, in some instances with the retarding influences of cold waters in the spring, our reasoning is confirmed by the practical experience of fruit-growers on the northern lakes that, whenever there is the slightest breeze from the water during the night there is no frost.

The foregoing facts and comparisons appear to us to furnish strong evidence of the close connexion between diminution of humidity and reduction of temperature, and to confirm the assertion of the distinguished English philosopher that their relation is that of cause and effect, that loss of aqueous vapor continued through several days from the action of a north and drying wind during a dry season, prepares for the escape of heat from the earth by night through unimpeded radiation into space. To these influences the interior of New Jersey is exposed. That a remedy may be found by which these extremes of climate, which affect not our vines only, but also our apples and pears, can be modified, remains to be shown; but the length to which this paper has already extended will not here permit its discussion.

* The varieties which suffered least from mildew, were Clinton, Concord, Rogers' Nos. 1, 2, 4, 15, 19 and 43, Hartford Prolific, Delaware and Diana.

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Hints for August.



FLOWER-GARDEN AND PLEASURE-GROUND.

Trim hedges for the last time this season. Commence to transplant Evergreens short distances from one part of the ground to another as soon as a good rain shall have moistened the earth. The secret of successful transplanting at this season, or at any season, is not to let the roots dry for an instant. The more fibrous the roots the greater the danger from drying,—that is those trees which have generally nothing but small fibres, like the Hemlock Spruce, will suffer sooner from drying than those which have many large main roots, as the Pine tribe.

In replanting it is desirable to use soil for filling in that is nearly dry, and will crush to a fine powder; it will then fall in all around the root spaces, and the harder it is tramped or crushed in, the finer it will break and cover up the young rootlets. If the ground or weather be very dry, water may be poured in heavily, to assist in packing the soil well about the roots, letting it soak away well before filling in the remaining soil,—and putting in this soil very loosely, and without pressure, according to directions we have so often given in these pages.

In digging up trees great improvements have been made over former years. The great anxiety to save a "ball of earth" has given way to great care to save all the roots. All the use there can be to a "ball of earth" is to keep the roots moist during removal; but in most cases,—indeed in all except very small specimens,—it is found in practice that the preservation of young roots in the ball, is

at the expense of the numerous fine fibrous roots necessarily left outside. The digging-fork is now the chief tool used in digging up trees; and the distance from the trunk at which the digging up is commenced is much farther off. After a circle, 2 feet deep, is dug around a tree, a few thrusts of the digging-fork under the ball lifts the whole mass over, and the soil can then be entirely shaken away.

The latter part of August is one of the best seasons of the year to transplant Evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cold Autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being generally very warm, the trees have to be planted in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September or October is very likely,—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from soon drying out again.

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.

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.

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.

Strawberry planting often commences in August, providing the weather offers a chance. Get the soil in readiness for this chance. Heavy manuring is not good for the Strawberry except in very poor soils. Wet soils are not good. But the soil cannot well be too deep. In the field subsoil,—in the garden dig at least 12 to 18 inches. Strawberries do better moderately close than too wide, some kinds do very well in beds. French's Seedling and Wilson's Albany do well; Triomphe de Gand and most of the European varieties do well in hills.

After a piece of ground is dug at this season for Strawberries, roll it well with the garden roller. When ready to plant make holes with a dibble, fill the holes with water, and when it soaks away, put in your plant which has been kept in water to prevent wilting. *But*, in putting in the plant do not plant too deep. "Too deep" kills 99-hundredths of all the Strawberries that die in the year from transplanting. "Too deep" is when any thing but the small fibres are buried under the surface.

In the story books we sometimes see pretty pictures showing how Strawberry roots are to be "spread all around nice." A little cone is made in the middle, the plant set on the apex, and the roots running like mountain streams down the cone on every side. This is a very pretty plan, but will give us no more Strawberries. There is little romance in a Strawberry fibre. They push out, pump water into the plant for a few months and

then die. No Strawberry root lasts 12 months. New ones push and old ones die daily.

All things considered, for an amateur garden the best plan is to set the plants in line six inches apart, the rows eighteen inches apart, and every fourth row omitted, as it were, to form an alley-way between the beds; on this plan, as the plants grow, they can either have their runners cut off, or they may be allowed to go together in bed form, according to the kinds grown or views of the grower.

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 4 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 seeds 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.**PHILOSOPHY OF PRUNING.**

BY DR. JOHN A. WARDER, CINCINNATI, O.

Read before the Pa. Hort. Society, June 5th, 1866.

Having been invited before you in the attitude of lecturer, or teacher, from the comparatively new, and as yet, but partially developed region of the great interior valley of our continent, it is meet that I should acknowledge the high compliment you have thereby given to the glorious West. The tribute you have so gracefully paid to the region is one to which it is justly entitled, and my only regret is that your lecturer is so poorly qualified for

the task you have assigned him, that of representing its talents.

Western horticulturists have been accustomed to look to the venerable society of this city with mingled feelings of affection, respect and admiration, as well as with thankfulness for the benefits we have so long derived from the results of your continued and successful labors.

Towards the rising sun, as with a natural instinct, we have been accustomed to look for light, nor have we been disappointed; for to the east, and to our friends in the east, we have turned for the illumination of many dark and obscure points in the theory and practice of our loved horticulture; and from them we have often obtained the desired information—so that we have learned to respect and reverence you as our teachers; nor will ever the reputed confidence and assurance of *Young America* (which some of you may consider a leading trait of western character), overcome our diffidence when we find ourselves called upon to stand before you as teachers.

It is true the West has a soil and a climate that are peculiarly her own, and which differ in many particulars from those in which your operations are performed. Hence, in many branches of horticulture, and especially in our pomology, we have been forced to adopt systems for ourselves. After having followed the teachings of our Eastern friends, and after suffering loss from the want of adaptation of their dogmas to our altered conditions, we have found it necessary to strike out new paths in many points of practice. *Principles are absolute and universal*, but the details of execution must constantly vary with the ever changing circumstances by which we are surrounded.

So, upon the present occasion, it is not becoming for me to attempt to place myself before you, who are my superiors in the practice of the higher branches of horticulture, in the attitude of a teacher of the details of practice. The principles that are to guide us in one class of operations have been selected as the topic for the lecture, and they will be introduced under the title of

THE PHILOSOPHY OF PRUNING.

Do not anticipate any startling developments got up for effect. That is left to charlatans. A simple statement of the facts as they have appeared to me, and as they may be read by any of you, in the great book of nature, is all that will be attempted. A plain unvarnished tale is all that you need expect upon the present occasion.

Pruning is one of the most important operations

to be applied to plants, especially to woody plants. Pruning, in some sort has to be performed at all periods of their existence and growth; and upon all, from the lordly forest tree, or the fruit-bearing orchard, of whatever kind, to the humble bushes and brambles that yield us their abundant and most welcome fruits, or the trailing vine that adorns our arbors, and covers our trellises with its rich and tempting clusters of luscious Grapes. Many herbaceous plants are also submitted to judicious pruning, and yield in consequence an increased product of fruit. Our ornamental gardeners and plant-growers practice pruning most admirably upon their house-plants, and by their successful methods of pursuing the practice, they produce the most wonderful effects, in the vigor, thrift, symmetry and blossoming of their specimens, as may be seen, especially at your noble exhibitions. And yet, when we come to travel about the country, and see the shrubberies, the parks, the orchards, fruit-gardens and vineyards, as they are, we shall be struck with the great amount of ignorance or neglect which is manifested in what we every where behold! Still more shall we be surprised when we hear nurserymen and orchardists, men who have had opportunities for extended observations, and those too, who are considered successful cultivators, advocate the idea that trees should not be pruned at all. An apology may be found for them in the many instances of bad pruning that may frequently be met with—they may say that no pruning is better than such mutilation—and with some varieties they may have a share of reason on their side, since there are many sorts that will very naturally produce an open head, everywhere provided with abundant fruit-spurs, those great desiderata of the fruit-grower.

We prune our plants for the most opposite purposes. We prune to make them assume some desired form, we prune to produce symmetry, we prune to torture them as much as possible from their natural habit. Again, we prune to make them grow vigorously, at one time, and we perform other pruning operations, in order to dwarf and stunt our specimens, and to make them as diminutive as possible. The experienced orchardist will tell you to prune the barren but thrifty tree in order to make it productive of fruits, and he may also tell you to prune one still more severely, which has expended all its energies in fruit-bearing, and appears likely to exhaust itself to its own destruction. Upon very high authority, supported by universal and annual practice, the vine-dresser will advise you to prune your vine in order to make it fruitful, and he will also urge you to prune in such

a manner as to prevent over-production—he will further insist that you shall prune again during the season of growth to promote the same objects.

Thus it appears that the ends to be attained by pursuing the practice of this important operation are exceedingly diverse and apparently contradictory: nor is it any wonder that the novice should feel bewildered in the midst of directions so opposite, nor even that those who have grown grey in the orchard, should have arrived at conclusions so strange as those just mentioned,—*not to prune at all*. And yet, notwithstanding these apparent contradictions, there is a reason for each of these various modes, as well as for the different seasons, that have been recommended for performing the several operations of pruning.

It may be said that in the natural trees, whether standing alone in the midst of a prairie, thinly grouped as in the "oak-opening," or crowded together in the dense forest, we may behold the most perfect models of beauty and of fruitfulness—yet these have never been subjected to the action of the knife, the saw, nor the hatchet,—true, and yet they have all been pruned by *nature*,—she prunes and trains magnificently, and gives us the finest models for imitation, whether for park scenery, as in the lone tree of the prairie, or in the scattered groups of the island-groves, that are so often seen to rise above the level of the broad savannas of the West—or for a forest, of noble shafts, to be gazed at with admiration, then felled by the ruthless axe, and converted to man's economic uses; she shows us a pattern in the dense pineries and other timber tracts of our country. All these have been pruned into their present condition by the hand of Nature. In the single specimen, free access of air and light have enabled it to assume its full proportions, developing itself on every side, and giving us the grand majestic and beautiful object we behold with so much pleasure. The winds have tossed its branches and shaken its sturdy boughs—some have been broken in the rude embrace, the lower ones have quietly and gradually yielded to the smothering influence of those above them, which, in turn, have swept downward their depending branchlets toward the green turf beneath. In the groves, the scattered trees have for a while enjoyed the same opportunities for development, but at length their branches have met together and interlocked in friendly embrace. Those that were nearest the ground had already begun to suffer from the effects of the denser canopy above them, but the great sturdy boughs that had shot upward so as to form a part of the crown, these are able to maintain

their vantage ground, and continue to be important members of the trees. In these illustrations we have seen more of Nature's training than of her pruning, but it must be remembered that training is one of the objects, and indeed a leading element of pruning, and is very properly a matter for our consideration.

In the dense primeval forest we see Nature's pruning exhibited upon a grand and perfect scale: tall, straight and noble trunks rise majestically on every hand; not a twig nor limb appears to break the symmetry of the gradually tapering shafts, that are clothed in bark which does not indicate that they had ever been furnished with branches: and yet they have been so provided from their bases to their summits, and Nature has so neatly removed them that we cannot detect the marks of her pruning saw. How this has been effected may be seen in any dense thicket of forest growth. It is simply a smothering of the lower branches by those next above them, which has destroyed their vitality, and their decay has soon followed; while a new growth of branches at a higher point, in turn performs the same office of destruction upon those next below them. As there is no outlet for the wood-growth but in an upward direction, so upwards they must needs go, and as there is no light nor air for lateral branches under such a canopy of shade, death and decay ensue, and down these must needs come.

If it be asked why we must prune, it may be answered, in general terms, that in the orchard, our objects in performing this operation are two-fold. 1st. We prune for shape and comeliness, and for the removal of dead and dying branches, in aid of Nature, but working in sympathy with her. 2d. We prune for the sake of inducing fruitfulness:—let us consider some of the principles that are to guide us in these operations.

The first object, that of producing the desired shape of the future tree, is chiefly done upon the young subject—even in the nursery row. The judicious pruner, being well aware of the upward tendency of young growth, and that this is increased by the crowded condition of the tree in the nursery square, seeks to overcome the evil by proper pruning. If the growth be altogether upward, with no side branches the first season, the stem will be slender, often so much so as to bend with its own weight. The wise nurseryman carefully avoids disturbing the leaves or the lateral branches, well knowing their importance in forming the woody trunk. At the proper season he trims his trees down instead of trimming them up; this he does by

heading them back to the height at which he desires them to form their branches—at the same time he shortens in the laterals, his object being, in both instances, to check the upward tendency of growth by removing the strong terminal buds which would naturally have formed the new shoots the coming season. The result of this treatment is to call into action several buds at the upper part of the stock. These are to form the arms of the tree, and hence, a very important part of the pruning and training of the plant is thus performed at once by this heading-back of the young nursery tree. But further attention is needed as these arms develop themselves during the next season of growth; they should not be too numerous, nor too much crowded together; they should not be too nearly matched in strength; and a single one among them, centrally situated, should be kept as a leader, which should be stronger than the rest. Never allow two shoots to remain, contending for the mastery, but subordinate one of them by cutting, breaking or twisting, so soon as it is observed, for, how beautifully developed soever such a tree may appear when well balanced, there is always danger of its splitting down when heavily laden with fruit. This very common error of our orchards used to be quaintly illustrated by a dear old friend on the prairies of Illinois, who cited the advice of a Scotch jockey to whom he had applied for counsel in the purchase of a piece of horse-flesh. "Ne'er buy a horse whose twa fore legs coom oot fra ane hole;" said he, and my friend Mr. Stewart applied the same rule to his young fruit trees by never allowing them to form two equal leaders starting from one point. It is also important to have the lateral branches regularly distributed on different sides. The height at which the heading-back should be done will depend very much upon the object of the cultivator, and whether he desire to produce a high or a low head—a standard, half-standard or a dwarf or a conical tree, such as are often called pyramids. He will study the wants of his customers, and will flatter their fancies in this matter; but we of the West, have learned the importance, for us at least, of trimming our trees down and not trimming them up, as is often done by those who anticipate plowing and planting crops under the shade of their orchards. We prefer low heads and often train them so that the branches reach the ground when laden with foliage and fruit. The proper point for bringing out the branches, and forming the head will very much depend, however, upon the habit of the variety, whether it be drooping, spreading or

upright—the former will require the branches to be started at a higher point.

The proper season for performing this kind of pruning is in the early Spring, after the severe frosts of winter have been passed; and with some kinds of orchard trees, at the time of planting, when they should always receive a severe pruning and a reduction of their limbs, somewhat in proportion to the shortening of their roots.

The second object of pruning being to promote fruitfulness in the trees, it should be done chiefly in the summer, or during the period of growth. At the same time, or during the growing season, much may be done to advantage both in thinning out and shortening-in such parts of the tree as may need these plans of treatment. Various methods are pursued to produce fruitfulness, all of them depending upon the fact that this condition arises from the natural habit of the tree to make its wood-growth very freely for a series of years, and then, while the growth by extension is curtailed, to take on that wonderful change by which the wood-buds are transformed into those that expand into flowers and produce fruit. The study of these changes is called morphology, and when the tree has reached this condition, it is said to have arrived at its maturity.

After the tree has built up a complicated structure of limbs and branches, with some consequent obstruction to the flow of sap, dependent upon the hardening of the woody tissues and contraction of the cells, as well as upon the tortuous course of its passage, it appears to reach its maturity, and to come into bearing condition. It ceases to make such free wood-growth, and prepares a set of buds which develop flowers and fruit.

Now this period of growth and unfruitfulness may continue for a longer or shorter period in different varieties of fruits, and the curtailing of this period is the great object of the leading operations of summer pruning, and of other methods of producing fruitfulness that may be classed with it under the second head of the objects of pruning.

To appreciate their importance and the mode in which the effect is produced, we must bear in mind the two great acts of vegetable life, the production of wood and that of fruit, the one, multiplying the associated buds or plants that make up the community of buds which constitute the tree; the other, producing the germs of new plants that are to be separated from the organism, and which are prepared to set up a separate existence. These two acts are in some sense antagonistic. The first is essential to the production of timber, to the

building up the tree, and should be encouraged to do its work undisturbed, to a certain point, that we may have a substantial frame-work by which our fruits can be supported. The latter, however, is the ultimate desideratum with fruit-growers; and in our impatience to reap a quick reward, we often resort to measures that tend to curtail the usefulness, size and beauty of our trees, as well as their performance. This is an illustration of the axiom, that whatever threatens the vitality of a plant tends to make it fruitful,—calls into activity the instinctive effort to perpetuate the species by the production of seed that may be separated from the parent, and establish a distinct existence to take the place of that, the life of which has been threatened.

The operations of summer pruning and pinching constitute an interference with the growth by extension and threaten the life of the tree. The entire removal of all the new shoots and their foliage, and the repetition of this operation upon the successive attempts at their re-production by the tree will cause its death in a little while,—their partial abstraction as practiced in these operations of summer pruning and pinching being an attack of the same kind in a smaller degree, results in the formation of fruit-buds. The operations of budding and grafting upon uncongenial stocks, interrupting the circulation of the sap by ringing, by ligatures, by hacking, twisting, and bending downward, all tend to the same end,—they check the growth by extension,—they interfere with the wood-growth, and they are attended by similar results, since they are antagonistic to the mere production of wood, or to the growth of timber. Shortening in the branches of some species, which form their fruit-buds upon the shoots of the current year has the effect to give them a fuller development if performed at the proper season, but if deferred to a later period, this process will have a directly opposite result, and will cause an increase of the wood-growth, at the expense of the flowers and fruit.

The reason for pruning has been made the subject of much discussion, and different periods have been advised with great confidence by different authorities. From this diversity of views it may be inferred that all are somewhat right, or may be supported by good reasons. This refers, of course, to pruning in its general sense of *trimming*, and applies to the removal of limbs of greater or less size. We always desire to avoid ablation of large limbs, and we should endeavor to provide against the necessity for their removal, as much as possible,

before their production, by a proper thinning-out of the branches in the young tree, taking them away when they are yet small; but when such removal becomes absolutely necessary, from their decay or injury, the operation should be performed late in the autumn, when the tree is at rest, and the circulation almost null, because it is found that such large wounds, which cannot be healed over by the deposit of new growth will, if formed at this season, dry-in, and resist the action of the elements better than if the section had been made when the wood was full of sap.

Mild winter weather, or the early spring time, is a favorite time for pruning, because it is comparatively a period of leisure, the absence of foliage affords us an opportunity to see the work before us and to anticipate its effects upon the configuration of the tree. So soon as the buds begin to swell, and the foliage to expand, pruning should be arrested, unless in small trees, because the sap is in active motion, and the material called *cambium* is not yet developed; hence, the wounds will bleed, and are not so readily healed over; besides, the bark at this season is very readily separated from the wood, and bad wounds are thus frequently produced by the pruner, which may seriously damage the tree. Then comes a period when pruning had better be suspended, until the time the trees have completed their growth by extension, and formed their terminal buds at the ends of the shoots. The precise date cannot be given, but it is indicated with sufficient accuracy by this mark in *Nature's Calendar*,—the formation and full development of the terminal buds, and by the copious deposit of woody matter throughout the tree; the annual layer of fibres is then being produced, and the tissues are in the formation stage; the tree now possesses, in its own organism, the best of all plasters to cure and cover the wounds made by the saw and knife, it now possesses the true *vis medicatrix naturee* in the highest degree.

A few intelligent nurserymen have learned this very important lesson, and have applied it in the preparation of their trees for the exposure incident to their removal from the nursery to the orchard. A very few of them practice it systematically. I knew one, (alas, for the lamented Beeler of Indiana!) who acted upon the suggestions made to him by observers. He preserved the side branches, though subordinated by shortening when necessary, in order to give stocky stems to his trees, and afterward he removed these with the knife during the summer, before they were to be sold and planted,

instead of waiting to perform this trimming up, until they were dug and sent to the packing shed, in the Fall or Spring. The result was, that while his stems were stout and stocky, they were also smooth, the wounds were neatly healed over with new bark, instead of being open from the fresh cuts and liable to crack or bleed, as they would have done, had this pruning been deferred until after digging either in the Fall or Spring. Others may have done the same thing; but you all know that the trees you receive are not possessed of the desirable characters in these respects. To some this may appear a small matter, but it is introduced as an illustration of the principle involved in selecting the period for pruning.

For the removal of small limbs from young trees, hardly any time can come amiss. 'Twere better to do it out of season than to neglect it; and it is a good rule to have a sharp pruning knife always at hand when passing among our young orchard trees. There is but one time when pruning should be absolutely interdicted, and that is all the time that the wood is frozen. When so circumstanced it should never, on any account, be cut or disturbed or handled in any manner, not even to gratify your best friend by helping to a few grafts from your tested tree of some coveted variety. Let him wait for a thaw, or go away without them, rather than commit such an outrage upon your tree as to approach it when frozen.

While considering the question of the proper season for pruning, there is one axiom of great importance which should be firmly impressed upon the mind of the orchardist: Much will depend upon which of the two leading objects he may have in view,—vigor of growth and symmetry of form, or simply fruitfulness, as the result of his labors in pruning his trees. Pruning at one season will induce the former effect; at a different period of the year, the same work will conduce to the latter results. Hence, the value of this postulate, which is pithy and easily remembered. **PRUNE IN WINTER FOR WOOD,—IN SUMMER FOR FRUIT.**

Here my limits have been reached, though the subject opens and expands so wonderfully, and to the devotee is full of interest, that there appears to be no stopping place, unless, like the vine-dresser, with a rampant cane that has exceeded the limits of the trellis designed for its support, the pruning knife be applied and the story be headed off.

And, my friends, I fear your patience will have been exhausted, and you will have been wearied by the enunciations of these truisms, which must be familiar to you all. The subject selected is one

of such great extent, and the illustrations of the principles involved are so numerous, that it has been difficult to make a selection to present to you. I beg you in closing to be considerably kind in your criticisms upon this paper. While it contains nothing new, it embraces perhaps the enunciation of some principles to guide our practice that do not appear to be generally appreciated, nor even recognized by a large number of our fellow-countrymen and fellow-laborers in the orchard.

May every success attend the devoted labors of each of you as individuals, but especially may your noble Society continue its glorious course, diffusing the light of Horticultural intelligence upon all within the range of its influence.

STRAWBERRIES.

BY G. HOWATT, TARRYTOWN, N. Y.

The past year your readers and correspondents seemed to me to have had Strawberry on the brain. I suppose it descended to the Strawberry each one praised. Each, with perfect confidence, thought his variety as the best; which reminds me of my school days, and of the Traveller and Chamelcon and his color, where all were right and all were wrong. I would just impress on your readers that the Strawberry is generally a local fruit; that is, a variety that will succeed well in one locality will not do so in another; and, in fact, be a total failure, which I have proved to my cost, and will illustrate points in fact: Thirteen years ago I moved to Pittsburgh, Pa., to lay out and manage a Company place. Hovey's Seedling was then the universal Strawberry here. Market and private gardeners told me there was no use trying it there, it would be a failure. I could not see the philosophy of that, (I soon did, though.) I purchased eight hundred dollars worth of plants,—had my ground all prepared in the best possible order for their reception. The spring being a very dry one, it cost us a good deal for watering. Plants grew as fine as I ever saw plants grow, and I anticipated what a fine paying crop I should have the following season, they receiving the very highest cultivation during summer. Fall and following spring they flowered, but no fruit: I do not think that there were half a dozen fruit on the whole lot. I would not remove them,—tried them another season, with the same result. I imported a quantity of British Queen from England, and the result was the same as Hovey Seedling. Mr. Lowen, a prominent grower there, got the Bieton Pine, a fine, large, white fruit, vigorous grower, and a fine bearer, and excellent

flavor; the fruit stem the strongest that I have ever seen on a Strawberry; I carried them as a bouquet. When I left there to take charge of a new place in N. Jersey, I had sent to me a few thousand of the Bicton Pines, intending to grow it nearly altogether. I failed as completely in growing it in New Jersey as I did the Hovey's at Pittsburgh. I can also state that the Triomphe de Gand and Wilson's Albany does not do in northern New Jersey, Russell's Seedling and La Constant being ten to one more prolific. I was not the only one; a gentleman of my acquaintance expended on an acre of land over one thousand dollars to make Hovey's grow there, but he failed, Buist's Prize being the only Strawberry that did any thing extra there. I may here remark that I have travelled over England, Ireland and Scotland, and seen what I thought fine Strawberries, but I must say, that the finest grown Strawberries I have ever seen are grown at Pittsburgh. It would well repay a visit in Strawberry time. I would advise those putting out new Strawberry plantations, not to mind this or that one's best for a permanent plantation, but to plant out the first season a row of each of the best sorts in market. Give all the same culture and attention. Mark their progress, and the best yielders, discard all the others, and you are then sure you are right; you lose a year by it. You had better do that than lose your money, time, and particularly the mortification of being laughed at, as every man's ware is the best in selling.

Pistillate and staminate you want to mix, but not to the extent that is generally supposed; but this question has been more ably discussed by Mr. Meehan than I could attempt to describe it, during his controversy with the wise ones on pistillate and staminate, years ago. I took no part, knowing his ability to handle it, at their Convention. I do not see how they came to their conclusion.

In planting, select new ground, if possible, for your Strawberries; they yield much better, and are of a better flavor. I plant in rows, three feet apart,—plant six inches apart in the rows,—open rows with a heavy plow,—furrows thirteen inches deep, (run twice in each furrow), put in four inches or five of manure, cover over with the plow, and take the top clean off,—apply two tons of coarse bone-dust to the acre. This bone-dust must not be all charged to account of Strawberries, as it is a manure for all after crops. Spread and harrow it in. I plant generally in the fall, as the ground is in better order than in the spring, and other work not so pressing. After planting, water well once. Before winter closes cover your plants with leaves

or straw,—just sufficient to keep the sun off them, as it is that, and not the frost that hurts them. Plant middle of August; this gives your plants a hold before winter. In the spring use a small plow between the rows, keeping the land side next the plants, and then split the middle. When done run a cultivator through to level them. By planting in the fall you have a partial crop the following summer. Now comes the great *secret* of Strawberry culture, and I assure you, if not attended to, that Strawberries *will not* pay even at fifty cents a quart. Keep all the runners off and the ground clean. If you do not attend to that, don't attempt Strawberry growing, and tell us that it *won't pay*. To save you trouble and anxiety before you commence, if you allow those things (runners and weeds) to take their own course, even partially, you will lose many by the operation. Second fall give them a dressing of manure, and plow it in. Do not cover your plants with straw or leaves. In spring plow and cultivate same in every way as last year. Attend to this particularly, and your bed is good for four or five years, or even more. If you want to raise young plants for a new plantation, plant out a lot of plants the same distance apart as your fruiting bed,—apply your manure broadcast, six inches deep,—dig or plow in,—nip out all flowers that appear. When your runners are rooted, take them off,—plant out in rows eighteen inches apart, and plants six inches apart. Adopt this plan, and I assure you, when you make your new plantation it will pay, as those will be plants worth attending to, and if for sale, you will easily dispose of them at your own price, they being the right looking stock to work from; not as they generally are, planted from the fruit bed, with two or three leaves, and about as many thread-like roots.

UNFRUITFUL PEAR TREES.

BY DR. J. S. HOUGHTON, PHILADELPHIA.

There is a question in Pear culture which I have never seen discussed, as to the cause of unfruitfulness in certain pear trees which often blossom very freely, and yet never set or perfect much fruit.

One of those unfruitful varieties is the Duchesse d'Angouleme, which often show a very profuse and promising bloom, but sets very few pears. I have been led to inquire whether this is not in consequence of an imperfect condition of the blossoms? Whether they are not either too intensely staminate, or deficient in the pistils, or defective in all respects. If the pistils are perfect and the stamens defective, could not the blossoms be im-

pregnated by growing some good staminate blossoms or grafts on the same trees, or by growing some other free blooming pear near them? From the examination that I have made of the Duchesse blossoms, I have been impressed with the opinion that they are deficient in pollen; but it may be that they are defective in all respects. Certain it is, that in thousands of Duchesse trees on my place, the bloom is generally remarkably profuse and fine, while the crop is altogether too small.

Some persons are apt to say, that pear trees exhaust themselves by blooming so profusely; and hence, do not set their fruit well. But this seems scarcely reasonable, for the blossom buds are formed during the preceding season, and do not appear to exhaust the trees, while the effort of merely expanding the buds with blossoms, (lasting only five or six days), can hardly be a very exhausting process. If it were so, the foliage, which expands immoderately afterwards, would look sickly, and the wood-buds would not grow, which is never seen to be the case, for the foliage always comes out strong and green, and the new wood-shoots grow with great rapidity and luxuriance.

I think careful attention should be given to the blossoms of pear trees, to see if they are perfect in all their parts, and fully capable of setting the fruit.

In the case of Strawberries, great attention has been given to the nature of the blossoms, and with manifest advantage.

I think the pear blossoms should be examined under the microscope, or with powerful lenses, by skillful botanists, and the question respecting their fertilizing power settled for the general information of the people.

A tree may be unfruitful because it does not readily produce flower-buds; but that it should be unfruitful with thousands of blossoms upon it, (unless injured by frost,) certainly demands investigation. The Duchesse d'Angouleme is remarkable for unfruitfulness under these conditions.

TWELVE WHITE HYBRID PERPETUAL ROSES.

BY CHARLES CRUCKNELL.

Rosarians often complain of the want of white Roses. I herewith send you a list of twelve of the best, most of them being *true perpetuals*, blooming without intermission from June to frost. Several of them are unrivalled in regard to the matchless beauty of their flowers; and what is more important, may possess a healthy persistent foliage.

Blanche Virginia is one of the newest, and is undoubtedly the most perfect white Rose in cultivation.

Madame Chapet.—Bluish white.

Madame Rivers.—Pale flesh-colored, white.

Hiortense Blanchette.—Rosy-white, cupped and double. One of the best.

Lady Emily Peel.—White, with a band of carmine round the edges of the petals.

Madame Alfred de Rougemont.—A strong growing variety. Color white, shaded with rose; flowers in clusters. One of the most profuse bloomers.

Mademoiselle Bonnaire.—A splendid strong-growing variety. The young wood pale green and thickly covered with thorns, has very healthy foliage, and is one of the finest bloomers; color pale; flesh changing to the purest white.

Virginal.—Color blush white, resembles very much the flowers of *Souvenir de Malmaison* both in form and color. We have measured buds two and a half inches long, and when fully expanded presenting a magnificent appearance. A continuous bloomer from June to frost.

Imperatrice Eugenie.—Another free-blooming, creamy-white rose, with good foliage. An excellent addition to the list of Whites.

Sœur des Anges.—Color blush white; a profuse bloomer.

Louise d'Arzeus.—Flesh-colored, white; a very free-bloomer.

Madame Freesman.—An irregular petaled rosy-colored, white. A profuse flowering variety; an everlasting mass of bloom, and although not so perfect in form, nor so pure a white as some, yet its prodigal habit of flowering, will make it a general favorite among those who love the "Queen of Flowers."

SILAS WHARTON.

BY C. L. JANNEY, WAYNESVILLE, OHIO.

I notice in Wm. Heaver's "Recollections, &c., of Pears," that he is laboring under a mistake as to Silas Wharton's nativity. He was born in Bucks County, Pa. His parents were Nemiah and Elizabeth Wharton. He married there, and moved to this county (Warren) in 1810. When he arrived here he had but three dollars in his pocket,—settled in the woods, with the wolves howling around him and his family. I have often heard him say that was the most trying time of his life. He commenced clearing the timber from the ground, and in a few years he had sufficient farming land to sustain his family. I don't know the year he went

into the nursery business. But soon as he established himself in that business, there became a great demand for fruit trees. Then prosperity began to smile on him. The demand continued to increase so fast for trees, that he established nurseries at the following places: With James Rifner, Cincinnati; James Brelsford, Montgomery County, Ohio; Nathan Linton, Wilmington, Ohio; Andrew Hamton. I have forgot the location of this one. Marshall Bellbrook, Ohio, and one in Indiana. The location I have also forgot. And his home nursery, in which stands several Seedling Pear trees, that will stand as monuments to his memory, for a long time to come.

He stood very high as a Pomologist in this State. His trees were distributed far and wide. He died Spring of 1858, aged 83. Was a member of the Society of Friends. Was a kind father, a good neighbor, an honest man, and had his peculiarities, as well as other mortals.

GROWING GRAPES CHEAPLY.

BY JAMES THOMPSON, GARDENER TO WM. RESOR,
CLIFTON, NEAR CINCINNATI, OHIO.

I am glad to see Mr. Lamont take his pen on the Grape subject, as I know him to be a first-class practical gardener. But I think the question for this country is not how to shade Grape houses, but how to grow plenty of hothouse Grapes cheaply. Now a large curvilinear house, with inside borders, and a steam engine to pump water, and then shade the house, as they do at Mr. Zug's, is very well where great perfection is aimed at, but is not the plan for the million.

I don't think it matters much whether a span-roof or a lean-to is used, only don't have it too steep, and have the borders for the roots outside, and don't stop the shoots too near the bunches,—no nearer than six leaves. Use the knife as little as possible, but employ the finger and thumb freely, and use plenty of sulphur,—on my employers' plan; that is, five pounds at one time, sown broadcast through the house and on the vines. We used ten pounds last summer for one house, commencing when the Grapes were as big as peas, and the mildew was just appearing, but that killed it, and I never saw either mildew or spider all summer.

ROSES AND ROSE CULTURE.

BY JOHN SAUL, WASHINGTON, D. C.

Read before the Pa. Hort. Society, July 3d, 1866.

In the few remarks I am about to offer before

your Society, I shall be as brief as the subject will admit,—it being, I presume, more the intention of the Society to bring out prominently some principal facts in Rose culture, or the family of Roses, rather than any lengthy essay, I will, therefore, leave altogether the history of Roses, and proceed at once to the subject, and will take up some of the principal classes or groups in the order in which we usually find them.

Let us take up the catalogue of any extensive Rose grower, we shall find, on examination, it is divided into two principal sections,—one being that of summer Roses, and the other Perpetual or Everblooming. The former we shall pass over,—for, though it embraces some of the finest flowers of June, yet are so ephemeral that they find few cultivators in this country. Probably the cause is this: blooming in our hottest season, their beauty may be said to be that only of a day; whereas, in the cooler parts of Europe they continue some time, and are there the finest Summer show Roses. Perpetual or Everblooming, on the contrary, are our great favorites, blooming as they do, from middle of May until frost is upon them.

In no other flower has the Florist effected so much improvement as in this. If we glance back only a few years, we shall find that all these classes of Everblooming were unknown, but by carefully crossing the summer Roses,—Provence, Gallica, Damask, &c., with a few Eastern sorts, especially the Rosa Indica, the result has been varieties and classes possessing, in a great degree, not only the free-blooming qualities of the latter, but where its blood is most apparent, we have also its delightful scent.

HYBRID PERPETUAL OR REMONTANTS.

This is without doubt the most popular class in our more Northern States, as well as the cooler parts of Europe, as they are chiefly good growers, with finely formed, rich flowers, and for the most part, very fragrant. Many, however, are any thing but Perpetual, and the name is not well applied; they may more properly be called continuous or occasional bloomers, their distinguishing characteristic being the production of occasional bloom; that is, as the plants grow during Summer a portion of the shoots are terminated with bloom, from their first and general bloom in May until arrested by cold.

In passing, I would remark that, if all strong watery shoots were stopped during Summer, and as soon as bloom is over, those shoots shortened back, more flowers will follow. In this class are grouped together varieties of the most opposite

characters, some of the largest and finest flowers, like Lord Raglan, are notoriously poor bloomers. Such varieties are closely hybridized with the Gallica, Hybrid Bourbon, Damask, &c., and carry in them a great percentage of their blood; whilst the strain that approach the Bourbon, Indica, Tea, Noisette, &c., possess also their sterling good qualities of free-blooming.

It has been proposed by some Florists to split up this class into several,—such as Hybrid Perpetual, Bourbon Perpetual, Noisette Perpetual, Pomponé Perpetual, &c.; but unless this is very carefully done, (and it is not carried too far,) it may lead to still greater confusion.

In the latitude I write, this class is perfectly hardy, and are well adapted to the flower garden during summer. They also force admirably, and for blooming in pots in Spring no class excel them.

BOURBONS.

The parent of this group, "Rose de Lisle de Bourbon," is said to be an accidental seedling which originated in the Isle of Bourbon. Like the Hybrid Perpetuals, they are very variable in their growth. Some are extremely vigorous in growth, blooming in immense clusters. Such have been crossed with the Noisette, and have the distinguishing characteristic of the class, vigorous growth, with large clusters of bloom,—whilst those of more humble growth approach closely to *Rosa Indica*. Many of these latter have the highest and richest colored flowers in cultivation. Beautiful as this class undeniably is, it has not kept pace in this country or Europe with the more popular Hybrid Perpetuals. As a class, it has one great defect,—nearly all the varieties are scentless, or but at most, very faint. They are not, as a class, as hardy as the Hybrid Perpetuals; still, with a moderate covering will withstand our coldest winter. The vigorous growers are our very first Perpetual climbers, the dwarfer sorts for bedding-out during summer, or pot-culture. All are most profuse bloomers.

NOISETTE.

We are told that this class was originated in Charleston by a nurseryman of the name of Noisette, being the result of a cross between the Musk and old China,—"*Rosa Indica*." The new race, like one of its parents, the musk, was luxuriant in growth, with immense clusters of bloom; but in the varieties added to this class of late years, the original type,—immense clusters of bloom,—have disappeared, and a new race,—indeed, a distinct class,—have taken their place,—what may be called Tea Noisettes,—as they have been closely crossed

with the Teas. Nearly all the fine Roses that have been added to this class of late are of this character,—such as Cloth of Gold, Triomphe de Rennes, Celine Forestier, and that glorious new Rose, "Marechal Niel." The vigorous growing varieties are quite hardy and suitable for climbing,—whilst the Tea Noisettes make splendid plants for the flower garden, requiring protection only against severe colds.

TEA-SCENTED.

What the Hybrid Perpetuals are to the North this deliciously fragrant class are to the South,—with the addition of the Tea Noisettes, their most valuable Roses,—blooming from early, and that continually until frost finally arrests their flowering. Here frost rarely destroys totally,—killing the tops and young growth only; but on the return of fine weather the plants break out with great vigor. The prevailing shades of color in this group are light,—such as white, cream, light yellow, blush, &c., embracing among them the most delicately beautiful Roses, whilst their fragrance is beyond an approach even among Roses. We are now getting into this class some very vigorous growers, such as "Gloire de Dijon," the result of crossing with the Tea Noisettes. For pot-culture, forcing, &c., they are invaluable.

SELECTING AND PLANTING.

In selecting Roses much will, of course, depend on taste,—some preferring large, finely shaped flowers, and as a consequence, will select from the Hybrid Perpetuals; others will, again, give preference to the delicate and deliciously scented Teas. These last, as I have already hinted, are very suitable for the South, and all warm localities, whilst the vigor and hardiness of the former recommend them to more northern latitudes and colder soils, though they succeed with equal beauty in the sunny South. In planting out, the Rose is very accommodating as to soil, preferring, however, a firm loam or clay, though I have seen them grown near this city in very sandy soils. On these soils, however, they succeed much better on Manetti than on their own roots; but in preparing all soils the ground should be well dug, liberally manured, and, of course, free from moisture. Spring is the best time for planting.

WHAT TO PLANT—ON THEIR OWN ROOTS OR BUDDED.

The question of budded Roses, or Roses on their own roots, to me is easily disposed of. If the party planting is an amateur, who either does not know a Manetti sucker from a branch, or knowing

it, will not see to its removal at the proper time. To all such, I would say plant no budded Roses; they will be sure to lead to disappointment, as the suckers will soon take the place of the plants. I would, however, impress upon this class of persons the advantages of planting none but vigorous growers, avoiding the more delicate kinds. If not well acquainted with Roses, they had much better leave the selection to a nurseryman, as many of our finest Roses are notoriously bad growers; and others of delicate constitution requiring the assistance of the Manetti. But where the planter fully understands the treatment of budded Roses, and is willing to give it, then I would say take Roses on Manetti. True, many vigorous kinds will succeed well on their own roots, but even those are assisted by the Manetti Stock, whilst many of our very finest Roses cannot be grown to any degree of perfection without. On this stock it matters not how hot and dry the weather, my Roses grow with the greatest vigor, and bloom in the greatest profusion. On this stock they appear proof alike against intense heat and drought,—the ground in which they are grown being, of course, in good order,—whilst, under similar circumstances, many on their own roots will drop their foliage and cease blooming.

In the more Southern States Tea-scented Roses succeed admirably on their own roots. Where the tops are destroyed by the cold of winter, they break out in Spring with redoubled vigor, the root rarely perishing. But north roots, as well as branch, would be destroyed by cold; and in all latitudes where such would be the case, they had much better be grown upon Manetti. On this stock on the approach of winter the collection of Teas may be lifted with as great facility as a collection of Dahlias or Tuberoses, placed in a cellar or any place where they can receive protection, to be returned to the garden at the opening of Spring,—the roots shall, of course, require to be covered with sand or mould during winter. Grown in this way they sustain no injury from the removal; on the contrary, they are benefited, the frequent removals having a tendency to induce fibres, whilst the plants can be thoroughly examined before their return to the garden, and the rudiments of all suckers taken off; here they will grow freely and bloom, superbly. I may be asked why not move them on their own roots? To this I answer,—Roses their own roots have not the amount of fibres, which a Manetti stock has. Hence, the risk of loss is greater,—indeed, the percentage of loss is considerable when on their own roots, and they will

not take to their new situation with the vigor of a Manetti.

For increasing new Roses on their introduction it is invaluable. With the assistance of this stock the nurseryman, by grafting or budding, can multiply the new varieties with great rapidity, offering his plants in a short time, and at a moderate rate; when, had we to wait for their more slow propagation by cuttings, we could not have the same amount of stock.

RAISING STOCKS, BUDDING ROSES, &C.

Propagating Manetti Stock is a simple operation—take your Manetti shoot and cut it in pieces about 9 inches in length, plant in the Fall or opening of Spring in the same way as Gooseberry and Currant cuttings,—here they are allowed to grow for the first year, after which they are taken up, prepared and set out for budding; we prepare them before setting out by trimming all eyes off the stock, save two or three on top—this is a great preventive of future suckering. In planting, the bottom of the cutting is not set in the ground over half an inch, but the soil is drawn up about it with the hoe which is allowed to remain until budding time, when the soil is leveled down and the bud inserted as near the base of the stock as possible; grown in this way few suckers will follow. The ground in which to plant out your stocks for budding is of considerable importance. At one time I was in the habit of planting my Manettas on rich ground, but I soon found it was not the most desirable, here they grow freely and require to be budded before middle of June, after this date, when the plants had become luxuriant and the sap thin and watery, few if any buds would take:—for some years I have planted them in my poorest and shallowest ground, in this they grow more slowly during our hot weather, the wood is at all times firm and fit to bud from middle of May to the first of October.

I will here copy a few remarks of mine on budding, written some years since, for a different climate; but fifteen years experience in the latitude in which I write confirms me in the belief that they are equally applicable here.

What is the best weather for budding? I am told damp, cloudy weather is. How often would such a question, asked by an amateur, obtain such an answer? How startling, therefore, to him to be informed to the contrary! Why he has seen it recommended in books! Yes nothing more generally recommended than damp, cloudy weather for budding! To say bright, warm, sunny weather is best, provided the stocks are in proper condition, will sound like heresy; extensive experience, however,

tells me such is the case. I may be asked why? And I would answer that in warm weather the sap is more gelatinous; and the bud on being extracted and inserted in the stock quickly, properly tied, &c., soon takes. On the contrary, in wet, cloudy weather the sap is more thin and watery, and the bud will not unite so freely. To this we may add that a fall of rain—likely in such weather—after the buds are inserted, will fill up the incision, and thereby rot and perish the buds before they have time to unite with the stocks; dry, warm weather is the very best for budding.

PROPAGATING BY CUTTINGS.

Propagating by cuttings is so well understood that it is not necessary for me to say much under this head,—cuttings from out-doors taken off in September will root readily in a cold frame. From plants grown in heat they will root with great freedom any time during Winter and Spring in moderate heat, and if bedded out in May make fine plants the same season.

ARTIFICIAL CULTURE OF THE PEACH.

BY DR. JAMES WEED, MUSCATINE, IOWA.

It is now definitely understood that throughout a large portion of the densely populated region of the Northern States, the Peach, Apricot and Nectarine are not generally successful in open culture.

In many parts the usual cold of the Winters is so extreme as to leave little or no hope of the fruit even though the trees seem to flourish for a time, in others, more congenial, the fruit-buds together with the layer of new wood of the past season's growth, over the whole tree, are occasionally killed by the intense cold, causing the trees to be short lived; and when so fortunate as to escape injury from the Winters, the crop is liable to be destroyed by frost or other unfavorable climatic conditions at the period of inflorescence.

These discouragements, occurring so repeatedly, turned the attention of cultivators to their artificial production.

The Peachery—a glasshouse with means of fire heat—is an old method involving much cost, but with the advantage of producing what are termed "*forced peaches*," in advance of the natural season.

The Orchard-house—we believe first successfully advocated not many years ago by Mr. Rivers in England—a simple glazed structure without fire-heat, naturally engaged the attention of our amateurs, as the means of securing the uniform production of this most delicious and indispensable fruit.

With the first attempts at orchard-house culture,

in this country, Mr. Hovey, of the *Magazine of Horticulture*, while he afforded his readers all the information to be obtained from foreign periodicals of their success in England, constantly predicted their want of adaptation to our climate. His arguments were, that a simple covering of glass, unless the house should be made very tight and capacious, was an insufficient protection against the extreme cold so liable to occur in our Winters, and that from the greater attitude of our Winter's sun, it was difficult to prevent too great an accumulation of sun-heat in mild weather, stimulating the trees too much; hence he recommended that to be satisfactory they should be well built, and be provided with a heating apparatus, which was in fact the old *peachery* or forcing house; but if not wanted for forcing, a cellar or shed for Wintering the trees was quite desirable, when in Spring the glazed covering, with means of fire-heat in very unfavorable weather would ensure success and afford the proprietor not only choice fruit, but much pleasure and satisfaction.

In some prefatory remarks to a paper on orchard-houses from the *Gardener's Chronicle*, in the June number of his Magazine, he says: "The loss of the Peach crop for the present year will naturally turn the attention of lovers of this delicious fruit to the orchard-house as the simplest and surest plan of insuring an annual crop of fruit. * * In this way success is made certain, and we advise all who desire to have Peaches, to cultivate them in the orchard-house."

Mr. Hovey is high authority on this subject. Does he wish his readers to understand him as recommending the old peachery or forcing-house "as the *simplest* and *surest* plan of insuring an annual crop of fruit;" or a simple glazed structure with cellar or shed for wintering the trees, and a sheltered border for maturing the fruit in open air after all danger of Spring frosts has passed?

"The orchard-house" has become a popular term, and it is important that it should have a definite meaning. We use the terms "vincery" and "cold grapery," and a definite and important distinction attached to the ideas conveyed. If writers would say the *hot* orchard-house or the *cold* orchard-house, they would impart definite knowledge, and not fail to be clearly understood.

In connection with this recommendation of orchard-house, he says,—"M. H. Simpson, Esq., is trying the novel, or Dutch plan, of training the trees horizontally on a low, flat trellis, covering them with straw or hay a foot thick, to prevent the severe freezing of the buds. This year Mr. S.

informs us the trees look very promising, and full of perfectly developed buds and blossoms. But this, as he admits, is a laborious process."

Another important disadvantage of this mode of protection is, that they are not easily protected, when in flower, from Spring frosts.

Another system of protection is described and illustrated in the *Horticulturist* for June, by John H. Jenkins. The trees are trained with a lower tier of branches, which are readily bent down and covered with earth in winter, while the centre of the tree is trained in such shape as to be easily done up in Autumn with a straw rope, or covered with a box.

Has Mr. Jenkins been often successful in covering with earth? We tried earth covering many years ago, but with us the buds rotted; and the straw covering, or a simple box, will not afford sufficient winter protection in this region. If this box is loose and used for the purpose of merely shading from the sun's rays, it will have but slight effect; and, if it is for the purpose of modifying temperature, it must be tight, and even then, will not be very efficacious.

It has been asserted, that if a tight barrel is turned over a plant for winter protection, it is often killed, where, if the head is loose,—simply laid on, it is successful. If this is true, the fact is of importance, and should be borne in mind in all attempts at protecting the peach.

In a late number of the *Prairie Farmer* is an account of Mr. Mason's success in Wisconsin. He trains the trees low,—not more than four or five feet high, places on them rafters, over which boards are laid, which are covered with earth.

This plan involves the cost of lumber, and the labor of covering and uncovering, which, if frost threatens often in Spring, would be considerable; and if the growth of the trees is much retarded by keeping the covering on late to avoid Spring frosts, we opine it must be done with some judgment, or losses will occur.

If orchard-house culture is "the simplest and surest plan of insuring an annual crop," it is plainly evident that the Peach, Apricot and Nectarine are luxuries for the few, as it is only the wealthy, as a rule, who can incur the expense of glass houses, with the risk of their loss or damage by hail storms and other casualties; besides the successful management of orchard-houses involves much labor and a good degree of gardening skill.

The conditions to insure an annual crop are,—

First. Healthy trees, with sound wood to the centre, presenting, when cut, a clean white appear-

ance, much like that of a newly cut young hickory. This condition may not be absolutely essential, but we like a tree capable of circulating sap throughout its entire organism.

Second. They should never be subject to a temperature below zero, and if it can be kept at ten or twenty degrees above, it is quite desirable.

Third. The trees should be wintered in an atmosphere neither too dry nor too moist, especially when subject to the action of frost.

Fourth. It is desirable they should come forward in Spring with the natural advance of the season. Should be sheltered from cold winds and storms, and must be protected from frost when in bloom.

We are this year growing the fourth annual crop of Peaches, and the second of Apricots; and, from the knowledge of this limited experience, we are perfectly certain that boards and straw answer the above requirements much better than glass for insuring an annual crop at the natural season; Peaches in June is another question.

[We do not know of any subject more worthy of the attention of amateur horticulturists. Our correspondent deserves much credit for the perseverance he has displayed in the matter. He is on the right track, and we trust our readers will freely make any suggestions that may assist in developing a good system of fruit protection as well adapted to the American climate as Rivers's in England.]

BUDDING THE GRAPE.

BY J. W. MERRICK, JR., WALPOLE, MASS.

In the July number of the *Monthly* is an enquiry about budding the Grape-vine,—and in answer to it I give you my small experience, premising that I cannot *graft* a Grape-vine, and never saw anybody who could.

In August, or the first of September, 1862, I budded a staminate native vine with buds of three or four good varieties, the buds being inserted in the usual way, and a bunch of grass tied round each bud after insertion.

Several of the buds took and remained plump and firm, but I very foolishly cut the top of the vine off and this started the buds which grew very well, but of course were killed by the frost. If I had been a little less hasty I should have had a very curious composite vine the next season.

Before we can graft a vine successfully the causes of failure must be ascertained, and I wish to ask if any reader can throw light on this obscure subject?

I think budding should be tried repeatedly with different varieties. If it could be made as certain with the Grape as it is in the case of the Pear or Peach it is hardly possible to exaggerate the convenience it would afford the amateur.

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✉ All Communications for the Editor should be addressed.
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THE LAWS OF CHANGE.

It is very fashionable in horticultural discussions to appeal "to nature" whenever one wishes to make a strong point in his favor. To "imitate nature," to "follow nature," and to "seek the natural way," are every day expressions in every essay we hear, and in every book we read. This would be all well if we understood "nature;" but daily discoveries show we do not.

It was universally supposed that nature was the same to-day as yesterday and forever. Every thing is and always has been perfect. Nature was to be considered as a grand schoolhouse in which there was always a place for every thing and every thing in its place. But as the scholars have got out of school, rambling over rock and hill on their own account, and tracing out nature's laws for themselves, they have found that Nature has really no place for any thing. She is never at rest. Perpetual motion is not only an essential law of her being, but that motion is always forward. She never returns to the place from whence she started,—but seems to aim in all her efforts at some improvement. The mind of nature like the mind of man seems to place its highest hopes in making her morrow wiser than to-day. Geology, Botany and all the sciences have shown this continual progress of all nature in a sort of revolving circle where the lines ever coincide but never meet.

Horticulture, perhaps more than any other science, has given the old stand still, fixed, perpetual, unchanging character of natural phenomena the most staggering blows. Instead of finding that plants and flowers do best in their native places, and in their native ways, it finds change essential to perfection, and in many cases to absolute existence. The wild man of America has given place to the European man, who, in turn, will be replaced by some other man; and in the same manner the wild plants have been sup-planting,—nine-tenths of

all the common vegetation we see around us, thriving with such vigor and luxuriance, are foreigners, and those to the manor born have a fearful struggle for existence. Indeed so much superior are introduced plants over native ones in vitality that we feel sure when Darwin remodels his work "Origin of Species," he will include emigration as amongst the most successful of the plants, "struggles for existence." He will find it as true as amongst them as amongst men, that

"He who fights and runs away,
Will live to fight another day."

The stand still theory has hampered horticulture. The old notion that varieties of fruit wear out, is probably true,—but it is more true in relation to this old view of nature than it is in fact. The Golden Pippin Apple, the variety on the supposed wearing out of which Knight built up his splendid speculation, would justify the notion perhaps if confined for a few generations to the little piece of ground embraced by England,—but in our large country where it would have a chance to encounter new circumstances for a long time, the "natural" period of duration of the variety would be many times longer.

Our best writers in England, on the theory of horticulture, scarcely recognize the fact that nature "moves on," although every day practice teaches it. The Orchid growers first attempted to "imitate nature" in their Orchid-houses, and miserably failed. Their practice is almost reversed now; yet it is interesting to notice in all their writings strange efforts to prove, as they did in the former case, that they "imitate the natural habitats of the plants."

To American horticulture, however, more than to European is science indebted for the discovery that nature is not the best guide,—although to modern horticulturists mostly is the credit due,—for it is not long since that a pretty strong party believed that "native fruits and native plants" were much better than foreign ones, principally owing, no doubt, to the failure of the foreign vine to do well here. The Pear, and the Strawberry, and the Currant, and many others have upset this doctrine,—and it is now a well settled maxim with intelligent horticulturists, as with the intelligent farmer who occasionally changes his seed Potatoes for others from a distance, that "far fetched things" are after all very often the best.

How many thousands of beautifully written essays, by brilliant writers, has the world read to show how the stamens and pistils of flowers are arranged with such an evident and wonderful design to fertilize themselves. Yet Darwin and Asa Gray

have proved that the truth really is, there is a continual effort on the part of nature to prevent this self-impregnation. In her hatred of close family connections in the animal world, she has placed the penalty of physical and intellectual feebleness as a barrier to them,—and in the vegetable world the same laws seem to govern. In many plants self-impregnation is rendered impossible by the structure.* Pollen from a distance must be brought by insects,—and still more to ensure this infusion of distant circumstances, she has in many cases divided the sexes of plants so that the male and female parents of the seeds must come from other individual plants, distinctly wide apart.

So far from nature being always unchanging in her manifestations, and a fit example for horticulturists to copy from, it is evident that her only unchanging law is that *there must be change*,—and it will afford comfort to the nurseryman and the raiser of new varieties, and the importer of new and rare trees, fruits and flowers, to reflect that in consequence of this law, they are really ministering to the wants of the horticultural community alike as to the necessities of a natural decree.

* Dr. Gray has contributed an interesting paper on the Iris in the July number of the *American Agriculturist*, showing this point.

AMERICAN POMOLOGICAL SOCIETY AT ST. LOUIS.

From conversation with friends, and the letters of correspondents, we hold it certain that the largest meeting of pomologists ever held in this country will be that proposed to be held in St. Louis during the first week in September.

When the idea of St. Louis was first proposed, it was doubted whether it would be good policy to hold it so far away from the great centres of pomological knowledge,—but the immense progress made in this department of horticulture by the West, particularly the Southwest, seemed to give it a strong claim on the Society to do something especially for it,—and it was with great pleasure we recorded the final action of the Society in favor of this view.

The events of the past two years have been particularly favorable to this choice of St. Louis. The fortunes of war have prevented the attendance of the Southern friends of horticulture, to whose knowledge and experience in fruit culture the Society has in times past been largely indebted,—for it is only by the comparison of facts gathered together from the widely separated districts of our

common country, that any rules to be of general value can be deduced. With so much continuing to irritate, which every student of history and human nature must well understand to be the natural result of such a national struggle as ours, and which in the course of human events must take several years to eradicate and utterly destroy, many allowances have to be made for peculiar courses of conduct and opinion which otherwise would not stand the ordeal of judgment by common sense. Horticulture is proverbial for its fraternal tendencies, but it would have been too much to expect a large attendance from the south, had any northern point been selected for the meeting. By going to St. Louis all go to meet each other, and all danger of the usefulness of the Society being impeded by wounded feelings will be happily avoided.

There will be some interesting features in this meeting which have not been prominent in others, but which will add much to the interest of the affair. All former sessions have been mainly devoted to the discussion of varieties and their adaptation to different localities. This has always been very popular, and will, no doubt, be followed out on the present occasion,—but from what we can gather from gentlemen whose opinions influence the Society's action, considerable more attention will be devoted to practical matters connected with the success of fruit culture than has heretofore been customary.

We look forward to the meeting with a great interest,—assured that no previous one will have had so happy an influence, and so useful a result as this one in all probability will.

STRAWBERRIES THIS SEASON.

We have had many Strawberry plants sent us at different times by our friends to test, and these and others that we have seen in our neighbors' grounds this season have together afforded us some material for judging of the comparative value or otherwise of some varieties, new or old, that may be of value to our readers:—

Lady Finger we find often to lose its pistils as Lennig's White does, which makes it produce but a poor crop.

Hovey's Seedling, when well fertilized and in good condition for developing its pistils thoroughly, is still a very desirable kind.

Agriculturist is a first-rate variety for sandy or poor soils,—but not so good for rich ones.

Triomphe de Gand is yet amongst the best for rich soils.

The *Albany Seedling* is not yet probably to be excelled for a general good crop of large fruit in an average of soils.

Downer's Prolific does wonderfully well in many localities, like *Albany Seedling* it will adapt itself to soils and situations better than many others.

Wilmore yet holds its ground as a good one to follow earlier kinds.

New Jersey Scarlet is the earliest kind of its large size probably now before the public. It comes into bearing *all at once*, very few being left for pickings subsequent to the first. It will be popular with market men on this account, and as plenty of plants will result it will, no doubt, be strongly advertised. To the amateur a few plants for early ones will be valuable.

Randolph Pine seems to be the earliest we have seen. The flavor is very superior, but the crop, so far as we have observed, is light. It may suit well some particular soils.

French's Seedling maintains its general character very well.

Brooklyn Scarlet is rather early, good bearer and good quality, and we think will rise in public estimation.

These are all the points that will be particularly new to our readers that we have been able to make from our own observations this season.

FORCING-HOUSES OF STEPHEN MORRIS, ESQ., SCHOOL LANE, NEAR PHILA.

Under the able gardening of Mr. Wm. Young, this establishment is getting famous for distinguished success in the various branches of gardening.

The grounds occupy about ten acres we should judge, and the mansion is situated near the centre; and the winding carriage road is tastefully designed to show off the house to advantage, as well as to add apparent size to the grounds. It seems quite a long drive, but the real distance from the public road is small; yet this is accomplished in such a natural way as to seem without effort, and as if it could have been done in no other way. It is seldom these efforts in the art of landscape gardening succeed so well as they have done in this.

The houses consist of cold vinery, Orchid-house, large conservatory, greenhouse, early forcing-house, vegetable forcing-house and peachery. The last is what we would particularly notice today. It is about fifty feet long and eighteen feet wide. The Peach trees from four to six years, grown in tubs and pots averaging about 18 inches in diameter. The Peaches are gathered *by the bush*. We have seen successful pot culture of

fruit, but never any thing to equal this. The family must be satiated with Peaches, and we understand they get all they want for themselves and for presents to their rather numerous list of friends. A fruiterer, we are informed, offered \$600 for the whole crop to sell again.

Usually forced Peaches are not equal to out-door raised in size and flavor,—but these were equal to the best. It is astonishing when one can get from 200 to 500 such fruits as them from a single tree in an eighteen inch pot that they are not more grown this way.

Mr. Young considers *Stump the World*, *La Grange*, *George IV.* and *Grosse Mignonne* as the best of all varieties for this way of culture. *Hale's Early* he values simply for its earliness, and would have a few trees, but the quality he thinks not equal to others which come a little later. It is strange that after all the many new Peaches raised within the past few years, few besides *Stump the World*, will rank in excellence with many very old kinds.

BITAPS 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.

THIS AND THAT—*Charles Cruicknell, Germantown, Pa.*—"Under the above heading the *Horticulturist* for July writes thus: 'We were reading the transactions of the Eastern Pennsylvania Fruit Growers' Society at the January, 1866, meeting when we found Mr. Cruicknell said, 'Pears worked on Quince stocks could not be depended on to live longer than about twelve years.'

"I am not a member of the society referred to, nor are their transactions for 1866 published; the *Horticulturist* must, therefore, be mistaken in supposing that it read any thing of the kind in them.

"I have cultivated Pear trees long enough to know better than to make so unqualified a statement that the Pear on Quince stock will not live longer than twelve years.

"Now, the facts are these, Mr. Thomas Meehan read an essay on the 'Diseases of the Pear' before the Pennsylvania Horticultural Society at the February, 1866, meeting. In the discussion which followed I did say the Pear on Quince, as a general rule, could not be relied on to bear and ripen a profitable crop of fruit after attaining the age of about twelve years. If, on the other hand, the Pear on

Pear can be made to bear as early as the Pear on Quince,—and this I believe to be the only point which Pear cultivators disagree on,—the superiority of the standard Pear in other respects being admitted by all parties,—it were better for those intending planting Pear orchards to give the preference to that stock.

“Again, that journal says: ‘We have Pear trees worked on Quince planted out from the nursery in 1847 that are now vigorous and healthy.’ I know of a parallel case where Pear trees worked on Quince planted *seventeen years*, and ‘*vigorous and healthy*’ had borne no fruit during that period of time, which under a different mode of treatment yielded a bountiful crop of fruit for several years afterwards. Upon examination the trees were found to have thrown out roots from the Pear, consequently they were not strictly speaking on the Quince.

“Pears worked on Quince may, ‘with judicious care in pruning and culture, continue good one hundred or more years,’ but there is this much to be said about it: I have never met nor heard of that fortunate individual who understood, or who could explain satisfactorily, what that ‘judicious care in pruning and culture’ consists of, which makes a world of difference between dwarf Pears bearing fruit for a decade or a century. Will those who have these one hundred year old trees please give us the practice?”

[Our good friend, Patrick Quinn, recently twitted us, without ground, as the sequel proved, that we did not read our New York contemporary very closely. It beats us in reading when it takes the *Gardener's Monthly* for the transactions of the Fruit Growers' Society of Eastern Pennsylvania.

It might seem rather that our neighbor did not read it at all, but was “put up to it” by a treacherous memory or something else, especially if remembering a little piece of the same nature in *Hovey's Magazine*, we put “this and that together.”

The combined “attack” evidently means something. Before we go farther, however, we want an answer to this question from our contemporaries.

Do they mean to assert that the average duration of Pears on the Quince planted in the United States is equal to the average of Pears on Pear stock? If not, what is their idea of the average?

NURSERY OF AD. BORNEMAN, XENIA, OHIO.—We are asked to advertise for the proprietor of a nursery card as above. As we have seen the same name connected with Dayton, Versailles, Greenville and a host of other places, which travelling nursery has a suspicious look, we should be glad to

know something of it before advertising. Do any of our readers know? We never interfere with the advertisements of respectable dealers,—but it is due to our readers that we be satisfied that the business is a legitimate one. Xenia, according to reports, is an unlucky place for nursery dealings anyhow.

THE HEAT.—In ancient times, and that too at no very ancient date, a notion prevailed that this world was a sort of prison-house in which, through sorrow and suffering, one was to worry his three score and ten along as cheerily as might be, until the grim turnkey Death should open the doors and set him free. There could be no wonder at this fancy if all the world were as we have been here the past three weeks—parboiled, baked, stewed and roasted. The thermometer has ranged from 90° to 102° in the shade almost without intermission, and our sufferings, together with those of our plant pets, have been almost intolerable. It seems something of the matter prevails all over the Union,—for although our postman puffs and blows as he enters our office, it is not because of the weight of letters he brings us; for the welcome little straws, which show us which way the horticultural wind blows, have nearly disappeared. In fact there isn't any wind. We suppose all the people who write letters must have gone to the “Springs,” the “Mountains,” the “Sea-shore” or some such like Elysian spots which editors hear tell of, or read about in the Arabian Nights, but never see. At anyrate the only verbal query we have put to us by our friends is, “Isn't it hot?” and we have opened our drawer to reply to the “Queries” that may have accumulated during the month, and we find only one,—and that so deliciously *cool* for the season that we sincerely regret that we did not find a few more of the same sort. It is from a correspondent at Hammonton, New Jersey, who writes about a very pretty portrait, which every one has seen, of a beautiful DWARF PEAR.—*Pyrus* says:—

“In the ‘Rural Annual,’ some years ago, was given a pretty cut of a Dwarf Pear, loaded with fruit, growing in the garden of the *then* editor of the *Horticulturist*, and looking extremely beautiful. That cut has been extensively copied so that almost every catalogue in the country has it to this day, as an illustration of what Dwarf Pears may be. It would be a very nice thing if you could or would give us an illustration of that Dwarf Pear tree *as it is now*.”

We wrote to our friend Mr. J. J. Smith for his permission to send our artist and have it figured; but, as will be seen by the annexed reply, find to

our regret that it will not help our friends, the *now* editor of the *Horticulturist* or of *Hovey's Magazine*, to bring up the *average* duration of the Dwarf Pear to 75 years:—

July 14th, 1866.

"DEAR SIR:—Absence must excuse my delay in replying to your query. My Dutchess figured in the *Horticulturist* as so lovely, did well for a year or two and then disappeared, as have all my prospects of Pear culture even in a small garden. What fruit there is, is attacked by worms and certainly I have not the value in returns of the interest of the cost of the trees.

Respectfully,
JOHN JAY SMITH."

SEEDLING CARNATIONS AND PICOTEES—from *W. C. Strong, Brighton, Mass.*—"I send, by mail, a box of seedling, hardy Carnations raised by our friend J. F. C. Hyde. His bed is a wonderful sight in profusion. It stands our Winters perfectly and the grass is admirable. It strikes me, also, that the flowers are unequalled. I trust they will reach you in good condition."

[These, packed in damp moss, as cut-flowers should be, came in excellent condition. There were five varieties all very good, and showing by the ease with which Mr. Hyde manages them that the Carnation, and particularly good ones like these, are worthy of more general cultivation than they get.]

BUDDING THE GRAPE-VINE—We noticed in the July number of the *Gardener's Monthly* a correspondent desires information upon budding the Grape. It is generally believed it cannot be done successfully.

We were of that opinion eight years ago, when we entirely failed in our attempts, but farther experiments has fully satisfied us that the vine can be successfully budded.

The season to perform the operation in is quite short and requires some observation and experience to know exactly the time to succeed well, as it varies in the variety, location and season. At our location from about the first of August until the first of September, but we must wait at least until we can get good wood *nearly matured*. Cut a cane off about three-eighths of an inch thick and one and one-fourth inch long, with a good bud in the centre. Cut off the opposite side smooth and level until all the pithy part is removed from the bud. Then insert it, dovetail, in the side of the stock, near the ground, by cutting out a piece corresponding with the bud, hav-

ing the edges to meet at least on one side. Tie with a soft woolen thread to keep the bud in its place, then cover it over, several inches thick, with moist earth and let it remain until it unites. The piece with the bud on should be left full long, and the vine sprung back gently to insert it easily and when left go (on a strong vine) should hold it firm without much tying. Use no wax. If the conditions are carefully fulfilled the success will be equal to grafting.

We may, if of interest, give something on grafting the Grape.—J. STAYMAN, *Leavensworth, Kan.*

ELLWANGER & BARRY'S "TOM THUMB" ARBORVITÆ.—A correspondent sends us a specimen which he says he received from the above firm, as this, and asks us if it is not the Japanese Arborvitæ, *Thuja ericoides*. It is certainly this plant. We have not seen E. & B.'s variety,—this is the first time it has been brought before us.—either our correspondent is mistaken in supposing he received this plant from them, or E. & B. have sent him, accidentally, the wrong plant; for they are too intelligent a firm to suppose they "found this a seedling amongst some American Arborvitæ." *Thuja ericoides* is common and comparatively cheap. We should be glad to get from some one an authentic specimen of "Tom Thumb."

Books, Catalogues, &c.

MY VINEYARD AT LAKE VIEW.—By a Western Grape Grower. New York: Published by Orange Judd & Co.

Such works as these ought not to be published anonymously. Similar works have been issued in the same way, and afterwards discovered to be nothing but romances,—at least there were the grounds, and the cultivator of the grounds,—just enough of each to found the romance on fact, as the best romances are. Such works usually make an immense sensation, but no sooner is the author known, and an examination of the real facts made, than author and grounds sink at once into oblivion.

The excuse is that they do good. We repeat here what we have said on other occasions, that we do not think the good results are commensurate with the harm. Thousands of poor men are inveigled by these tales into leaving occupations for which they are fitted, and which afford themselves and families fair livings, for another of which they know nothing, and in which they usually fail, losing a life's hard earnings, and deterring many an one

who would be well fitted for agricultural pursuits, from making the attempt by reasons of the other sad failures.

In this instance we do not know whether the book is a romance or not,—but as it comes out under the romantic cover we have referred to, we cannot help treating it as such until we know better. The following sketch of the book shows how the story runs, and the reader must take it “for what it is worth:”—

The author was a practical printer, and a few years since determined to go west. There he bought forty acres of land in southern Indiana, at \$25 per acre. The house was made of logs. He repaired it. The barn was insufficient and he enlarged it. He built fences, bought stock, prepared sheds, and did all which a judicious man could do to render property valuable. He had \$1305 when he left the printing office, and expended all but \$138. He planted an orchard, and his wife made an agreeable flower-garden. The first year left a surplus towards paying the mortgage. The second and third years were more prosperous, and he began to plant vines. These grew more valuable, and he tried new varieties. The Clintons, Concord, Isabellas and Catawbas were the chosen varieties. He studied what was published on the subject of Grapes, and sought to improve his own knowledge. Then he began a regular vineyard, found it profitable and was encouraged by the imitation of others. The third year showed some advance. The fourth year he got \$350 worth of Grapes from a single acre, besides a half barrel of wine. The vineyard came into full bearing the fifth year, and gave \$250 clear profit from one acre of vines. At the time of writing the author had five acres in bearing. He balances the expense and profit by \$1150 to the former, and £2100 to the latter; leaving \$1050 profit. Leaving this account of his personal experience, the writer treats of the culture of the vine, of soil and situation, of the preparation of soils, of manures, of pruning and training; gives an amusing autobiography of a vine; some considerable expositions of treatment and of the varieties to be used, with remarks touching new Grape regions and ancient methods of culture.

TRANSACTIONS OF THE AMERICAN INSTITUTE FARMERS' CLUB, for 1863 and 1864.—From J. W. Chambers, Librarian.

We always value these reports very highly because they mostly comprise facts gathered from persons outside of the usual horticultural circle, and which we could not probably get in any other

way. These are very ably collated and indexed by Mr. Chambers, to whom we are under obligations for remembering us in distributing them.

INDIANA STATE HORTICULTURAL SOCIETY'S TRANSACTIONS for 1866, beautifully bound for preservation—a commendable example for other societies to follow.

ATLANTIC MONTHLY, for July, contains, amongst other briefly interesting essays and sketches, the first of a new series of papers by Prof. Agazzis, in which he gives accounts of various interesting matters that came before him on his recent explorations in Brazil. Most of our readers, no doubt, read the *Atlantic*,—those who do not will miss a rich treat in these chapters of Agazzis.

New and Rare Plants.

NEW PLANTS IN THE LONDON MARKET.—*Azuleas*.—The two following beautiful varieties will be found great acquisitions, and they must take first rank as exhibition plants, Princess Alexandra being raised from the same parents as elegantissima, which has proved to be one of the best. The present variety will be found superior in quality, with much larger flowers, of a substance never before met with—the most important feature for prolonging the flowering season. Princess Helena is recommended for its general usefulness, being a free bloomer and quite distinct in habit.

PRINCESS ALEXANDRA.—A beautiful form of elegantissima, with flowers 3½ inches across; petals round and smooth, of great substance, slightly striped with deep crimson; a profuse bloomer.

PRINCESS HELENA.—Deep rosy pink, upper petals spotted with lake. The transparency of the flowers causes it to be distinct from all other kinds; habit good and free.

Rhododendrons.—The two elegant varieties are the seedling productions of Mr. Bousie, late of Stoke Park, and were exhibited by him a few seasons since at the Royal Horticultural Meetings, and received Certificates of Merit as valuable additions for greenhouse decoration, being of free-flowering habit, a feature much wanted in a greenhouse Rhododendron.

DENISONII.—A seedling from Dalhousianum, crossed with Edgeworthii and Gibsonii; a very fine variety, with splendid habit, well furnished with clean-looking flattish elliptic leaves and large cam-

panulated flowers, pure white, with a lemon stain towards the base, very elegant;

MCNABBII.—From *ciliatum*, crossed with *Edgeworthii*; a very handsome plant, dwarfish in habit, with smooth elliptic leaves, and beautiful large bluish white flowers.

Achimenes.—Six beautiful varieties have been raised by Mr. Parsons, of Welwyn, and are considered far in advance of any yet sent out. *Pink Perfection* the same size as *Mauve Queen* and equal in substance, while *grandis* gives the deepest violet shade.

ADVANCE.—Flowers deep reddish purple, with a light spotted eye, shaded towards the margin, quite distinct.

ARGUS.—Color rich plum, large deep orange eye, spotted with carmine, upper lobes of the flowers beautifully rayed towards the margin.

AURORA.—Flowers 2 inches across; color rich heavy scarlet, with light yellow eye, very effective.

GRANDIS.—Flowers deep violet color, with a deep orange eye, finely spotted and shaded with carmine.

PINK PERFECTION.—Flowers very large, color magenta rose; the upper part of the eye rich carmine, the under lobes beautifully rayed with violet, very fine.

STELLA.—Flowers 2½ inches across, clear magenta, orange eye, spotted with carmine, nicely serrated, distinct and beautiful.

PASSIFLORA HULLETHII.—A stove climber, recently introduced from Rio Negro, on the banks of the Amazon, in growth much resembling *P. quadrangularis*, the leaves, which are very ornamental, being 8 inches across; the flowers are large white, spotted with pink. Besides being a desirable addition to our flowering plants, it will no doubt prove to be one of our most valuable Exotic Dessert Fruits, the flavor of that produced by it in this country last season being so delicious that it was pronounced superior to any of our Pine-apples. It requires a moist stove temperature.

SWAINSONIA MAGNIFICA, (figured in the *Floral Magazine*).—A free-growing and free-flowering greenhouse climber; native of Australia; habit and character partakes of both the *Clianthus* and *Swainsonia*; whilst it has the robust and graceful-growing habit of the former, it produces more prominently the long pendent racemes of delicate bright-colored pink flowers of the latter, with a pure white centre in the upper petal or lobe. It is well adapted for a cool greenhouse, treated as a pot plant or planted out in a border for pillars or trellis-work.

THUNBERGIA FRAGRANS.—The whole character quite distinct to any other *Thunbergia*, and whether grown as a pot plant or planted in the border for covering pillars and trellis-work it will be invaluable, being free in growth, with ample foliage of a dark green, with great substance. It continues flowering throughout the year, but its principal period is during the Winter months, a time when white flowers are scarce.

NEW BEDDING GERANIUMS.—Verbenas have failed so much the past few years that the astonishing improvements in the old scarlet *Geranium* come in very opportunely for American flower gardening. We have made up the following list of new kinds from the English journals,—we have no doubt many of them will be imported by our florists this Fall for next Spring sales:—

BANNERET.—Flowers scarlet, crimson and purple-shaded, very bright and beautiful. A hybrid nosegay.

FAIRY QUEEN.—Rosy purple. A large smooth flower; very distinct and effective.

MINSTREL.—A peculiar and pleasing shade of salmon. Something in the way of "Lord Palmerston," but brighter in color, and broader in the petals.

MONTE ROSA.—Dark rosy purple—pleasing color; large truss. Very fine.

NIMROD.—Orange-scarlet, white eye; large flower and truss; foliage and habit fine.

PHENIX.—In the way of "Stella," in habit and general character; the color flammeous scarlet.

PRINCE OF ORANGE.—Orange scarlet, very bright, great substance; good habit; prodigious bloomer.

PEACH NOSEGAY.—Flowers deep, bright peach color. Very free bloomer, splendid truss, plain leaf. First-rate and distinct.

REBECCA.—Cherry color; fine truss; dwarf compact habit; very profuse. The finest bedding *Geranium* yet raised.

ST. GEORGE.—Dark chestnut, shaded with blackish crimson. Quite unique; very free and effective. An entirely new color among *Pelargoniums*.

SALMON NOSEGAY.—Flowers pure salmon; large truss. Good.

SIR J. PAXTON.—Flowers true orange, very bright; fine large truss. A splendid variety for massing.

WOOD NYMPH.—Salmon pink. Large and fine.

ALEXANDRA.—Magenta.

AMY HOGG.—Bright purplish rose.

BLACK DWARF.—Dark crimson.

BEATON'S INDIAN YELLOW.—Orange scarlet suffused with yellow.

DONALD BEATON.—Clear orange scarlet.

DUCHESS.—Soft rosy lake.

FULGENS.—Vivid scarlet.

GLOWWORM.—Magenta crimson, flushed with scarlet.

MAGENTA QUEEN.—Magenta.

ORANGE NOSEGAY.—Bright orange.

PILLAR OF BEAUTY.—Brick red.

PRINCESS LICHTENSTEIN.—Salmon pink.

SALAMANDER.—Brilliant scarlet, large white eye.

SCARLET GEM.—Bright orange scarlet.

MRS. WILLIAM PAUL.—Delicate rose pink.

WALTHAM SEEDLING.—Dark crimson.

Varieties especially recommended for growing in pots or vases.

BRIDE.—Flowers white, with large crimson eye; of fine shape and substance. A first-class variety for pot culture.

CARDINAL.—Flowers dark orange scarlet. For shape, substance, color and habit, this is in advance of any scarlet yet raised.

CELESTIAL.—Flowers rosy lake, with fiery spot on upper petals; their centres bluish purple, resembling the "Cactus speciosissimus;" large white eye. New in color, and very beautiful.

LORD CHANCELLOR.—Salmon pink, white eye. Perfect shape, very free, fine habit.

POET LAUREATE.—Rosy purple; top petals orange scarlet; yellowish eye. Perfect shape.

TIARA.—Flowers scarlet crimson, suffused with purple; good truss. Very free, fine habit. Quite distinct from any yet raised, and very lovely.

Miniature or Pompon varieties.

DIAMOND.—Fine scarlet, purple centre, white eye. Flowers profusely; habit good; distinct.

DRYAD.—Beautiful rosy pink. Fine shape and truss.

NAIAD.—Flowers purple, scarlet top. Pleasing and distinct.

WALTHAM LILAC.—Flowers pure lilac, very profuse. A new and desirable color. Excellent for massing.

ZEPHYR.—Flowers light purple top; petals rose color. Stands the rain and sun well; very dwarf and free.

New and Rare Fruits.

WILSON'S EARLY BLACKBERRY.—We had some

from Mr. Collins last year, of the flavor of which we could not speak highly,—though we suspected the sphagnum in which they were packed had much to do with it. We have now another sample, and can say that they are of good size, beautiful dark, black color, not so large as Lawton's, but better in quality. We suppose their earliness is the main point, however, claimed for them. We have one set side by side with a Dorchester, our earliest bearing, and believe it is earlier than it. We regard it as a valuable variety.

SOME FOREIGN STRAWBERRIES.—*Mr. E. J. Evans, of York, Pa.*, sends us some samples of Foreign Strawberries, which reached us in fine condition, with the following note:—

"We send to day, by express, prepaid, a few samples of Strawberries, which we desire you to examine and taste. Owing to the depredations of birds and thieves, we had to take them off too soon to do them justice, but you can still, perhaps, judge of them *relatively*, as far as *samples* will enable you to do so. We send *Lucas, Marguerite, Haquin, Virginie, Hero, Lorenz Booth, Jucunda, La Constante, Napoleon, III, Progress and Delices d'Automne. Hero, Virginie, Haquin, Progress, Napoleon III, and Lucas*, we consider very promising. *Lorenz Booth* wish to test further. *La Constante* has heretofore burnt badly (in its foliage), and *Delices d'Automne* did not bear well last year, but promises better this. *Marguerite* with us is soft and deficient in flavor. *Jucunda* promises well, but is neither as firm or as productive as some of the other kinds sent. Will, perhaps, have some other varieties to send you this week. Had some beautiful Agriculturists, which intended sending to compare with Mr. Knox's *Jucunda*, and Mr. Hovey's favorite *La Constante*, but they disappeared last night.

[The following notes we made of them may possess an interest:—

Murgeurite.—Rich aromatic flavor.

Virginie.—A square pointed, flattened variety, with longitudinal ribs, remarkably firm and solid, but acid flavor.

La Constante.—A very distinct kind, not likely to be mistaken for any other of the well-known kinds; regular, inclining to flatness, and to ribbing occasionally, with a broad green point, with numerous prominent small seeds. The peduncles or fruit stems are longer than in most varieties. Color deep crimson scarlet; flavor not equal to some others.

Jucunda.—Seeds small, prominent, numerous,

but not quite so much so as in *La Constante*. Berry inclining to long, tapering suddenly, rather lighter than *La Constante*, and not quite so good in quality.

Delices d'Automne.—A much darker and different berry to what we have before known as this variety.

Lorenz Booth.—A new name to us, and a variety we have never seen: the berry is so deeply ribbed as almost to appear as if two or three berries were united in one. The seeds small and numerous, and color dark crimson; flavor second-rate.

Progress.—A dark, roundish berry, very much resembling the old *Alice Maud*, and about the same quality.

Napoleon III.—This is one of the most distinct fruits we know, and one of the best in many respects. It is larger than any of the others named. It is very variable in form, some nearly round, others oval, some cockscomby, and others triangular and irregular. The color light red, with a pinky tinge; seeds small and numerous, not very deeply set; flesh a snowy whiteness; flavor equal to any we have named, except *Marguerite*. If this should prove a regular and abundant bearer, well adapted to most soils and situations, it would be a valuable kind.

These Strawberries are all ripe, our own being only just ripening.—Ed.]

NEW STRAWBERRIES.—The following note from Mr. John Saul, though not exactly favoring "new Strawberries," we give a place under this head:—

"I was struck with the very just remarks you made on Strawberries in the June number. How few—very few of these new varieties are of any real value. I have grown Strawberries extensively for nearly fifteen years in this latitude, yet the varieties I should recommend for general culture are but few. I would remark, that for years I have imported all the new leading foreign kinds, as well as collected those new home introductions, in order to thoroughly test them. Occasionally we find a foreign kind that proves fine, or a desirable new native; but these should have several years trial before their characters can be fully determined, and before they should be recommended for general cultivation, though it is most desirable that promising varieties should be fairly tested by those Pomologists who have opportunities of doing so. What I recommend have not novelty in their favor. The foreign varieties are *River's Seedling Eliza*, *Triomphe de Gand*, *Jucunda*, *Victoria*, and *La Reine*; Native—*Wilson's Albany*, *Hovey*, and *Fillmore*.

I have placed these in the order in which I

esteem them. *Seedling Eliza* is an old variety, yet it still maintains its character with us as the finest of Strawberries. *Triomphe de Gand* is well known, and needs no description. *Jucunda* I place third; it is a fruit of the largest size,—perhaps the very largest, and though of excellent flavor, not fully up to *Seedling Eliza*. It is also a good cropper. This variety requires high culture. I have found it succeeds best on dry, deep bottom land, where it gives fine crops of monstrous sized fruit. The origin of this variety appears not to be generally known. It is of French origin,—was raised by Messrs *Jamin & Durand*, and imported by me in the Spring of 1858, since which time I have grown and disseminated it pretty extensively. Growers may plant it safely, but they must treat it well. *Victoria* and *La Reine* are both fine reliable berries. Of the three native varieties I need say but little, *Wilson's* and *Hovey's* being well known; probably the last, *Fillmore*, not so well. I find it useful as a late variety, though its fruit is rather dark for market, and not to compare in flavor with *Seedling Eliza*, &c.

I find little to recommend in these new varieties. *Russell's* and *Buffalo*, if not identical with *McAvoy's*, they have been reproduced so closely as to make it difficult to show wherein they differ. *French's Seedling* has not proved valuable here.

I would remark, that the crop in this region has been this season quite light, in consequence of frosts the latter part of April and early in May, destroying the bloom.

STINGER'S SEEDLING.—The following description of this variety is thus given us by a friend:—

This Strawberry was raised by *William H Stinger*, near *Gray's Ferry*, Philadelphia, from seed of *Triomphe de Gand*, planted in 1861.

It has stood the winter and summer well; is a strong, hardy runner, making it a valuable variety for culture, and can be confidently recommended as a No 1. berry for either the market gardener or the amateur.

The leaf is of a light green color, and the fruit a brilliant scarlet. The flowers are perfect, and the plant an abundant bearer, producing fruit of an even size on a stiff stalk.

Was first exhibited at the June meeting of the *Pennsylvania Horticultural Society* in 1865, by *Charles Harmer*, of Philadelphia.

It was then named "*The Union*," and was much admired for the firmness of the fruit, its size, flavor and color; but finding one of the same name, it was changed to that of the Originator.

THE TEXAS BLACKBERRY.—Mr. S. B. Buckley says, in *Country Gentleman*:—

Blackberries thrive and bear abundantly here. I speak of the common wild species of this State, (*Rubus trivialis*,) which bears a fruit which I think to be superior to the one in common cultivation at the North, (*Rubus villosus*.) Raspberries are rarely cultivated, and probably when their merits become fully known they will be grown in almost every garden.

HYBRID RASPBERRIES.—*Mr. Charles Arnold, Paris, Canada West*, sends us the following:— I send you some Raspberry fruit, the plants being only three years old from the seed. There is not more than a dozen plants of any one of these varieties in existence, and these are all in my own ground, except two plants that were sent to Mr. Charles Downing, in April last.

All the varieties sent are the result of applying,— first, the pollen of Belle d'Fontenay to the pistil of our wild White Cap. The first generation clings to the bramble character with great tenacity, only three out of several hundred bearing the least resemblance to the male parent. These three were selected, and again crossed with the pollen of Belle d'Fontenay and White Marvel of Four Seasons, and the fruit now sent is the result.

All that I claim for them at present is, that they are perfectly hardy, standing on a cold, bleak knoll, between 43° and 44° north latitude, without any protection, either of snow or any thing else, and without the ameliorating influence of any body of water, while the Antwerps, Brinckle's Orange and Franconia, were almost killed out, root and branch, this last Winter.

No. 2, Red and Late, and No. 3, White, have the appearance of being enormously productive,— and, strange to say, that nearly the whole generation of them show the perpetual character very strongly. Judging from the present appearance of No. 3, Red, and from its manner of fruiting last year, I think I could send you ripe fruit from it, at least, five months in the year.

Please give us your opinion of the fruit, so far as you can judge, after its having travelled such a distance.

If such kind of communications are acceptable, I will send you fruit of several of my new Grapes in the fall.

[We regard these specimens and this letter with great interest. We have never felt sure these different species of Raspberry would hybridize,— but the appearance of these berries satisfies us of

the correctness of Mr. Arnold's idea that, hybridization did really result from the attempt to cross them.

At page 218 of our vol. 2, we expressed some doubt about Mr. River's guess, that the English Black Raspberry might be a cross between the Blackberry and the Raspberry, but this result of an attempt to cross, rather confirms the theory. With these facts, the door is fairly opened for the appearance of more strange forms, which will have a great interest to our cultivators,— for the hard, wild nature once completely broken up, there is no doubt a valuable race of fruits will spring up that will be quite famous.

The quality of the fruit was equal to Catawissa.—Ed.]

Foreign Intelligence.

CURRENTS.—Nearly all the varieties grown here are of European origin. The kinds have got considerable mixed, and few know how to distinguish them. We give, therefore, the following complete monograph entire from the *London Gardener's Weekly Magazine*:—

“Let us take the three kinds, beginning with the red. In this class the best variety known is *Wilmot's Long Bunched Red*, which gives bunches of great length. I once grew a bunch seven inches long—with large, handsome berries, colored a fine deep red. The flavor of this Currant is excellent. It is sufficiently sweet to suit most palates, and sufficiently sour to be described as sprightly, yet it is not so acid as to cause the face of the person partaking of it to screw up into ridiculous outlines, as must happen in the eating of some of the more acid kinds. I recommend this for real service as combining beauty with good quality and productiveness. Next in point of quality stands *Baby Castle*, which does not produce such large bunches, but the berries are large, the color is beautiful, the flavor more acid than the Long Bunched, and the fruit ripens later and hangs longer than that of any other variety. The tree is, moreover, highly productive, and may be grown to form very handsome standards. As there are not many sorts to be had, all who care to make a feature of Currants, whether for the kitchen or the dessert, or both, should take all the good ones that can be had. Supposing, then, that the two named above are determined on—and the difference between them is not great—the further selection will be for particular purposes. Which, then, is the best variety for that important domestic operation jam-making? I think

La Fertile will bear away the palm for superiority in this respect, but those fine varieties *Cherry* and *Champagne* make excellent jam and jelly because of their agreeable acidity and pulpiness. *La Fertile* produces a very large berry of a fine red color, and it is the most fruitful of all known varieties that possess really good qualities. This, too, is a capital market sort, because of the quantity and beauty of the fruit, and it is thoroughly hardy, and never suffers from Spring frosts. *Champagne* is in no way remarkable for size of bunch or berry, and to my eye its color is rather objectionable, being a pale pinky-red. It is good, however, for its productiveness and flavor, being sprightly acid, and will suit those who consider Red Dutch a tame dessert fruit; but I confess I abhor the acidity of all the sprightly kinds of Currants, they make me twist my features into such contortions that I suppose if I were being hanged I could scarcely do better or worse. Another capital sort for all other culinary purposes is *Houghton Castle*, which bears prodigiously, and comes late, like the *Long Bunched*, but in no respect resembles that noble variety either in size of bunch or berry. All points considered, I think we must come back to *La Fertile* as the best for every culinary purpose, and also for market.

"It is a matter of no small importance to select varieties of fruits so as to secure from each group as long a season of supply as possible. To do this, we want early, mid-season, and late sorts. The earliest Currant I know of is *La Hative*, a very excellent continental variety, which is usually ripe before any of the mid-season kinds begin to color. It is a most excellent variety—fit for any purpose, but rather tender in constitution, and hence, should have a sheltered position. Grow it on a wall or boarded fence; this will secure it shelter, and promote its early production to the utmost. Another good early kind is *Cherry*, which succeeds *La Hative*, and is the largest red Currant known, but unfortunately the bunches are short. When thoroughly well grown, the berries of this variety are like *Cherries*, and for exhibition purposes are invaluable. It is, moreover, very good in quality, and has an agreeable acidity of a very sprightly kind; it is a refreshing fruit, yet not so sour as to cause one to shudder. For mid-season supply, there is nothing to beat *Red Dutch*; it can always be depended on for a fair crop; the bunches are small, the berries of fair average size, a fine, deep red color, and the flavor is sweet, rich, and will suit any palate. *La Versailles* is more prolific, and comes in at the same time; the berries are large and handsome, but it does not equal *Red Dutch* in flavor, though it is

good, and far surpasses in every quality the common red of cottage gardens. The three varieties of *Knights's Currants*, namely, *Knights's Early Red*, *Knights's Large Red* and *Knights's Sweet Red*, are, in my opinion, comparatively worthless. Mr. Rivers describes *Knights's Early* as 'early and very good,' and if we had to choose between this and the common, we would take the first in preference to the second. But while such early sorts as *La Hative* and *Cherry* are obtainable, we can do without it, for it has no special merit of flavor, or beauty, or productiveness to recommend it. Something similar may be said of the other two, except that *Knights's Large* is large, but so are others that are of better quality.

"You see that it has happened here that the latest sorts were put first, but that was because they happened to be the best, and I was aiming at the best at the first start, before thinking of seasons and successions. But if we come back to late kinds, it is only needful to say that *Houghton Castle* and *Raby Castle* will take their proper place to lengthen out the season to the very latest. A few trees of these two kinds should be planted in the coldest position you have, so as to make the most of their procrastinating tendencies. I shall only say, to wind up this paragraph, that all wise gardeners who read this magazine—and all wise gardeners do read it—will begin at once to secure a few good varieties of red Currants to take the place in due time of all the trees of common red to be found in their gardens. When the better kinds begin to bear, take up all the common, and either give them away or burn them. Do the thing well and you will never repent; nay, you will often call to mind this word of advice, especially when paid by extra prize-money, and enjoying extra popularity through showing the best red Currants at the exhibition of fruits and flowers.

"Of white Currants, there are very many according to the names which exist, and there may be many without names. Who knows? To assert a negative is almost as dangerous as attempting to prove one. But for an affirmative I can say that I never saw but one kind, and that is *White Dutch*. For instance, *Jeeves' White* is *White Dutch*; *Morgan White* is *White Dutch*; *New White Dutch* is *White Dutch*; *White Grape* is *White Dutch*; *White Leghorn* is *White Dutch*; *Humber's White* is *White Dutch*. Confound those fellows who tack their own names to the things they had no hand in originating. It is worse than if they carved their names on oak trees and churchyard palings, and is of the same type of trickery as that of the seeds-

men who call Emperor Pea *Smith's Lightning*, *Brown's Instantaneous*, *Jones' Champion* and *Robinson's Hasty*, in order to make a little local fame, and at the same time get an extra sixpence or shilling a quart. The large bunches of white Currants you see at Covent Garden are White Dutch, and the reason why they are so large is because they come from the rich soils of Fulham and Bermoudsey, where the trees are pruned in Winter to mere stumps, every young shoot being cut back to about two inches. Do the same and you will have similar results, and that is the only way to win at exhibitions, and at home to secure the good favor of the ladies, with whom, by-the-bye, white Currants are always in good favor.

"As for black Currants, the same condemnation must be passed on the common kind as the common red deserves and has had. Turn it out and do better. As a conscientious man, I cannot help remarking that I am like the free and easy parson who said, 'Don't do as I do, but do as I tell you.'" I have in one part of my garden a dividing fence much overshadowed with trees. It is a spot where ornamental trees would be lost, even if the shade did not prove fatal to them. There I have a grand row of black Currants of the common sort—fine, old long-legged trees that are tied in to stout galvanized wire, and the produce is so acceptable for jam that it will be a long time, I expect, ere I sweep them away and put better kinds in their stead. In fact, the common black is very good, but there are two that beat it, and those two you ought to have. The best of the two is *Ogden's Black*; it surpasses common black in every way, and is quite as hardy; it produces finer bunches and finer berries, and has a fine, rich flavor most acceptable in that best of invalid's delicacies, black Currant jam, which possibly many folks who are not invalids can relish in a tart or on a biscuit with a glass of good brown sherry. *Black Naples* is finer still every way, but not so hardy, so those who live in very cold places must not depend upon it till they have given it a fair trial. It is a fine, large berry, rich and juicy, better flavored than any other of its class, and if grown in rich, moist soil;—black Currants require a rich, moist soil,—drainage is almost of no consequence—the berries come of immense size, and resemble the little black Cherries (merries) that are so much esteemed by snug people for preparing that esteemed liquor known as Cherry gin. It is very odd that with such fine sorts to choose from, people should be so quietly content with sorts that are comparatively worthless; yet so it is, and the day is yet to come when Currants will be as proper-

ly cared for as Peaches, Nectarines and Grapes. But it will come; it is one of the necessities of the 'good time coming.'"

[It is worthy of note that the "Prince Albert" is omitted from this list—what we have seen as P. A. is a miserably small and poor thing. Is there a variety under this name really good for anything as represented in our papers years ago?—ED. G. M.]

THE APPLE OF SODOM.—*Solanum sodomium*, found by Sibthorp in Sicily, of which a splendid figure is given in the *Flora Græca*, is a native of Africa and Syria. It obtained its name from being regarded as the plant which Hasselquist had identified with that bearing the famous Apples of Sodom, described by Josephus and by Tacitus as fair to the eye, but when plucked dissolving into dust and ashes. But for this identification Sibthorp must be regarded as an insufficient authority, as he never visited the Holy Land, and the species commonly met with at the Dead Sea is the *Solanum coagulans* of Linnæus, the *S. sanctum* of Forskahl and the *S. Hierochunticum* of Dunal, described by the latter in *De Candolle's Prodrômus*. Robinson, therefore, in his "Biblical Researches," appears to be mistaken in naming it the *S. Melongena*, a name given by modern botanists to a whole section of the Solanææ, and not to the particular species which represents the true Apple of Sodom; nor does he seem warranted in adopting the suggestion originally thrown out by Seetzen, that the latter plant was an *Asclepias*. It is true that the *Asclepias gigantea* or *procera*, the Osher of the Arabs, is found in a few places on the borders of the Dead Sea, and its fruit, when opened, contains nothing but a dusty powder. According to Robinson, too, it resembles a large, smooth Apple or Orange, hanging in clusters of three or four together, and when ripe of a yellow color; if so, differing greatly from other members of the *Asclepias* tribe, whose seed-vessel certainly bears no sort of resemblance to either of these fruits. But I am assured on good authority, that the *Asclepias* alluded to is an extremely rare plant in that locality, whilst the *Solanum* is very common; and the interior of the Apple of the *Solanum* just mentioned is likewise, it is said, frequently converted into a powder-like dust, through the puncture of an insect. Upon the whole then, I am inclined to adhere to the older notion, that the latter was the plant intended.—*Daubeny's Trees and Shrubs of the Ancients*.

PROFITS ON MUSHROOMS.—Recently at the Sheriff's Court, Red Lion Square, before Mr.

Humphreys, coroner, as assessor, and a special jury, a compensation case, "English vs. the Metropolitan Railway Company," occupied the Court nearly the whole day. The claim was for 716*l.*, in respect of premises and business as a nurseryman at Kensington. It appears that the claimant, Mrs. English, widow of Mr. English, who had carried on the business for years, was a Mushroom grower, and had a number of beds. The railway had taken possession of the ground, and a loss had been sustained. It was stated in evidence that the profits on Mushrooms amounted to from 100 to 150 per cent. One witness said if 50*l.* were expended in twelve months, or perhaps in six months, the sum realized would be 200*l.* Several witnesses were called on both sides, and the assessor, in placing the case before the jury, remarked that the profits on Mushrooms had, no doubt, surprised them. In addition to the compensation for the place, the jury could compensate the claimant for the loss of the business, and also in reference to the profits on Mushrooms. The jury eventually assessed the compensation at 250*l.*—*London Gardener's Chronicle.*

MODE OF OBTAINING NUMEROUS BUDS ON CAMELLIAS.—To produce this result, and obtain fine healthy Camellias, which will remain in flower from the month of December to April, they should be repotted directly they have ceased flowering, and before their fresh buds appear, which else would be sure to suffer. The most suitable soil is that formed by a mixture of one part fat loam with two parts peat-mould, combined with the necessary quantity of sand. The Camellias are kept warm and under cover until their new roots begin to shoot forth. They must be but moderately watered at the root, but constantly and abundantly syringed all over. As soon as the young roots begin to be firm in the earth, the plants will require a much greater quantity of air, and in a very short time these new roots will cause them to develop vigorous branches, on which the flower-buds will form, and on no account must the plants be placed in the open air till these buds have attained sufficient development. From the commencement of July to the end of August the Camellias may remain out of doors; longer is not advisable, since in our climate the later days of Summer are subject to heavy rain.—M. DAMANN, Horticulturist, of Gorlitz.

THE GREAT WORLD'S EXHIBITION IN LONDON.—The Correspondent of the *World* gives the following rather fancy sketch:—The Prince and Prin-

cess of Wales were amongst the earliest to view this truly wonderful display, both of fruit and flowers. The Prince, it was said, admired the *radishes* most—*and much merriment was caused by the rumor—but when it was known that it was the new Java radish, which he had so greatly admired, we were amazed, and general curiosity became concentrated on this extraordinary plant, which, it is affirmed, will eventually become one of our cheapest and most useful vegetables en attendant; the seeds are still sold at one guinea per seven. I think I describe the Java, or "rat's tail radish," to you, in one of my former letters. I will, therefore, spare you a repetition, and proceed at once to the strawberries and grapes, which are the finest I ever saw. On one plate, each strawberry had cost the exhibitor one guinea to rear. He is a poor man, this exhibitor. To him, his plateful of strawberries is more valuable than all that is in the tent; for, besides the ill-spared gold that he lavished on each fruit, he counts his days, his months of labor, ere he brought it to perfection. On the first night of the show, with the quick eye of love and fear, he sees that one is missing! Who could describe the agony on that poor man's face! He could not speak—but in the sudden and intense surprise of grief—he wept! Yes, the gardener wept for the loss of his so hardy-reared strawberry, as a mother would have wept for the loss of a beloved child! And it was one of the great ladies, one of the *elite* of society, who had stretched her aristocratic hand toward the tempting fruit—and with the haughty *nonchalance* of rank had tasted it—then smiled at her own impudence. She is known, however; and, doubtless, has paid for her tasting propensity—but I would have had her name publicly announced, as a warning to future would-be depredators. No punishment should be too great for so wilful and heartless a robbery. Had her example been followed by the many thousands there, not a tree or flower could have remained intact. But enough. Let us go to the other tents. Here you have azaleas, whose height and circumference are a theme of wonder to the botanists of all nations, as also are the variegated geraniums and the variegated rose, (the first of the kind ever exhibited;) the perfumes from the exotics were almost too strong to bear; the sweetest scent being decidedly that of the *Lilium auratum*, a plant which costs from twenty to thirty guineas each; the first bulb indeed, of the *Lilium auratum* cost the introducers, Messrs. Veitch & Sons, no less than 1,200 guineas. Talk of the tulip days after that! Messrs. Veitch & Sons, by-the-bye, carry off nearly all the prizes, their foreign rival being Mr. Linden of Brussels.*

MODERN HISTORY OF THE CHRYSANTHEMUM.—

In 1846, a new era commenced in the history of the Chrysanthemum, for at that time Mr. Fortune brought from China two small-flowering varieties, known as the 'Chusan Daisy and Chinese Minimum.' These were similar, in size, to those now called Liliputians, and were probably varieties from the true *C. Indicum*, of Linnaeus, or *Matricaria japonica* of Kœmpfer, a plant of which (as previously noticed) grew, in 1764, in the Botanic Garden at Chelsea. These would, in all probability, have shared the fate of their predecessor had they remained in England, for although Mr. Fortune admired them in Chusan, they were considered too small and insignificant for English taste. The French opinion of them, however, was far different, for immediately upon their introduction, in 1847, into the already well-known collection at Versailles, the little Chusan Daisy became a favorite. From these two varieties have sprung all the Pompons now in cultivation. Chinese Minimum was a dark, double flower, and produced but little seed, while the other, with its daisy-like, semi-double flowers, seeded freely the first year, and the result surpassed the most sanguine expectations; the seedling flowers being more double than the original, and from their compactness and resemblance to a rosette, received the name of 'pompon,' and were called Pompon Bijou, P. Chapeau Rouge, P. La Liliputien, P. Le Nain Bébé, P. Petit Poucet, and P. Tom Pouce.—*Cottage Gardener*.

POETRY OF THE IVY.—The ancients held the Ivy in great esteem. It was consecrated to Bacchus, who is represented as crowned with it; and it was often twined with laurel and the vine in the poet's wreath. Milton speaks of the "Ivy-crowned Bacchus," and Pliny informs us that it was the yellow-fruited Ivy which was consecrated to the God of Wine, and also destined to crown the poets. When Bacchus was seized by the pirates, his presence was made manifest by many wondrous changes that took place in different parts of the vessel, which Leigh Hunt thus translates from Homer:

"For first a fountain of sweet-smelling wine
Came gushing o'er the deck with sprightly shine,
And odors, not of earth, their senses took;
The pallid wonder spread from look to look.
And then a vine tree overran the soil,
Its green arms tossing to the freaksome gale;
And then an Ivy, with a flowering shoot,
Ran up the mast in rings, and kissed the fruit
Which here and there the dripping vine let down,
On every oar there was a garland Crown.

THE UPAS TREE.—This, though an unpretending, is, from the associations that fable and poetry have

connected with it, one of the most interesting plants in British collections. The leaves are ovate, about 3 inches long, pointed and hairy, and exude so venomous a juice from the end of the petiole when gathered, that if incautiously placed in the hat for safe conveyance home, should the skin of the head be touched by the juice, the roots of the hair are destroyed, and a bald place is left! It is scarcely necessary to say to any intelligent reader of books, now-a-days, much less to a botanist or to a gardener, that the qualities assigned to the Upas tree, are, in a considerable degree, not possessed by it. Though the sap and products are deadly, the tree gives out no exhalations of a poisonous character, nor does it blight or affect anything in its vicinity. Death, when occasioned in the neighborhood of the Upas, came, not of the tree, but of certain effluvia that arose from the ground, probably carbonic acid gas. The two things have no more connection as to cause and effect than the Goodwin Sands and Tenderden Sceptle. Such tales do capitally, however, to horrify an audience fonder of platform harangues than of facts; and the Upas tree will no doubt remain for ever a stock image with soul-harrowing declaimers.—*Journal of Horticulture*.

ORIGIN OF THE YELLOW PITMASTON NECTARINE.

—In 1815, the late Mr. Williams, of Pitmaston, planted stones of the Elruge, which has a white flesh and small flowers, and one of these produced a tree which gave large, beautiful flowers, and was called the Pitmaston Orange Nectarine. It was the first full-sized orange Nectarine known in England. I planted stones of this sort in 1856, which, in due time, bore fruit nearly all identical with the parent. One, however, large and ten days later, I named the Pine Apple Nectarine, owing to its flesh being transparent like the Pine. In 1862 I planted stones of this sort, but the young trees gave slight hopes of deviation. In 1865 several bore fruit, all alike their grand-parent, the Pitmaston Orange Nectarine, and were laid aside, till one day my attention was drawn to two very beautiful Peaches hanging on one of the trees. Here we have the fourth generation of the Elruge Nectarine, and it proves to be a large and late Peach.—RIVERS'

DESIGNS FOR THE DINNER TABLE.—A few years ago the London Horticultural Society offered premiums for the best designs for dinner table decoration, and since then great attention has been given to the subject in England. Hitherto the greatest objection to the prevailing designs has been interfering with a full view of the table,—and the object

now is to produce the prettiest styles that will not interfere with the line of sight. At the recent grand exhibition of all nations some very pretty objects were shown. Sketches of some of the chief ones have been furnished by the liberality of the

editors of the *Cottage Gardener*, one of which, the third premium one, we engrave. The chains are of heavy glass, care is necessary in arranging the central and top groups of flowers or the sight across the table will be obstructed.



Horticultural Notices.

DISCUSSIONS OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

Dr. Warder's excellent essay on pruning was well attended. At its conclusion the President enquired whether street trees did not require a special rule

of pruning from which other trees might be exempt?

Mr. Meehan.—Street trees were usually selected for their rapid growth without regard to other characters. They soon grow too large, and this was sought to be remedied by annually heading back, but the trees only grew the faster for the pruning, got out of shape and out of character, and eventually became unsightly objects, and were at

last generally cut away. It were better to employ trees like oaks, which always remained bushy and dense, required no trimming to keep in shape, and though taking a few years more to grow up, were permanent when once grown.

When covered with eggs of insects, trimming of the small branches might be resorted to, so that the main branches might be washed with sulphur and lime water.

He referred to a fact long ago announced by himself, and recognized now by most intelligent gardeners, but not yet incorporated into standard works on Vegetable Physiology or theories of Horticulture, that the roots of trees die in proportion to the severity of the pruning of the top. This was the reason why street trees continually trimmed at the top, often leaned over, they had no root to support a heavy head.

Mr. D. Rodney King referred to the difficulty of transplanting some trees, in which pruning may be made to bear a very useful part. Some trees, like Oaks, Gums, Tulip trees, Chestnuts and Hickories, especially when taken from the woods, often failed,—but when severely pruned growth was the rule with them.

Mr. A. W. Harrison said what was true of deciduous trees, was also the case with Evergreens,—all kinds of Evergreens were assisted by trimming back, when there was questions about their living,—although he thought pruning much to bring trees into shape was eventually pernicious to the general health and natural beauty of the tree.

MR. SAUL'S ESSAY ON ROSES, JULY 3D.

Every one was so interested with their families, in preparing for the patriotic ceremonies of the *Fourth*, that the attendance was smaller than usual.

The President invited Mr. Meehan to give his views on the subject, who said that he agreed pretty much with the essayist, except that but for the purpose of rapid propagation of new Roses, he would not go so far as the essayist in recommending the Manetti stock. Weak varieties certainly grow better on it,—but the list of Roses was so large to choose from, that weak growers might as well be discarded.

In protecting Roses in the places where they grew, he had found manure and other stuff retentive of moisture worse than full exposure. He cut off the tender tops late in Fall, then put on some small, close branches of Evergreens, Red Cedar being particularly good, and on this several inches thick of earth, forming mounds which threw off the water; and even such tender kinds as Bougere,

Celine Forestier, Madame Damage and others got through very well the past hard Winter.

Dr. Warder, of Cincinnati, being present, was invited, by the President, to take part in the discussion, and after expressing his agreement with the last speaker on the Manetti Rose question, made an eloquent argument on behalf of the Prairie Rose, and the June and Summer Roses.

Annual Roses may continue in bloom till the 4th of July by having 6 or 8 inches of their growth cut back. Certainly they could easily be had for six weeks. No class was their superior in beauty or fragrance.

The Michigan Rose was the parent of the Prairie Rose of our gardens. They were admired even by the Indians. They would run over the tallest trees, and make a blaze of beauty and a scene so gorgeous that no other class of Roses could effect,—and the Rose gardens of America would look mean and despicable without them. Writers affected to despise the Prairie Rose, but no garden could do without them, every one had them. Frequently when only one Rose was employed that Rose was a Prairie.

Laura Davoust, the most popular of the European climbing Roses, looked mean and contemptible along side of the meanest variety of our Prairie Rose. It was, no doubt, susceptible of much greater improvement than had yet been accomplished for it. The Indians had a high regard for the Prairie Rose, and it was found near their settlements often in a double state, showing that even when wild it had a tendency to vary.

Mr. Eadie described how Roses were raised by some growers so as to increase them rapidly by the forcing process. They were planted in large pots or set in beds in a heat, in Summer, of from 100° to 120°, and layered as they grew. Thousands of weak, young plants could be raised in a year this way, which, in time, would make good plants.

NOTE.—The award for basket of Dried Flowers of Penn. Hort. Society, for May, should have been to Mrs. Harris, not Mrs. Anna Williamson.

PENN'A. FRUIT GROWERS' SOCIETY.

As announced in our columns, the summer meeting of this Society, (formerly Eastern Pennsylvania Fruit-Growers,) was held at Pittsburgh on the 13th and 14th.

On account of the meeting of the Pennsylvania Horticultural Society on the 12th, we did not get to Pittsburgh until a few hours before the adjournment, we are, therefore, indebted to the notes of our friends, principally, J. J. Thomas, of the *Country Gentleman*, for our account of the first day's proceedings.

Friends were there from New York, New Jersey, Ohio, Indiana, Illinois, Missouri, and Maryland, as well as from the various districts of Pennsylvania. From conversations with these gentlemen we learned that, except in New Jersey, fruit crops have been almost a total failure this year. Dr. Warder said the scarcity at Cincinnati was such that Strawberries that usually brought from 3 to 5 cents per quart, (pretty low if reported right,) brought this year from 30 to 50 cents. The *hardy* Raspberries, as well as the "other" kinds, had been killed by the winter. The Grape crop was the only one promising much.

Dr. Massey, of Maryland, said there would be about one-third of a crop of Peaches. Pears and Apples were better.

E. Sutherland, of Montgomery County, gave a discouraging account of all his fruit crops.

Parker Earle, of Cobden, Illinois, referred to Dr. Hunt's orchard, who grows Peaches and Plums on alternate trees. The curculio has a preference for the Plum. By perseverance in the jarring process, moderate and profitable crops were obtained regularly.

J. M. Jordan, of St. Louis, spoke favorably of the Grape crop there, especially Concord. Strawberries and Cherries nearly failures.

An interesting discussion on the merits of underdraining, in connection with profitable fruit-growing, took place between A. W. Harrison, J. J. Thomas, and others, in favor of extensive underdraining, and Charles Harmer against its use in any but swampy places.

The main point of Mr. Harmer was, that where crops were as "nearly perfection as they could be," underdraining, though perhaps making things a little better, would not be enough so to make it a profitable investment.

The main point of the opposition was, that the "little better" of Mr. Harmer was really much better, and "that underdraining paid" in any case.

No one could, of course, think of stopping at Pittsburgh without visiting the world-renowned Knox Fruit farm. Every one went there.

We should suppose those who saw this celebrated place this season for the first time must have been considerably disappointed. The impression was so prevalent that Mr. Knox was especially favored by nature with a soil, a climate, a sulphurous and smoky atmosphere, and other things fancied to be the *sine qua non* of fruit growing, that very little credit has been given him by his contemporaries for "virtue" in his system of management. The present season has shown his situation to be as vulnerable as any other one.

The Knox farm, of 1866, was no more like the Knox farm, as we saw it in 1865, than a monkey is like a man. Indeed, it would be easier for a "progressive development" savant to show the relations of the monkey to the man, than it would be for us to trace the connection between the appearance of things this season here and the same things last, if we had not been there, and had not we seen for ourselves.

We were both sorry and glad to find things in this condition,—sorry for the sake of the Pittsburgh Commissioner of Internal Revenue; and, for the matter of that, for Knox's own sake, for he is a pretty good sort of a fellow, while his example has been of incalculable value to fruit-growing all over the Union,—and yet glad because it shows that fruit-growing is just as likely to be successful any where as it is at Pittsburgh,—all locations being evidently liable to occasional mishaps, and none being especially favored as a Paradise for the purpose.

Another thing interested us at Knox's. Last year the Jucunda Strawberry came in comparison with several other varieties. The merits of each had to be carefully weighed, and the balance deliberately thrown in favor of Jucunda. This year "comparisons were odious;" at least they should be to the Jucunda, had it any power in the matter, for the others were not even in pomological language, "good," while, bad as all other things were, Jucunda was still a very pretty sight to see. Had it not been for Jucunda this year, we fancy the Knox Strawberry treasury would have been bankrupt.

So with Grapes. The Concord was doing beautifully.

"O'er all the ills of life victorious;"

While if there be any good meaning to the classical *Stat Magui Nominis umbra*, it was well illustrated by the miserable looking Delawares, Iona's, Adirondac, &c., each of which truly "stood a shadow of a great name."

It is much in the favor of the Jucunda Strawberry and Concord Grape, that they should do so well here, when others so nearly failed.

Mr. Knox seems to be largely in the Currant line,—acres of these were looking remarkably well, and will pay him handsomely for losses in the failures of other crops; although the extra prices for short supply will perhaps make up somewhat. The best pick of Jucundas brought \$1 per quart during our stay in Pittsburg, against 75, as we saw them last year.

THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
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Hints for September.



FLOWER-GARDEN AND PLEASURE-GROUND.

Attention should be given at this season to the flower-beds, by noting what has done well in one locality as a summer-blooming plant, as no time should be lost in procuring a stock for next year.—The best way to propagate all the common kinds of bedding plants is to take a frame or hand-glass and set it on a bed of very sandy soil made in a shady place in the open air. The sand should be fine and sharp, and there is, perhaps, nothing better than river sand for this purpose. The glass may be whitewashed on the inside, so as to afford additional security against injury from the sun's rays. Into this bed of sand cuttings of half-ripened wood of the desirable plants may be set, and after putting in, slightly watered. Even very rare plants often do better this way than when under treatment in a regular propagating house. In making cuttings, it is best to cut the shoots just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong-growing things, such as Geraniums, Fuchsias, &c.

Small-growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their way under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however, hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings,

they may be inserted with a dibble; but where many are to be put in, it saves time to mark a line on the sand with rule or straight edge, and then cut down a face into the sand, say one or two inches deep, when the cuttings can be set against the face like box-edging. All amateurs should practise the art of propagating plants. There is nothing connected with gardening more interesting.

In many parts of the Northern States the leaves will have changed color previous to the incoming of winter, and the planting of trees and shrubs will commence as soon as the first fall showers shall have cooled the atmosphere and moistened the soil. Further south, where the season will still remain "summer" a while longer, the soil may, at any rate, be prepared, that all may be in readiness when the right season does come. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. In fact, if planting cannot be finished before the beginning of November in the Northern and Middle States, it is better, as a rule, deferred till spring. In those States where little frosts occurs, this rule will not apply. The roots of plants grow all winter, and a plant set out in the fall has the advantage over spring-set trees, that its roots in spring are in a position to supply the tree at once with food. This is, indeed, the theory fall planters rely on; but in practice it is found that severe cold dries up the wood, and the frosts draw out the roots, and thus more than counterbalance any advantage from the pushing of new roots. Very small plants are, therefore, best left till spring for their final planting. The larger things, and which we recommend planting in the fall, should be pruned in somewhat at planting. The larger the tree, the greater in proportion should it be cut away.

Those who have no greenhouse, and yet are desirous of preserving many half hardy plants through the winter, employ *cold pits*. Choose the driest 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 re-

quired, and about five feet wide, so as to accommodate six feet sash. The inside of the pit may be built up of boards, or, if something more durable and substantial is required, brick or stone. The body of the frame may be built up a few feet above the level of the surrounding soil, and the earth which comes from the pit be employed in banking up to the upper level of the frame. Shelving should be made for the inside so as to extend from the base of the front to nearly the top of the back, on which to place the plants in pots. In the space which will then be under the staging, hard wooded and deciduous plants, as Lemon Verbena, Fuchsias, &c., may be safely stored, while the more succulent kinds are shelved overhead. The plants to be preserved in such a pit should be potted early, and be well established and healthy before being pitted; much of success depends on this. The less water they can be made to live on without withering through the winter the better they will keep. Straw mats must be employed to cover the glass when freezing time commences, and when the thermometer is likely to fall below 20°, straw or litter should be thrown over. Board shutters are also excellent, as it keeps the snow out from the straw and litter, which sometimes makes the mats very awkward to uncover when we would like to give air. Very little light or air will be required through the winter, when the plants are not growing. If a good fall of snow cover the pit, it may lie on undisturbed for two weeks or more without injury. When a warm dry day offers the sashes may be raised if convenient, to dry up the damp. Many kinds of border plants can be kept over winter this way with little trouble.

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.

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 deciduous 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.

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.

It requires some judgment to gather fruit properly. Most of what we see in market of pears or apples are gathered too soon, while the amateur goes into the opposite extreme of leaving them on too long. The proper time to gather them is when they part easily from the tree on being gently raised up. But fruit-gathering ought to commence very early in the season, namely, as soon as insects have evidently damaged the fruit. An amateur should go over his apple and pears once a week after they reach a respectable size, and take off all the unfortunate specimens, which should be handed to the cook, or sent to market. This process would have a tendency to keep down the number of insects, by destroying their larvæ before they reach their final stage of development. At this season nothing will be left on the tree but perfect fruit. They should, of course, be all carefully gathered by hand, and great care taken to have none of them the least bruised. They should then, if summer fruit, be placed in a cool room, and a cloth thrown over them for a few days, when those who never ate an early apple or pear before so treated may wonder to what species of fruit it belongs. Late fruit must, of course, be left on as long as possible, so that frost does not injure them; but all kinds should be occasionally tried by the lifting process we have des-

cribed, and taken off at the first sign of maturity they afford.

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 be 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 removed. The best runners come from young plants of the previous year,—old plants usually make feeble runners.

HOT AND GREENHOUSE.

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 azaleas, rhododendrons, oranges, &c., 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. Weigela 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 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, must not either 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.

In the hothouse, the *eschynanthus* 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. Achimenes and gloxinias, as they go out of flower, should be kept dryer and cooler. Look well after a good stock of pentas, cestrum and habrochamnis; they will go far towards keeping up the interest of the department in winter. Justicia 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, catasiums, &c., 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, laelia, broughtonia, &c., 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 offered, than to syringe orchids just so much as will barely keep moss attached to their block 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°.

Ornamental annuals for winter-flowering should be at once sown, not forgetting Mignonette, to be without which will be an unpardonable sin. Chinese Primroses, Cinerarias, Calceolarias, Pansies, Polyanthus, &c., should be sown. Winter-blooming Carnations and Violets should not be forgotten. They are now essentials in all good greenhouse collections. The Calla Ethiopica, old as it is, is an universal favorite, and should now be repotted, when it will flower through the winter finely. Oxalis, Sparaxis, Cyclamens, and such Cape bulbs that flower through the winter, should be repotted now. They are an easily grown tribe of plants, and should be in more favor.

This is emphatically the Dahlia, as the next is to be the Chrysanthemum month. Dahlias have not grown much through the drought, and better not; now that September has come, they should be stimulated to grow, by copious waterings, and fine flowers will be the result.

It is a very good time to look around for soil for potting purposes. The surface soil of an old pasture forms the best basis, which can be afterwards lightened with sand, or manured with any special ingredients to suit special cases, as required. The turfy or peaty surfaces of old wood or bogs also come very "handy." A stock of moss should also be on hand for those who croek pots, in order to cover the potsherd; moss also comes in useful for many purposes connected with gardening, and should be always on hand.

Communications.

NEW JERSEY FRUITS.

BY WM. PARRY, CINNAMINSON, NEW JERSEY.

Read before the Pa. Hort. Society, Aug. 6th, 1866.

In speaking of New Jersey Fruits, I propose to mention some of the leading varieties that have originated or been first noticed here, as well as those which by repeated trial are found to be well adapted to our soil and climate, and may be planted with confidence by those who are not acquainted with the long list of new kinds that are highly praised and offered for sale.

First and most important among the small Fruits is the Strawberry, the consumption of which has so rapidly increased as to require hundreds of acres of land devoted to its culture, giving employment to many thousands of laborers, who derive their main support for services in cultivating and gathering small fruits in the summer season. We claim for

New Jersey some of the most valuable varieties in cultivation of largest size and productiveness, great hardiness and endurance under exposure to severe weather.

French's Seedling, the largest early Strawberry, very productive, plants vigorous, enduring the extremes of heat and cold without injury, succeeds well on thin soils, where other varieties requiring high culture, fail; Size uniform from three to four inches in circumference, ripening early enough to bring \$1 per quart in market, and to yield \$500 from five acres of land at a single picking.

But of all the Strawberries ever yet produced in New Jersey or elsewhere, *The Agriculturist* seems to combine more good qualities than any other, and as its name implies, is destined to cover broad acres, and supply the million with its luscious fruit of monstrous size, averaging from three to five inches in circumference, good quality, firm enough to carry well, and has a very attractive appearance in market, and meets with a ready sale at the highest price. It is more productive here than Wilson's Albany under similar treatment and exposure. We have it growing on a variety soils, from light blowing sand to a heavy clay-loam, producing well in either position, varying only in the magnitude of its crops according to the strength of the land, although the bearing plants were severely taxed in producing runners, being planted four feet distant, in rows six feet apart, allowing twenty-four feet of surface to each hill, which was completely filled and matted over with young plants. Single hills with runners kept off are reported to yield a quart each.

This great Strawberry not only produces those wonderful crops in its native soil of New Jersey, but it is well adapted to general cultivation, as appears from the abundance of testimony in its favor. At the meeting of the St. Louis Horticultural Society, held 26th of last May, Dr. Edwards exhibited some very large specimens of the *Agriculturist*, Buffalo, Wilson and Green Prolific, and stated that the *Agriculturist* was the most productive variety with him, exceeding even the Wilson; and that he did not select the finest specimens, but took all that was ripe, and therefore his lot gave a good idea of the average size of this variety.

Mr. Paddleford exhibited very large specimens of *Agriculturist* and *Golden Seeded*. *The Agriculturist* was with him more productive than the Wilson, and its large, fine fruit commanded an extra price.

The Philadelphia Ledger, in speaking of the Strawberry and Rose Exhibition, held here on the 12th of June last, says: "The Strawberries were of the most delicious quality, and attracted the atten-

tion of those present. The new variety "*Agriculturist*," with berries as large as an ordinary sized peach, claimed the first notice and secured to the exhibitor the Premiums."

From Odessa, Delaware, we have favorable reports: Three plants of *Agriculturist* producing more runners than one dozen each of *Golden Seeded*, *Russell*, and *Fillmore*, and endured the Winter without protection; the soil a stiff clay, berries the largest ever seen there.

At the Annual Strawberry Show of the West Jersey Fruit Growers' Association, held at Moorestown, N. J., on the 9th of June last, the Committee appointed to examine the Strawberries on exhibition, reported: "the display of Strawberries was remarkably fine, although not so large as last year. Among the new varieties, we noticed a plate of *Agriculturist*, which for size and beauty we have never seen excelled, the largest measuring 5½ inches in circumference. This is the berry that was sent out as a Premium to the Subscribers of the *American Agriculturist*, and to all appearances it now bids fair to be what has been claimed for it; "*the largest and most productive Strawberry known.*"

On taking a vote of the members, on the five best Strawberries for general cultivation, each one being governed by his own personal knowledge, the *Agriculturist*, a new berry, received as many votes as the well known Wilson's Albany.

There are many other Strawberries originated in New Jersey possessing more or less points of excellence; such as *Boyden's Mammoth*, very large; *Green Prolific*, very productive; *Great Eastern*, forms large stools, and few runners, and is well adapted to hill culture, yielding profusely of large handsome fruit when thus treated.

Lady Finger, large, handsome, fine, bears carriage well, and very popular in market, but not always productive enough to be profitable for general cultivation.

New Jersey Scarlet; early, firm, and good quality.

Starr's Seedling; very handsome and prolific, and a whole column of good things are promised to come with *Durand's Seedling*, for which subscriptions are now being received at the rate of Twenty-five dollars per hundred.

The Strawberry Crop the past season was less than an average owing to the hard Winter and late frosts, which materially injured it.

Our patch of ten acres yielded 850 bushels. Last year they averaged 100 bushels per acre.

RASPBERRIES.—With this fruit, which follows immediately after the Strawberry, our markets have not been so well supplied. Of many thousands of

seedlings raised in New Jersey, most of them were deficient in some desirable quality. Plants that produced large fine fruit, were generally tender; other hardy varieties would yield inferior fruit.

Lindsley's Fastloff Seedling is, perhaps, the best that has been distributed, being hardy, large and fine.

But the finest specimens of a Raspberry is yet to be sent out, it was grown from the seed, in Burlington County, New Jersey. We examined the bushes on the 30th of June last: they were then loaded with ripe and green fruit of the largest size, finest appearance, and delicious quality, fully as large as the Hornet: a bright scarlet, and handsome as the Pearl Raspberry; they appeared to be hardy, having stood unprotected for three years past; but the owner values them so highly, he is not willing to part with them for less than ten dollars a plant, and we must look to some other hardy variety more easily obtained to supply the market with this luscious fruit.

After spending a quarter of a century in experimenting on over forty different kinds, embracing all the leading varieties in cultivation, we have adopted the *Philadelphia*, which originated in the State adjoining, and is perfectly adapted to our soil and climate, notwithstanding the extremes of cold and heat, varying from 16° below, to 105° above zero. Having thoroughly tested it with the best selected varieties that could be obtained either in America or Europe, such as Brinckle's Orange, Hudson River Antwerp, Fastloff, Knevet's Giant, Hornet, Franconia, Vice President French, &c.; and finding it superior to any of them in *vigor, hardiness* and *wonderful productiveness*, we consider it the *largest and best hardy Raspberry*; it is the *Raspberry for the Million*, requiring no extra care or culture, nor any protection whatever from sun or frost, but will flourish under the extremes of our climate, while other kinds are either parched up by heat or injured with the cold. The situation and character of the ground are not very material; we have it growing on light sandy soil, and heavy clay-loam, with a northern, eastern and southern exposure, and in every position it is perfectly healthy, yielding abundantly of large, fine luscious fruit, which sold readily at forty cents per quart, at wholesale, in market.

The Purple Cone, which has heretofore been considered hardy and reliable, was so badly killed by the severe cold of last winter, as materially to injure the crop of fruit.

The Kirtland suffered still more, and will be discarded.

The Miami Black is a good, hardy variety, and

very productive, but ripening at the same time with the *Philadelphia*, is not needed when the latter can be obtained.

Doolittle's Improved Black, being very hardy, productive and early, is the best variety we have to precede the *Philadelphia* in market. Of those two kinds, we have now growing, thirty-five acres for fruiting, and are discarding every year such others as prove to be of little value.

BLACKBERRIES.—New Jersey, justly noted for producing choice hardy fruits, now offers to the community two new blackberries, far surpassing any others ever before introduced here.

The Wilson Early and *Kittatinny*, seem to embrace about all the good qualities desired in Blackberries. Both are berries of superior excellence, and great acquisitions to our lists of small fruits. They resemble each other in many respects; both are hardy, large, luscious, and very productive; sweet, and ready to be eaten as soon as black, while still firm and solid enough to bear carriage without bruising, and retain their color well after picking, in which several particulars they are preferable to the *New Rochelle*.

Their principal difference is in the time and manner of ripening, which will adapt them to the wants of different classes of Fruit Growers. While for family use, it may be desirable to have fruit all the season, yet market men can appreciate the value of an extra early crop over an equally large one to be gathered through a longer space of time.

The Kittatinny originated in the mountains of that name, in Warren County, in the Northern part of our State, and was introduced to public notice by E. Williams of Mont Clair; it has the habit of continuing long in bearing, yielding its luscious fruit through a period of six to eight weeks. This property will make it a favorite with the amateur and private gardener, who grow little fruit for family use, and would not desire many bushels of Blackberries at one time.

The Wilson's Early is a native of Burlington County, and was first discovered by John Wilson, about the year 1854, and by him removed to the garden, where it was grown for several years before any plants were distributed. It has the habit of ripening its whole crop mainly together, and is principally over in two weeks, and before the height of other Blackberries come on; like the early Pea, its whole crop is gathered at a few pickings, while the price rules high. Therefore, it does not come in competition with any other Blackberry, but very happily precedes them all in market.

When grown by other varieties, it has always

yielded most abundantly, even surpassing the New Rochelle in productiveness. This year, some new patches planted distant from other Blackberries, did not fruit so well; this difference may be accidental, or, it may indicate that the pollen of other plants is beneficial in producing the best results.

I would therefore recommend planting the Wilson's Early, and Kittatinny, the two most valuable Blackberries, in alternate rows to insure the largest crop of fruit.

The Felton Blackberry, introduced a few years since by Oscar F. Felton, of Camden, N. J., somewhat resembles the Wilson's Early, though of entirely different origin, it is very early, large and sweet, coming next to the *Wilson's Early*, as a market fruit.

William F. Basset, of Hammonton, N. J., a very successful Horticulturist and critical observer of fruits, after a visit to our place, also to Charles and John S. Collins', wrote as follows: "We have visited Mr. Oscar F. Felton's place and made a pretty thorough examination of the Felton Blackberry, comparing them with the Wilson's, which we carried from Mr. Collin's, and we came to the conclusion that they were distinct varieties; that although there was a resemblance in several points, yet there were too many and decided points of difference to result from circumstances of growth, location, &c. *The Wilson grows more upright*, its fruit is born on *longer footstalks*, is *itself longer*, and *less variable* in quality as well as productiveness. We found as much difference in productiveness with Mr. Felton's plants, as with yours of the same variety: but on his place, the productive plants were scattered among the unproductive, with even less apparent reason for the difference, than with yours.

The Cumberland, largely cultivated by J. Cox, near Bridgeton, N. J., is a valuable market berry, of fair size, good quality, very productive, hardy, and well adapted to light sandy land, maturing its whole crop of fruit perfectly, within a short period of the time it commences to ripen.

The Cape May is a large and luscious berry, but loses its bright color soon after picking, and is not suitable for the market.

The New Rochelle, and Dorchester, brought from other States, find a congenial soil here, yielding from seventy to one hundred and fifty bushels per acre, and bringing generally from \$400 to \$500, and one patch last year, \$600 per acre. Some farmers have from twenty to thirty acres of Blackberries and are still increasing their plantations, finding them very profitable, requiring but little labor to grow them.

It is not only the cultivated plants, but the spontaneous productions, that represents the fruitfulness of our soil. Thousands of bushels of Blackberries and Whortleberries are gathered from the uncultivated lands through the Counties of Burlington, Ocean and Monmouth, and sent to New York where they find a ready sale at goods prices.

The Messrs. Perrine keep several mule teams carrying from forty to fifty bushels each, constantly hauling berries during their season of ripening.

Wm Bennett employs eight teams carting the berries, and pays many thousands of dollars for picking, and receives about double the amount for the fruit, in New York. Many others have two and three teams each, constantly employed in the business, each team average about four loads a week, of from twenty to twenty-five bushels each.

The Ocean Emblem enumerates twenty-nine teams, which at four loads per week make 116 loads, at twenty bushels each, 2320 bushels. The return at four dollars per bushel, amounts to \$9,280 per week for that section, and thought the picking would continue good for six weeks after the time at which that estimate was made.

CRANBERRIES. —The cultivation of Cranberries is now claiming much attention and to one not acquainted with the magnitude of operations in this branch, it must appear perfectly marvellous to witness the stupendous efforts in this branch of Agriculture. At Manchester, Bricksburg, Tom's River and other places, wherever there is a piece of land, worthless for other purposes, it is cleared, and Cranberry plants set out. From the best data at our disposal, the *Ocean Emblem* states: "we will venture the assertion that there is at least one million dollars invested in the culture of Cranberries in the County of Ocean." In Monmouth and Burlington Counties the cultivation of them is still more extended, and rapidly increasing. E. Humphreys, of Shamony, states that Cranberry culture seems to have been made a speciality with the owners here, they apparently having paid more attention to that than to any other kind of fruit culture. Portions of the bog have yielded at the rate of 250 bushels per acre.

This, at the price of Cranberries last Fall, would give the modest little sum of \$1,250 per acre. Cranberries, both cultivated and wild, grow in large quantities on every side of us. The amount of land in this County, suitable for Cranberries, is unknown, but it must be immense.

Wm. R. Braddock of Medford has about one hundred acres planted in Cranberries, twenty of which were in fruit last year, and yielded an aver-

age of one hundred bushels per acre; in all, two thousand bushels, which brought him, clear of all expenses, \$3 per bushel, amounting to \$6000 from the twenty acres in bearing.

Theodore and Alfred Budd purchased five years since, a tract of cedar swamp soil at \$10 per acre; they set it out in Cranberries and have since been offered \$600 per acre. Last year, twenty-eight acres of it produced 1800 bushels of fruit, worth \$4 per bushel, amounting to \$7,200.

Jos. C. Hinchman of Medford, has 50 acres nicely graded, turfed, and banked for flooding the plants, most set with Cranberries, those in bearing last year, produced about 1500 bushels; they appear to increase in productiveness for seven or eight years before attaining their greatest yield, as his first lot of ten acres planted seven years since produced last year 800 bushels, and from present appearance, will yield 1,000 bushels this year.

The harvesting is usually done by hand, each one picking from 3 to 4 bushels per day, for which they receive about 45 cents per bushel.

In other fruits, New Jersey has furnished valuable contributions. The richest and most delicious hardy Grapes, such as the *Delaware* and *Elsinborough* are natives of her soil.

Among Apples, the most valuable as well as the most generally grown of all fruits, where do we find such a list as furnished by New Jersey, among which may be mentioned the famous Monmouth Pippin, the original tree of which is still standing in John R. Perrine's orchard in Monmouth county; also, the Tewksbury Winter Blush, Roman Stem, Bellefleur, Maidens and Bachelor's Blush, Bullock Pippin, Lippincott Early Red, Lippincott Sweet, Chester and Kaighn's Spitzenberg Fall Harvey, Turn of the Lane, Bevan's Favorite, Roadstown Pippin Cumberland Spice, Summer Pearmain, Edward's Early Seek-no-further, and the great Orange Pippin of Monmouth county, the most popular Apple now grown, ripening the latter part of summer, and brings about double the price of any other apple in market at the same time.

PEACHES.—Of this delicious fruit, three of the most valuable for orchard culture originated in or near Middletown, Monmouth county, New Jersey, viz: Crawford's Early and Crawford's Late by Wm. Crawford, and the Smock Peach by Mr. Smock of the same place. Beer's Smock by Samuel Beers of Monmouth county. The Crockit's Late White was raised and first introduced not far from Middletown, New Jersey. Reeves' Favorite by Samuel Reeves of Salem, New Jersey, and Troth's Early Red, by Isaac Troth of Gloucester county, and

Smith's Seedling by Mr. Smith of Mount Holly, and Harker's Seedling by Charles M. Harker of the same place; Walter's Early and Honest John originated in Monmouth county, and the Lagrange by John Hulse of Burlington county, and Fox's Seedling is also a native of our State.

New Jersey is justly noted for producing choice Fruits, and it is that which gives the high value to her farm lands. The Census Report of 1850, shows that the farming land in the State of New Jersey, was worth eleven dollars per acre more than the farming land of any other State in the Union; and the Census Report of 1860 shows that the same lands, had advanced so rapidly as to be worth twenty-one dollars per acre more than in any other State. Hence, we find that people who desire to follow the interesting healthy and profitable business of raising fruit for market, come from other States, from the east and the west, to settle here, and take hold of our uncultivated lands, subdue the forest, and make it to blossom like the rose, yielding abundance of Fruit and Flowers. As an illustration, I may name the thriving towns of Hammononton, Elwood and Egg-Harbor City, on the Atlantic Railroad; Vineland and Franklinville, on the West Jersey Railroad, and Manchester, Bricklury, and others on the Raritan and Delaware Bay Railroad. Places that have sprung up within a few years, and since the construction of the new railroads on which they are located, laid out in small farms, of from 5 to 10 acres each, especially for the purpose of growing Fruits, which they are doing successfully.

At Hammononton, they commenced cultivating Strawberries in 1863, and in 1865, the crop sold for \$32,500; this year as in other places, the Strawberry plants were badly injured by the extreme cold and late frosts, and did not yield so well. They have 160 acres cultivated in Dorchester and New Rochelle, Blackberries; some of which yielded 90 bushels per acre last year, and are doing well again this year.

Four years since, (in 1862,) I rode over the ground now occupied by Vineland, then a forest, with but one dwelling house within many miles, in company with the enterprising proprietor, C. K. Landis, who informed me that he proposed to lay out and build a town there. This year I again visited the same place, and saw some of the wonderful growth and advancement of that new settlement, where but four years since, it was all a wilderness, and now a large thriving town with broad Avenues, lined with shade and Fruit trees, intersecting each other at right angles, and extending from six to ten miles

in either direction, so that it would require a drive of over 200 miles to see the improvements already made. Stately mansions, beautifully ornamented with gravel walks and flowery lawns adorn the place, with no rude fencing for divisions or inclosures as seen elsewhere, as cattle, swine and inebriates are not allowed to run at large and destroy the property of others.

Their municipal regulations are so correctly formed and strictly enforced as to invite moral, intelligent and enterprising people to settle among them, but offers no inducements to those of a different character. Large founderies and factories with heavy steam power are being erected. Churches and school houses with the most ample provisions for the thorough education of all their youth are well attended.

A Horticultural and Agricultural Society and a Fruit Growers Association, have their weekly meetings attended by over 500 members, and discuss in an interesting manner, all matters pertaining to Fruit Growing, Gardening and Farming, the proceedings of which are regularly published in the *Vineland Weekly*, a document of eight pages, and thus placed before all the inhabitants of the town, numbering now over 7,500 persons. Where shall we look for a parallel to this?

The amount of Fruit now grown there and at other places in New Jersey is immense, and indicates what may be expected when the resources of our State shall become fully developed. Located between the two great cities of New York and Philadelphia, with the most favorable soil and climate that can be obtained; the value of New Jersey lands for Fruit Growing must still advance, and it become the garden spot of our Union.

A REPLY TO D. W. ADAMS, ON COLOR AND HARDINESS.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

When the collection and classification of facts establish new theories, even in harmony with natural phenomena, we find many persons oppose them because they either do not carefully investigate the subject or consider it unworthy their attention. Others oppose them on the ground of prejudice alone. This has been the destiny of many an important discovery. We cannot expect to be exempt from this ordeal. We anticipated it, and even expected more opposition than we have received. The subject has been carefully considered and thoroughly submitted to experiment before it was published.

We were all aware of the few apparent exceptions, and the arguments likely to be based upon them. We even named some of those varieties, and have been explicit in defining our position. Yet with all this care, the *Editor of the Gardener's Monthly* is the only person we know of who appears to understand our premises. For further consideration, we will briefly state a few propositions which may better illustrate our views:

First: No variety of any species of either kingdom can produce offspring more healthy and hardy than their parents.

Secondly: All animated nature is tending towards degeneracy and extinction, to give place to new orders and species.

Thirdly: Color is a true indication of the health and hardiness of both kingdoms, other conditions being equal.

Fourthly: Dark color of bark, buds, foliage, flower, fruit and seed, is an index of health and hardiness; and light color of debility, disease and degeneracy.

Fifthly: Colors, as a general rule, do not change or variegate in their offspring to darker colors than their parents, but lighter.

Now, in reply to Mr. Adams, we would say that no exception to a general rule can be taken to establish a contrary. It may weaken or invalidate a general rule in proportion to its frequency, but cannot be taken to form the rule itself, as we would infer from his expressions. He says, "I will refer you to a list of varieties that will prettily illustrate the converse." That is, he has given a list of light colored varieties, in the exact sense in which we have given dark colored varieties with all their characteristics of health and hardiness. Here we would be willing to let the whole controversy rest with the public to decide if our opponent had fully considered the subject and had made the best selections that could have been done, and fully understood our premises, but as he says, "perhaps I do not fully comprehend it," and his attention has just been called to the subject latterly. We fear the public would demand a more experienced person, and one who does comprehend our theory. Although he has "grown trees for the last nine years, by the 100,000," and his very sure and somewhat extensive experiment qualifies him to speak."

We do not pretend to say his experience is of no account, it is valuable as far as it goes, in illustrating the effect produced by *severe cold* at his location. That being but *one condition*, does not cover the whole ground of our premises of *health and hardiness*.

As regards Mr. Adams "extensive experience qualifying him," we would say that our observation extends over twenty years; the last ten has been nearly entirely devoted to experiment and demonstration, at a cost of over \$12,000, and a loss of more than half a million of plants and seedlings of different species, and more than a thousand varieties.

In different locations, under similar and dissimilar conditions in a varied temperature, from 35° below zero, to 115° above, with sudden changes of 60° in twenty-four hours, and frequently 10° in as many minutes.

Under a scorching sun and hot current of air and continued drought the whole season, to a low temperature, and a humid atmosphere, with continued showers of rain. In the dark, in the light, in the sun, and in the shade, with water, and without; below the freezing point on tender plants, and the results compared with observations of others as far as they could be ascertained. If ever there has been a fact established, it is this, (which nearly covers the ground of our position,) that the lightest colored plants or animals of any species, are not equal in health and hardiness to the darkest colored of the same species, other conditions being equal; whether it is caused by want of attention or defective constitution, and that the first variegation or change to light color in either parents or offspring, shows incipient disease or degeneracy, and that being the case, they are not adapted to the same *vicissitudes* of climate, and are not as *productive, profitable and satisfactory* without extra care and attention, consequently cannot be as *valuable and popular*.

To fully and clearly settle this subject, the lightest colored offspring of the same parentage should be selected with the darkest colored, and their offspring should be selected in like manner for several generations, and the results compared.

There are several important points which should be remembered in discussing this question, viz: That we should compare always the offspring of the same species. That we should compare seedlings with seedlings. That in hybrids there may appear exceptions, arising from the light colored species being the most healthy and hardy. That simply, light colored flowers and fruit are not sufficient to prove our premises incorrect. There are the parts which change or sport most easily, and in some cases, in the first generation, and partake strongly of the character of their parents, and are hardy and healthy as the Keswick Codlin, Talman's Sweet and Lowell apples, and the Taylor's Bullet, White Clinton, and the Martha grapes, yet we do not think any person would claim that they surpass or even equal

their parents in health, hardiness or productiveness. Again, such varieties as Baldwin, or King of Tompkins Co., having come from improved sorts, are not so hardy to extreme cold, but are healthy, productive and valuable, more so than the Fall Pippin, having had similar origin but lighter colored fruit.

It requires considerable care in classifying facts to correct principles and deduct therefrom accurate conclusions, for at first view the results will appear somewhat conflicting, and if they should happen not to agree with previous opinions, they are generally rejected without investigation. To illustrate this condition of the mind, we will give an example: In January, 1848, we gave a series of public Lectures, at the Strasburg Academy, Pa., endeavoring to show and prove by actual demonstration, that the natural, mental and physical abilities, as health longevity, elasticity, eccentricity, genius, &c., were manifest by external peculiarities. The Professor took exception to our philosophy, and said it conflicted with his faith, consequently it could not be true. We remarked, we did not care what it appeared to conflict with, was it a *fact*? no, he could not admit that. At the conclusion of our experiments, after the audience and himself had made their own selection of subjects, he got up and stated publicly that we could describe and point out those peculiarities with accuracy and precision on any subject they could select, but how it was done he could not tell, but he could not believe in our philosophy. We also attempted to show that many of those peculiarities belonged to the lower animals, and further investigation has shown us that the vegetable kingdom is no exception to external manifestations, but is even more certain in its results, not being subject to volition or mental influence.

With these lengthy preliminary remarks in defining our position, we shall endeavor to examine Mr. Adams' exceptions, although what we have previously said, ought to suffice.

The Golden Russet, we presume, is the Golden Russet of N. Y. (English Golden Russet,) which is a strong rapid grower, and tolerably hardy, and overcomes injury readily; has never become popular, even in the North or West. We had them severely injured in the nursery in 1856. The bark is rather green, considerably speckled with white; fruit russet, on yellow ground; tree straggling, thorny and but little removed from a seedling.

We have it growing by the side of the Red Russet, it does not equal it in vigor, hardiness, productiveness or quality. It being intermediate, cannot be an exception, and does not "prettily illustrate the converse" of our premises.

The Kirkbridge White did not even withstand this climate, so we lost them all. It is not recommended by any Society, that we know of, for any good quality.

Talman's Sweet, Holland Pippin, and Lowell are healthy and hardy, productive and valuable, but do not belong to the light colored class, except the fruit; the foliage, buds and twigs, are dark colored, and have the most marked characteristics of health and hardiness. Mr. Adams claiming those as belonging to the light colored class, shows he either was hard run for varieties, or his observations were not as acute as they should have been. Such an oversight as this of well known varieties, shows at least a want of care in a public critic who wishes to prove the converse of facts.

If he means by Early Harvey, Fall Harvey, it has proved tender and unworthy with us, and as far as heard from.

Yellow Bellefleur is tolerably hardy to cold, but lacks in constitution, and is not productive, and is fast losing favor.

Hawley has proved tender with us, and everywhere heard from, and is not healthy, hardy, productive or profitable.

Tulpehocken is a very fast growing tree, and is likely to be some injured when young, yet we are not acquainted with any variety of light color, with the same rapid growth that equals it in hardiness, health or productiveness.

R. I. Greening is intermediate, and is not very hardy, and proves nothing to the contrary of our views.

Fall Pippin is not healthy or hardy, being far removed from a seedling, and is in a rapid state of degeneracy, although it has strong marks of having had a healthy origin.

Black Gilliflower, Rome Beauty, Mother and Primate belong to the intermediate class, being deficient in some points; they are rather hardy with us. Those local varieties we do not know, and pass them. Of grapes, he finds the Northern Muscadine as hardy as the Concord. Does he find it as vigorous and productive, and profitable?

They are both quite hardy, having been but little removed from our native fox grapes, yet it is very evident that the Concord is the most *healthy, hardy and productive*.

As regards the Delaware being as hardy and healthy as the Hartford Prolific, we once thought so, but who now believes it is adapted to the same vicissitudes of climate. Why is it losing favor so rapidly?

We have had it killed to the ground four years in

succession. We have seen five year old vines, killed, roots and vines, while the Hartford Prolific by their side was not injured. Neither is the Delaware, at any place we know of, as productive. With us, in Missouri, and other places, it is nearly worthless.

As regards Catawba being as hardy as Isabella, it may withstand as much severe cold, but it being as *healthy and hardy* we beg leave to differ. The reports almost everywhere shows the Catawba more subject to disease, and it will not endure the same humid atmosphere. The same holds good with Diana compared with Union Village.

Rogers hybrids, we find No. 1 the most tender, and No. 33 the most hardy of those we have tried. These hybrids are the most valuable we have, and fully illustrate the truth of our premises being the *first generation of hybrid wild fox grapes*, and consequently are the most vigorous, hardy, healthy, and productive of any hybrids we have. Such extraordinary results from such indifferent selections, proves conclusively the application of correct principles in hybridization.

As regards Brinckle's Orange Raspberry being hardy, we have been unable to procure fruit from it by any process, and we do not find it recommended by any Society for vigor, health, hardiness, or productiveness, while we have a number of the darker class recommended for all.

In conclusion, we ask Mr. Adams to select a list of well known varieties, *healthy and hardy*, of light colored bark, foliage, flower, fruit and seed, embracing Summer, Fall, and Winter, which he ought to be able to do, if, as he says, that color is not of the smallest possible use here," and we, here in advance will give a small list of our varieties.

Summer.

Early Red,
Early Joe,
Red June,
Fourth July,
Tetopsky,
Red Astrachan,

Fall.

Fameuse,
Sops of Wine,
St. Lawrence,
Fall Wine Sap,
Baillies' Sweet,
Duchess of Oldenburg.

Winter.

Wine Sap, Ben Davis,
Campfield, Red Russet,
Lady Apple, Hartford Sweeting.

FAST HOLLYHOCKS.

BY J. M., GERMANTOWN, PA.

Under the above head, Mr. John Townley, in the July number of the *Gardener's Monthly*, speaking of some seedling Hollyhock's flowering the first year from seed, says, "I am puzzled to understand

why these plants flowered, though raised so very late in the season; when self-sown plants, and plants raised from the seed sown in the open ground very early in the Spring, *never attempt to flower until the second year.* They do not, as a rule, flower until the second year in America, but in England they generally do. In one of my situations, the growth of the Hollyhock was made a specialty, as well as the raising of seedlings. A large bed was usually prepared on the north side of a wall, and the seed sown as soon as the weather permitted in Spring. The plants were undisturbed in the bed until after flowering, which was usually in September, fully two-thirds of them flowered the first season. I know of no peculiar treatment causing them to flower; the ground was usually very wet, in fact I may say it was never dry. The Hollyhock is a flower deserving of more care than is usually awarded it here. Our Winters are too severe for it without a covering of leaves or litter. It is one of the noblest summer blooming border plants we have, with its stately growth and diversity of colors in its flowers.

Our Horticultural Societies seem to almost ignore it, judging from the slight mention made of it in their schedules. Why do they not offer premiums for it? it is surely as good, or better than the Perennial Phlox.

STRAWBERRIES IN CENTRAL PENNSYLVANIA.

BY S. M., AVON, PA.

As promised, I will now give you my notes on the Strawberry crop the past season: Wilson's Albany done remarkably well, so as to place it among the most valuable, although last season was near being discarded.

Triomphe de Gaud surpassed any former season, with me; picked the last box of them on the 6th July.

Russell's Prolific large fine and in every way valuable.

Boyle's Green Prolific, one of the most perfect strawberries extant, enormously productive, large, handsome color, but not *first-rate* in point of flavor. *Agriculturist*; good quality and large size, but not productive enough for me thus far.

Jucunda, or *Knox's 700*; I think just about what a strawberry ought to be; to my notion it is perfection. I would have lots of fruit of it now, had it not been cut off to promote the running of plants. This, I intend to plant largely for the Philadelphia market, and send them there when your berries are past.

The Three Tribune Prize Strawberries are of no account with me.

French's Seedling; said to be so very early; proves no earlier than Wilson's Albany and produces too sparingly.

Georgia's Mammoth is by no means large, 'tis not prepossessing in appearance, nor is it any later than *Triomphe*, or *Jucunda*; hence I deem it of no account.

Naomi, promises well.

Cocklin's Ida will most assuredly take a prominent place where it becomes known, very vigorous, productive, and in size, form and color, grand; quite acid until fully ripe, when it becomes to my taste unsurpassed by any.

Lennig's White, *Albino*, and another white, which I lost the name of, are so much alike as to not need distinction, are good and handsome, but not productive enough for market.

About twenty or thirty varieties of native and foreign have been tried the past two years, and not one of which I deem worthy of continuation. The simple fact is, that the Albany is still about as valuable as any on account of its earliness, and in fact, every good quality.

STRAWBERRIES NEAR BOSTON.

BY W. C. STRONG.

Which varieties shall we plant? There is a difference of opinion in regard to those long tried. The number of new comers heralded with pompous pretense, is constantly increasing, so that we might fear as long a list as we have pears, were it not that a large proportion of the novelties, having little substance, and being immensely inflated, soon burst, disappear, and are seen no more.

In Massachusetts, this year has been unpropitious for the strawberry, for several reasons. The excessive drought of last autumn prevented the due development of the plants. The plants thus weakened were less able to endure the unusually open and trying winter. Our Spring was cold and dry, and the growth was still further weakened. Last of all, we had successive frosts while the plants were in blossom, which destroyed a considerable portion of the fruit. In consequence, we had less than half a crop, and the price in our market was higher than ever before known, averaging to the producer, from fifty to sixty cents per quart. Under such circumstances, our experience with the new kinds may not be considered as entitled to weight. Yet we can speak distinctly of some.

Agriculturist has good habits; as a plant is very

productive; berries are large, of fair, but not the best appearance; quality below the average. The fruit if picked too soon, is of a watery acidity; remaining another day longer, it is quite passable, but, remaining another day, it degenerates to a decidedly disagreeable over-ripeness.

The Agriculturist seems likely to be of value to the market gardener in the same way as the Wilson's Albany, *i. e.* on account of its productiveness.

French's Seedling is of no value; a pale soft berry, flat and juiceless. It is saying quite too little to say that it is moderately early, productive and of good size; can we say anything better of the Monitor? I think not.

Buffalo is clearly McAvoy; and it is equally clear that Russell's Prolific is not. Yet this is a distinction with the slightest possible difference, so that a common brief epitaph may speedily be written over their graves.

New Jersey Scarlet and Jucunda did not fruit.

Our most celebrated Strawberry Club gave the first prize to the Triomple de Gand. La Constante took the first prize from another Society. In quality, size and beauty, this last is unequalled. On strong clay-loam, highly enriched, it will give a good average crop, but it cannot be called prolific in any condition. Hovey's Seedling continues to be a favorite.

Two new seedlings have been obtained by Hon. M. P. Wilder, by crossing the La Constante and Hovey. Mr. Wilder finds certain conditions which indicate unmistakably that they are the true crosses, and he is so confident that they partake of the good qualities of both parents, that he is inclined to yield to the wish of his friends, that one of them shall bear his name. If he consents, it will indicate no slight assurance of its merits. How strange it is that good cultivators assume the reputation of sending out seedlings which prove to be valueless! and yet, it requires only the most ordinary knowledge of fruits in order to save the public from at least three-fourths of the experiments with new kinds.

Some varieties, like the Wilson, and perhaps the Agriculturist may have some marked excellencies which will atone for marked defects, so as to warrant their introduction. But when a single inspection of a bed of the French, or the Monitor for example, enables us to say the fruit is too soft for carriage; the color is poor; the quality is very much worse; it would seem as though no careful man would be misled so as to make size and productiveness, though not extraordinary, to outweigh these glaring defects. Other similar instances might be given, but resting here, it will be seen instead of

answering my first question. I have rather indicated, for our selection, what not to plant.

DECORATION OF COUNTRY CHURCH-YARDS.

BY WALTER ELDER, PHILADELPHIA.

Almost every country church has a piece of land attached to it as a yard; and in too many cases, it is allowed to run wild as if nobody owned it; however comely the style, and cheap the workmanship of the edifice may be, the neglected of its grounds so much disfigures it, that it looks more like a *temple of sin*, than a sacred domicile in which to worship the "Prince of peace and God of love;" and one cannot help supposing that "filthy lucre" has a stronger hold of the minds of the congregation than the "riches which this world cannot give." That should never be, for everything belonging to religion, and leading to the way of heaven, should be made beautiful and inviting. A church and its grounds should be so nicely ornamented as to look like an earthly paradise, that would entice youth to attend worship; and the seeds of piety would be planted in their hearts, never again to be wholly eradicated; even the "*lukewarm*" would be attracted to church, and get the chill of indifference dispelled from their minds by the sure promises of the Gospel, and the true religion of Christ would flourish.

We would not practice landscape gardening to make a gaudy show in a church-yard! nor would we make walks in the form of a *serpent*, as that reptile destroyed the peace in the garden of Eden, and caused the downfall of man—we would make the walks straight, with rounded corners, and plant the trees and shrubbery in lines; plant an ivy between every two windows to climb up and clothe the walls, and ten or twelve feet off set a row of deciduous trees to give shade in summer, and around the outer-edges, plant a row of evergreen trees for shelter and beauty in winter; make a broad walk in the middle all round, and set a row of shrubs and roses on each side; say every third plant an evergreen; and make the surface of the grounds a grassy sod, and put some hard substance upon the walks to keep them dry—the church and its yard would then be an ornament to the place; and every one would feel a pride in showing it and talking about it to their friends who might come from a distance to visit them. But the fear of the cost deters many well disposed people from making improvements. Let us estimate the cost of decorating a country church-yard. Suppose that the first cost is two hundred dollars, and there are four hundred persons

belonging to the church, that would be only fifty cents to each; if a *circus* or a company of *jugglers* comes to town, everybody will try to get fifty cents to pay to see their antics for only a few hours—who then will grudge to pay fifty cents, or even a dollar to decorate the holy house of God, which will last for ages. Working-men who cannot well spare the money may give their labor at the work, as they work upon the roads to pay their taxes. If the keeping of the grounds in good order should cost twenty dollars per annum, that is only five cents to each of four hundred hearers; or if the annual cost should be forty dollars, that would be only a dime to each; what Christian or Jew would shrink from the payment of such a trifle for a holy purpose—now the leaves of ivy prunings and sprigs of evergreen trees and shrubs, would serve to make wreaths to garnish the church at Christmas time.

We admonish all kinds of religious denominations to strive to outvie each other in the adornment of their country church-yards—let that be hereafter the outer emblem of true and holy hearts; and then we will know where pure religion reigns.

REMEDY FOR THE ROSE SLUG.

BY MR. FRANCIS PARKMAN, JAMAICA PLAIN, MASS.

Having been plagued to an unusual degree this season with slugs on rose-bushes, and sharing the general aversion to whale-oil soap—which, however, is rarely genuine now-a-days, but a spurious compound, equally unpleasant and much less effective. I have tried many experiments to find a substitute. The following mixture succeeded perfectly. To a gallon of common soft soap, add two-thirds of a pint of petroleum. Stir it till the two ingredients are completely incorporated, and then dissolve it in about half a barrel of water. I have used several barrels of this compound, without injury to the most tender foliage, or to the flower-buds. The smell is not disagreeable, and an after syringing with clear water, removes every trace of it. As to the slugs, it killed them as effectually, to say the least, as the best whale-oil soap.

Perhaps some of your readers may find this of use.

MELONS, CUCUMBERS AND SQUASHES.

BY GERALD HOWATT, TARRYTOWN, N. YORK.

To procure melons, cucumbers and summer squash as soon as possible out-doors, and at the least expense is our great aim. The ravage of our bugs is, as is well known a great detriment, and an everlasting annoyance. My cure is a simple one and effectual, being possessed of two preventives the forcing in

of your plants, and the protecting from bugs. Get some siding boards that are used for building; those are rabbeted on one side; get eight by ten glass; cut those boards to the size of your glass; place your glass on top, and tack it in with brads; any one can make these, as it only requires to cut the boards square, if these are not made in time, you can use brick, placing them square on shingles, but the boxes are preferable; when you plant your seed, place this box on top of them, (letting the seeds be in the centre,) and do not remove the box or glass until it is filled with the vines, don't be afraid, the sun will not burn them in the hottest day, you will observe dew drops on the leaves, and the under surface of your glass moist; it may seem strange that they will not burn, but such is the fact, as the extreme heat draws the moisture from the soil. When the seed leaf, is expanded, lift the box and draw some mould up to the seed leaf, and replace your box as before. For early melons I use old house sash, six panes of glass to the light, boxes made of box boards, 12 to 15 inches at back, and ten in front, a strip nailed on each side to prevent the sash from blowing off those boxes, will also answer, and can be used to force early cauliflower in, and be in time for melons. My early melons I sow in four and six inch pots about the 1st of April, using a compost of three parts loam, and one part rotten manure, placing one potshred in bottom of pot; fill in your pot to within two and a half or three inches of the top; place five seed to each pot, when a number are sown, take a fine sieve and sift some of your compost on top of them sufficient to cover them; then take a round piece of board, same diameter as your pot, with a stick in the centre, and press down firmly, water and remove to a frame. This frame or pit is made by excavating the ground two feet deep, filling it up with hot stable manure mixed with leaves; when the heat is up, place on it some garden loam, and plunge your pots to the rim, this gives them a good steady bottom heat. In plunging, keep the tops of your pot six to eight inches from your sash bars in frames; this must be particularly observed, for if more than that, it will draw your plants, and make them spindly, when your seed leaf is developed and above the pot, make some sifted compost and fill up to within half an inch of the top, removing all but three plants when you are filling in.

About middle of May your plants will be in fine condition to transplant. About first of May get your ground ready. When they are planted in large quantities, run a plough lengthwise and crosswise, six feet apart, and drop one or two forks of

manure, according to the strength of the ground, at each angle, and cover with the hoe; place your box over this when finished, and let it remain on a few days before removing your plants; this gives a heat to your soil, and your plants will not be retarded in growth when set out. In transplanting, open a hole in the centre and insert your plant to the depth of your seed leaf, water sufficient to settle the earth around them, put on your glass and do not again remove it except to stop your plants and weed them; no matter how hot it may be, *do not* give them *any air*; it may seem that this may draw them, such is not the fact, they are as short jointed as if no box were used; let me observe, it will not do to give them air one day and close them the next, if you do so, you will burn them, in either seeds or plants. Do not remove your boxes until they are filled with vines, and before doing so, plough and cultivate your ground between the boxes thoroughly, to have it perfectly clean, as you will not be able afterwards to get through with the cultivator, as when your vines are spread out, they will cover all your land. By following the above directions you will not be troubled by resowing in consequence of bugs, which pays for boxes and plants in one season. If extra early Squash is desired, they can be started in thumb pots and removed to the small 8x10 boxes.

DANGER FROM GAS TAR.

BY PETER HENDERSON, SOUTH BERGEN, N. J.

I am glad to see that Mr. Chorlton of Rochester calls attention to this subject, by the relation of his unfortunate experience. He has not been alone in making the blunder; I have heard of some half dozen cases where parties have suffered less, or more; and as its use is now so general in the different parts of greenhouse structures, when it is dangerous to plant life, and when it is not, cannot be too widely known. Last Fall I happened to call on a friend, a very extensive florist, in Brooklyn, L. I., and found him painting his hot water pipe with Gas Tar, and concluded on getting home I would start to paint mine also, but fortunately for me, something came in the way that it was forgotten, and I thought nothing more of the subject until some time in winter, when my friend told me that he believed the Gas from the Tar was injuring his plants. Later in the winter, after a spell of severe weather, when the pipes required to be heated to a higher temperature, the effect was most disastrous, hardly a plant escaped, and as he had all his pipes painted, his loss was severe; on the recurrence of a mild spell, the plants would recover to some extent, but

the necessity for strong firing again injured them as before, so that they never recovered until firing was stopped in Spring. As soon as the weather was mild enough, so that the sash could be taken off, he fired as strongly as could be done for some days in succession, and now hopes that he has expelled the Gas so that it will be no longer hurtful. This is only another instance, Mr. Editor, of the great value of such communications as Mr. Chorlton's; had my friend been aware of the fact last year, at this time, he would have been two or three thousand dollars in pocket. It also shows how much we have all to learn on some of these minor matters. The gentleman referred to had been in the habit of using Gas Tar on his greenhouse for at least a dozen years, but never before had used it where it was subjected to artificial heat.

I have done the same for a longer period, and yet did not know there was danger of it in any way, and would most certainly have followed the example of my Brooklyn friend, had I not been dilatory in the matter.

Gas Tar I have found an excellent thing to use on wood-work either under or above ground, preserving it unquestionably for many years longer than it would be without it.

I tore up last season, a lot of the wood-work of old frames that had been down for nine years, painted with *hot* Gas Tar when built. The boards and joists were common hemlock, and were in such a state of preservation that they would have done duty for six or eight years longer.

I use the Gas Tar put on almost boiling on all gutters, sills and wood-work outside, and on the benches inside, also, taking care now however, that there is no communication with the pipes or tanks.

MARECHAL NEIL ROSE.

BY JOHN SAUL, WASHINGTON, D. C.

Of the many new roses introduced the past few years, this is undoubtedly the most valuable. When first announced, I was apprehensive it might have some of the draw-backs of the other Tea Noisettes, such as Cloth of Gold, which is a luxuriant grower, but shy bloomer; or Isabella Gray, which is a little deficient in vigor, freedom of blooming, and freedom of expansion. So far as I can judge from plants now blooming in my nursery, I should say it has none of those defects. It is evidently a seedling from Cloth of Gold, has flowers of a fine rich deep yellow, opening freely, and highly fragrant. The growth is vigorous, with fine healthy foliage, and a profuse bloomer; like the Tea's, every shoot is terminated with bloom. It has consequently all the good qualities to recommend it, and requires only to be known to be universally cultivated by rose growers.

The Gardener's Monthly.

PHILADELPHIA, SEPTEMBER, 1866.

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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WORTHLESS SEEDLING FRUITS.

From the first number of our Journal to the present time, but one object has been before us, that being the *diffusion of Horticultural taste and knowledge*.

It is pleasant to remember how ably we have been assisted by the best talent in the country; ladies and gentlemen, distinguished in Horticultural art and science, and in the various sciences relating to Horticulture, have freely contributed of their information, with no thought of reward but the public good. When we look at the indices of our past volumes, recording what we have gathered together, we feel that in general usefulness, our history compares favorably with that of any Horticultural publication in the world.

Our Subscription Book also shows the liberality of our friends. Our large circulation is not the result of superior facilities for publication, but mainly the *result of personal effort on the part of friends*. Horticulturists, unlike Agriculturists, are not everywhere scattered about, only a neighbor of similar tastes can find them; no profitable system of advertising can reach them. Only by effort on the part of our friends can our circulation be increased.

The Editor devotes time to the *Gardener's Monthly*, which he can badly spare from other pursuits. He does so only, as forming one of the Great Horticultural body, he is willing to do all he can for its pleasure and improvement, so long as others show the disposition they have heretofore done to sustain and assist him.

It is to the advantage of every Horticulturist, that the *Gardener's Monthly* should be as widely known as possible.

At the last meeting of the Fruit Growers Society of Western New York, it was made a subject of serious discussion how to save the many thousands of dollars annually spent on worthless novelties. These things are "brought out," and so skillfully engineered, that every Horticulturist has to have

them, or be thought "behind the times" by his "go-a-head" friends; or if he is a nurseryman, classed with imposters for selling rubbish, which he would be considered "slow" for not keeping at all. The only cure for these things, is to encourage people to read the papers.

No one who regularly reads the *Gardener's Monthly*, would buy as Wine plants for fifty dollars per 100, Rhubarb plants that he could get for ten; and should by any chance an old Strawberry get a new name, and, as a new kind, get the endorsement of first-class Societies and first-class names, as has been done, and must occasionally occur, the fact is soon published and the waste of money in that direction saved.

Fraud, or the evils of ignorance in newly brought out plants, cannot long exist when brought prominently before a body of men as intelligent as the readers of the *Gardener's Monthly*. It is always a suspicious circumstance when a new thing is not advertised in its columns. It may spread through the country easily by circulars or agents carefully seeking those quarters where "book larnin" is at a discount, until such a demand is created, that nurserymen who know it is worthless, must keep it nevertheless. But when once advertized in our pages, it is brought where it must stand on its merits, and soon receives its last fatal blow, if it has not the wherewithal to make good its pretences.

So with poor stock at low prices, another fruitful source of annoyance to the honest dealer and confiding customer. The nurseryman can be privately undersold, and the buyer readily deceived, and no one be any the wiser; but when such an one attempts to advertize in our paper, the fair dealer is at once on his guard, and has the chance to show the public the difference between good things at reasonable rates, and worthless ones at low prices, and the evil is soon remedied, and before much harm is done.

It is therefore the interest of every one who expects to buy a tree, or fruit, or flower, to see the *Gardener's Monthly* have the widest circulation possible; and every nurseryman, florist, and professional fruit grower, who is forced by an ignorant public opinion to invest his money in what he feels to be worthless, is also interested in our efforts to enlighten the community, by recommending the paper to all their customers.

We close our remarks by quoting a very sensible expression of Mr. Seelye at the Rochester Fruit Growers' meeting: "You cannot prevent men from selling poor articles, nor others from purchasing them. Until growers are honest, and buyers intelligent, frauds will prevail."

DIRECTION OF GRAPE TRELLISES.

It is now a long while since it was noticed that Grape vines grew much better when running over trees than in any other way. Explanations have often been attempted; and amongst other reasons, it has been supposed that the "horizontal growth of the bearing shoots" which prevails when the Grape grows in this condition, must be conducive to health and fruitfulness. It is quite likely that we may have suggested something of this kind in some of our back volumes: at any rate the writer of this has held that opinion; and probably the first impression that there was not much in the idea, was derived from a visit to a vineyard last year in Chester County, as described in the *Monthly*, where vines trained on a sloping trellis failed as disastrously as they could on any other system. We have recently seen another case.

We strolled accidentally into a vineyard of about three acres, that had been formed in a quiet and secluded place on one of the hundreds of small hills that form the ridge between the Wissahickon and Schuylkill Rivers.

Many thousands of dollars had evidently been expended on the experiment. The hill was very steep. The sides had been terraced and the steeper parts sustained by a succession of substantial dry walls, as numerous and as close together as the dry wall breastworks of the Pennsylvania Reserves at the Roundtop on the field of Gettysburg. The level portion of the terraces was about twenty feet wide, and the sloping sides perhaps twenty feet deep. The vines were planted on the edge of the terraces. On the terrace in the line of the vines, strong posts 6 by 4 inch size extended, reaching about ten feet from the ground. The posts on the terrace immediately above this were about three feet above the ground. From the top of the short posts on one terrace, to the top of the long ones on the other, a very strong frame work of 6 by 4's extended, and lengthwise oak shingling covered the whole closely, forming a close trellis about thirty feet wide and hundreds of feet in length. Our estimate was, that at least one acre-and-a-half of space was closely covered by this substantial trellis. As the hill was very steep, there was a slight slope to the trellis. The vines at the short posts were trained down, those at the long and lower posts were trained up to meet them, the whole forming long shaded covered ways twenty feet wide.

The vines appeared to have been planted about eight years, and appeared to have had very careful treatment for about five years in pruning and train-

ing. The last three years all care had been evidently abandoned.

Of the tens of thousands of bunches, there was not one perfect. Most of the berries had fallen by the rot; about five berries to the bunch was a fair average of all that remained, and as they had scarcely begun to color, no doubt many would continue to fall; no failure could be more complete.

What does this teach? Not that Grapes cannot be grown successfully on horizontal trellises, for they are so grown every day,—not that failures are worse on such trellises than on upright poles, for there are plenty of uprights resulting quite as disastrously; but it does show that if we are ever to get at a clear idea of the cause of Grape rot, it is not likely to have any reference to any particular mode of training; and this knowledge is a great deal gained.

**TRANSPLANTING STRAWBERRIES,
RASPBERRIES, &C.**

All intelligent gardeners know that *trees* should not be planted deep, but very few know what is "too deep" when Raspberries, Strawberries and other small things are to be set out. One half, we are sure, of all the Raspberries set out annually die from deep planting, and very many Strawberries.

We have taken pains this year to examine into a very large number of Raspberry plantations reported failures, and we have found in all cases the dead plants were set from two to four or five inches beneath the surface. In one of these instances we found the planting had been done by one of our most intelligent Horticulturists whose occasional writings have given value to our Magazine. On pointing it out to him, he candidly observed, "I see it now, but did not give it a thought before."

It must be remembered that a Raspberry cane is not like the wood of other plants, it will not root from cuttings.

Now, if we set a cutting of a currant six inches under the ground, it will push out roots all the way up to the surface. A Raspberry cutting will not do this. A Raspberry plant must shoot up from the crown, or from its roots only; and the further it is planted beneath the surface, the further have the little suckers to work up to get to the surface. A Raspberry transplanted will rarely be able to throw up its suckers through a greater depth of earth than two inches, hence all set deeper than that always die.

If there be any green sap in Raspberries when received, which a nick with the thumb nail will readily ascertain, not one plant in ten thousand

need die if they be cut down to within six inches of the ground, and planted under two inches deep.

Strawberries, Celery and all such stuff, should never be planted deeper than they grew before transplanting.

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.

GREELEY PRIZE—*Mr. P. T. Quinn*, writes: "In the August No. of your journal, under the heading of "This and That," you say "our good friend Patrick Quinn recently twitted us, without ground as the sequel proved, that we did not read our New York contemporary very closely.

"Now, if you will allow your good friend a few more words on this point, we probably may both be able to better understand each other in future. Undoubtedly the paragraph published in the April number of your *Monthly*, was intended to carry the meaning you ascribe to it; but it is quite as certain that any casual reader would not have so interpreted it. To ascertain whether or not I had really misread the paragraph in question, I subsequently placed it without comment, in the hands of more than a dozen intelligent persons and in each case the reply was substantially the same, that the Hovey Pear had received the Greeley Prize.

"The paragraph is headed the 'Greeley Award,' and in it you say, 'our remarks on the Committee's course with the Iona Grape, led it to retrace its steps—may we not hope that it will now do so with the Hovey Pear. It is to be regretted that Mr. Greeley's good intentions should meet with so poor a result.'

"In the first place, recommending the Hovey Pear had nothing to do with Mr. Greeley's 'good intentions,' for in their report, the Committee distinctly name the Apple and Pear that were selected for the Award; and secondly, the Committee who Awarded the Iona Grape the prize, I think did not 'retrace its steps,' but Dr. Grant simply relinquished his claim to the Award. Nor were the Committee the same as that which recommended the Hovey Pear, nor do I think that Mr. Greeley's 'good intentions' meet so poor a result, on the public learning that the Baldwin Apple and Bartlett Pear had received the prize, and were recommended for general cultivation by the Committee. Now, my friend of the *Monthly*, if you put 'This

and That' together, you will see that the 'sequel' has not proved that you were twitted without ground.' "

[A stranger picking out 'this,' and putting it to 'that,' might probably make out the case for Mr. Quinn, as he says they did; but we are quite sure no regular readers of our paper would make the mistake. As Mr. Quinn himself did not see in our February paper, what he afterwards saw in the *Horticulturist* in March, he naturally falls into the errors of the strangers aforementioned. Such errors will happen, friend Quinn, to the sharpest of us, and we should not be thought the worse of for them.

We admire Mr. Quinn's perseverance, but do not think he gains his chief point. He says we did not read the *Horticulturist* for March, or we should have seen a paragraph he quotes, (see page 182.) As we have the same paragraph in our February number, (see page 61), we do not yet see how the "sequel proves we did not read our New York cousin."

On the other points our friend gains a mark over us. It was not the 'Greeley Committee,' but the *same gentlemen*, with the addition of Mr. Hovey, who recommended the Hovey Pear for general cultivation—not in their official capacity, but in their private ones. It is due to ourselves, however, to say, that this we clearly set forth at page 61 if we did not so clearly do so at page 181, where now Mr. Q. "catches us."

The 'Greeley Committee also did not 'retrace its steps.' It was Dr. Grant who caused them to retrace them.]

EXPRESS CHARGES.—Several of our friends who have sent us specimens of plants, fruits, and flowers, have recently sent us receipts from express companies showing that they prepaid them to us. We could recover from the companies after a great deal of trouble, which the amounts involved are not worth. It seems to be a rule for express companies to ask pay over again unless *marked on the package*, "paid"—and to demand part payment over again, unless the package be marked "*paid through*" to wherever the goods be addressed.

We recommend all persons prepaying goods to their correspondents, to mark them "paid through to—."

NEW METHOD OF PROPAGATING VINES.—We have a set of Photographs from Mr. F. L. Perry, of his new patent method of propagating Vines by using moveable troughs to grow them in. This is

the same plan that has been followed for many generations by intelligent gardeners for raising Peas, Beans and other early vegetables, which are thus started in heat, afterwards set out into the open ground. We have never known grapes to be raised before by this plan, and to Mr. Perry is due the merit whatever there may be of growing them in this way.

We confess however to be ignorant of our patent laws. If, for instance, some one should take up the pen with which we write this paragraph, and go and indite a political speech with it—would the fact of its being a political and not a horticultural article, entitle the writer to a patent for the pen? Or if we have a stove to burn coal in, and another goes and burns wood in it, can he cover his plan with a patent so as to prevent another from burning wood in that stove? The Patent Office says that he can, judging by this and similar issues in the Horticultural line the few past years.

FRUIT PROSPECTS IN COLUMBIA, TENNESSEE—A valued correspondent writes:—The peach, nectarine, and plum promised fair, but the *curculios* have literally destroyed my crop. My pears, what I have left, are the very finest I ever saw, and hoped to make a fair show at St. Louis, but will have to deprive myself of that pleasure. My grape vines were nearly all ruined by the army, very few vines had nothing like wood enough for anything like a crop, but those which have borne and escaped the rot are very fine indeed, my Delawares, Dianas, and Concords are ripening up finely, if I can save them from the birds, we will have ripe Delawares by the 10th inst. The Diana, Isabella, Catawba, and Rogers', 2, 5, 15, and 19 rotted very badly, none of my others rotted so much.

THE JENNY CREEPER sent by a correspondent from Western, Pa., is the *Bignonia radicans*.

SMALL LAWN MOWERS—II., Waddington.—Is there any small grass Mowing Machine manufactured in this country, the price of which does not exceed twenty-five dollars? I, as well as thousands of others, similarly situated would like to get such a machine if it is to be had.

I am a great admirer of grass, when kept in proper order, but the expense and trouble of keeping it in order by hand is considerable, so much so, that it is no doubt the reason that we so seldom see nice smooth cut lawns and door yards.

A small light machine, that would cut from fifteen to eighteen inches wide, that could be used

around shrubs and our borders, and could be purchased at a reasonable price would no doubt meet with a large sale.

I am aware that there are Lawn Mowing Machines manufactured in this country, but they are too large, heavy, and expensive for use about a small place.

[A few years ago Small Lawn Mowers were in use, but have been abandoned. We do not know whether any are yet made or not. The trouble is that very narrow strips cannot be followed rapidly without either overlapping considerably where the mower has already been over, in which case no "headway" is made with the mowing,—or the other fault occurs when grass is "missed," and the course has to be gone over again.

In fact, experience has shown that a scythe, grass hook, or even a pair of box shears will get over the lawn faster amongst trees than a narrow mower—and on the whole they cannot be recommended.]

GARDEN SYRINGES,—“Yank,” Geneva, N. Y.—Can you inform me through your Monthly where I can buy a good green-house syringe? I do not find what I want in this section. I want it for wetting the leaves of tall plants, which a common watering pot does not reach.

[You can get these from any of the large seed and agricultural implement dealers who advertise in our magazine, namely, Bliss, Bridgeman, Washburn, Dreer, Hovey, Henderson & Fleming, Knox, Rogers, Landreth & Son, Buist, Thorburn & Co., and others.]

TOM THUMB ARBORVITÆ.

Rochester, N. Y. August 13th, 1866.

DEAR SIR:—A day or two ago we sent you two specimens of our seedling American Arborvitæ, “Tom Thumb,” to enable you to compare it with the *Thuya ericoides*—The larger plant is beginning to show the Arborvitæ foliage. The first plants of the *T. ericoides* we had, were those received from you last spring, and they are planted beside our Arborvitæ, and are quite distinct even in the young state

Truly Yours,

ELLWANGER & BARRY.

[It is not generally known that what is termed *dimorphism*, or double form in foliage, is peculiarly characteristic of the Arborvitæ class. *Cupressus*, *Biota*, *Chamœcyparis*, *Taxodium*, *Thujaopsis*, *Juniperus*, *Retinospora*, *Libocedrus*, and some others, are nearly as identical in foliage, whether sprouting from seed or sometimes stricken from cuttings while young, as Agassiz found the embryos of animals.

Some of them seem to retain this seedling or primary form longer than others. *Thuja ericoides* and *Retinospora ericoides* are kinds that carry the original form of foliage a long way, perhaps all the way through their existence—so far we have never seen any flattened leaves on them. On one of Messrs. E. & B.'s plants, the flattened or secondary leaves are just appearing. We have never seen any tendency to do this on *Thuja ericoides*.

The plants are distinct, though liable to be confounded together when young—and both eminently beautiful.

RIPAWAM STRAWBERRY—*W. R. Prince, Flushing, N. Y.*, writes: "I notice that W. S. Carpenter states in an advertisement, that "at the Great Strawberry Show of the American Institute, held last June, this Strawberry took the first prize, and that "Prof. Huntsman of Flushing, was one of the Committee of Judges."

Now Sir, I desire to state that the American Institute held no "Great Strawberry Show" the past June; and Prof. Huntsman has stated to me, that he not only never heard any thing in regard to such a Show, but that he has no knowledge whatever of the qualities of this Ripawam Strawberry."

PEAR BLIGHT—*J. H. C., Cuyahoga Falls, Ohio.*—"Please find inclosed a branch and some leaves from a pear tree of mine which is blighting very badly, the limb contains a grub which is new to me, but may not be to you, it is very quick in its movements. I hope it will reach you safe and alive; do you think it has any connection with the blighting of the tree."

[This is the insect known as *Scolytus pyri*, and produces this form of blight, by checking the proper flow of sap to the part. It is very distinct from the fire blight, which is caused by a parasitic fungus, although the appearance of the injured parts is very much the same.]

BEAUTIFUL SEEDLING VERBENAS.—*D. S., Chicopee, Mass.*—"I sent by mail last evening a box of specimen Verbenas, but they were packed in so great haste that I fear they will not reach you in good condition, therefore send you a box to day which please look out for.

I send you a specimen of the old Melindres, true, which I have grown for 20 years, it was the first variety that I got hold of, and grew it a year or two before obtaining others.

I now send it with others that you may see what advancement I have made from that.

In planting I select seed from the first class varieties only, and when the bed gets in to flower I pull out all poor varieties that I may keep the seed very pure.

I have for the last 6 years been following up the Striped Strain, until I have some very good ones, but the stripes are not my favorites; I prefer the selfs with large distinct eyes, and am now following that strain and hope to get something very choice in the course of two or three years.

My idea of a first class Verbena is decided color; strong, robust, close spreading habit, truss large, slightly convex, and thrown well above the foliage; pips or florets large, smooth, evenly set, and of good substance; broad segment of petal, a well defined eye, and sufficient stamina to withstand the hot sun without being burned.

I do not like a Verbena that shows but half of a truss at a time. Many varieties never fill up in the center until the outer petals begin to fall; this is decidedly objectionable.

The specimens I send you I do not consider standards of perfection; but, I am for improving them all I can. I have many very fragrant ones this season, and have succeeded in raising some very fine purples.

That you may not be deceived by reports as to the size of my bed, I would say that it contains about 53 square rods instead of a half acre as some have it, and between 7000 and 8000 plants by actual count. Many florists will come out with varieties which they say were selected from 8000 or 10,000 seedlings, whereas there was probably not as many hundreds.

My seedlings were all potted and counted, so that I know whereof I speak. I plant them 3 or 4 in a hill, and 2 feet a part, this gives a chance to pull out the poor ones without injuring the beauty of the bed. Out of this number I think I will get 25 first class, or rather 25 that I consider superior to anything I yet have, which is *whittling* them down pretty close, but what is the use of sending out varieties unless they are superior in many respects to others already out. Some of them are of nearly the same colour of those already out, yet are much stronger growers, larger trusses, better habit, and of course an advancement in the right direction."

[The above is an extract of a letter from Mr. Dexter Snow, of Chicopee Mass.,—not evidently intended for publication, but of sufficient interest to warrant us in taking the liberty of using it.

The seedlings of Mr. Snow were mostly first class flowers of great beauty and merit, and formed a

striking contrast with the old Melindres sent with them.

It does not seem generally known that the old species *Verbena teuroides* is the parent of the sweet scented varieties—they are not good creepers, but give the simple charm of odor; the value of Melindres is as a bedder.]

CANNA ROOTS IN WINTER—*G. A. F., Woltham, Mass.*—"I find that the *Gardener's Monthly* is very willing to teach all amateurs who are seeking after the true way. I have sought in vain, a way to preserve Canna roots during the Winter. In the Fall I have placed them in a good light cellar, keeping the earth a little moist, and in the Spring found them decayed. I have tried putting the roots in dry sand, but with no better success.

Now, Mr. Editor, I would be very thankful if you would give some directions how to preserve the roots, through the *Monthly*."

[The roots have been kept too cold—they rot easily then. Keep them in a part of the cellar where the thermometer never falls below 45°.

They should be warm enough to make them nearly sprout, but not quite]

ENGLISH EVERGREENS—*W. A. B., Putnam, O.*—"I received from England last July, the following shrubs:—2 Laurels, 2 Laurustinus, 3 Holly, and 1 Araucaria.

Not being much acquainted with the climate, would you inform me through the *Monthly* whether they are hardy or not. I have them planted on the north side of a building where they are well sheltered from the sun. They are strong plants, about three feet high and are doing well."

[Your plants will not stand the severest of your Winters; set them in tubs,—you can keep them easily in the cellar, with occasional watering through Winter.

The Holly is the hardiest.]

SMYRNA APPLE—*W. C., Beverly, Ills.*—"I believe it was in the *Monthly* that I saw the Chango Strawberry mentioned with a long string of synonyms. Messrs. Ellwanger & Barry will oblige me and many others of your western subscribers if they will say whether an Apple sent out by them nine years ago, under the name of *Smyrna*, is not the same."

"A. BORNEMAN & Co."—We have a great number of letters in reference to this "firm," none of which, however, enable us to give the "reliable

character," we like to feel satisfied about before seeing advertisements in our columns.

The greater number of the letters speak of plants got from the "firm" as proving spurious.

This is of course "unfortunate," and "purely accidental," proving "no intention to swindle,"—but is fatal to patronage from horticulturists, who are a "little particular" about what they get.

OBITUARY.

MR. DANIEL MAUPAY, we observe by the Southern papers, died suddenly at Enterprise, Mississippi.

Mr. M. was the eldest son of the late Mr. Maupay, one of the pioneer horticulturists of Philadelphia, and had long been in the seed and nursery business at New Orleans.

Books, Catalogues, &c.

GARDEN FLOWERS.—By E. S. Rand, Jr., Boston: Tilton & Co.

This is a companion work to "The Parlor Gardener" of the same author, and has been brought out in like beautiful style by the same publishers.

So many new plants have been added to our gardens during the few past years, that a work of this class, brought down to present times was badly needed.

Very nearly all the newer things seem to be included in this work of Mr. Rand's, and the accuracy with which all these names are rendered, though no more than what we have a right to expect in a work of this character, is an unusual merit in many of our horticultural books.

The directions and hints for the cultivation of the plants and flowers described, will be of considerable use to the amateur.

New and Rare Fruits.

THE JUCUNDA STRAWBERRY.—This strawberry has become famous, through proving to be the best on Mr. Knox's grounds at Pittsburg, of the many varieties he has tested there.

The illustrations we give, are drawn from nature; and we can say are not exaggerations of the specimens which were selected at Pittsburg when we were there in June, and sent on to Philadelphia the next day. At the same time it is fair to say that we give it as a true illustration of what this

strawberry will do, than what one may expect to see it become every day, as they were the best that could be found on a very large plot of ground. It is customary to give the average appearance—we have thought better to give a model, which all who grow it may strive to attain.

While giving this illustration, it will be well to say a few words on the character of strawberries in general. Generally, one gets a large number of varieties, a half dozen or so each—puts them all together in a small plot of ground, and notes the result. Some plants, from various causes we need not here recapitulate, are at all times inferior to others of the same kind at other times, and many external circumstances operate against a variety at one time, that would not at another; yet on the faith of these half a dozen plants we find experimenters making up their minds on the value of a variety in any quantities, or in any place. Hence, we read of the most discordant opinions in the public prints, and hear the most opposite views in public conventions. In reference to this very variety; one speaker at Rochester characterized it as a hollow berry, while another had found it a very solid one—one will tell us a variety is so sour a hog would not eat it, in the face of the fact that millions of people eagerly seek for it, eat it, and plant it over and over again. Another says a variety is so soft, it will not go a dozen miles without getting sour or stale, when thousands of quarts of it are being sent every day to market hundreds of miles. Another is so poor a bearer as to be utterly worthless, when the fact is, that hundreds to whom a large crop is a matter of daily bread, plant the variety by the acre.

There is not in fact, *one solitary variety*, cultivated in any part of the United States, that has not at some time or another been pronounced by "competent authority" *utterly worthless*.

The only true test of the value of a variety is when a bed of several hundreds of plants are grown, and at least two years bearing from the same plants. This will then give a fair idea of the value of any variety in that soil. But in different soils effects will vary—vigorous varieties do badly in rich soils—and moderate growers are little use for a light sandy ground. A kind that does well in New Jersey, for instance, is as a rule of no account in Pennsylvania, and one in the last place often of no use in New Jersey. All these things are against getting at a general good character for any variety.

With regard to *Jucunda*, we can say, after a two years' examination of the plant on Pittsburg soil, it is the best of any we saw there grown on a large

scale; and while no doubt it will fail to do well in many places, we are sure that as a general thing, it will be as popular as any now on the top of the list.

NEW STRAWBERRIES IN WESTERN NEW YORK.—Among the new kinds offered this fall, are four from Western New York—General Grant, General Sherman, General Meade, and Philip Sheridan. The last is recommended by the raiser for its flavor, and the first for its earliness.

MARKET STRAWBERRIES—By W. R. Prince, Flushing, New York.—As there appears to still exist much misconception as to the positive merits of the respective varieties of Strawberries, and as there are also many whose qualities are unknown to distant cultivators, I propose to give you descriptions of some of the most valuable and rare, with the results of the careful investigations made by Prof. Huntsman and myself. I shall draw a line of distinction between the varieties deemed best suited and most profitable for market culture, and such as may be deemed more especially appropriate to the family garden, and to that of the amateur. A complete revolution is certainly called for, as to the market varieties at present cultivated in New Jersey and Pennsylvania, and in the Western States.

VARIETIES SUITABLE FOR MARKET, &c.

Amateur, P. Originated by J. A. Pain, rather large, conical, crimson, fine flavor, productive.

Augustine, P, very large, conical, light scarlet, good flavor, very productive.

Agriculturist, (Pine) H, large, irregular cone, acid, without flavor, soft, won't bear long carriage, moderate crop.

Duclen, P, large, rounded, light scarlet, pleasant flavor, beautiful, exceedingly productive, suitable for market and for family garden.

Eclipse, P, medium, conical, bright crimson, early, showy, berries ripens nearly at same time, suitable for market and family garden.

Predonia, H, very large, obtuse cone, sweet juicy, fine flavor, firm, splendid, large trusses, very productive, valuable for market.

Gazelle, P, very large, round, light scarlet, juicy, good flavor, very vigorous, hardy and productive.

General Garibaldi and General Scott, H, both are large, early, obtuse, conical, crimson, acid, soft, slight flavor and productive.

Globose Scarlet, P, very large, orange scarlet, acidulate flavor, beautiful, very productive, vigorous, very hardy.

Green Prolific. See Newark Prolific.



THE JUCUNDA, "KNOX'S 700."

Imperial Crimson, P, large, obovate or rounded, sweet, fine flavor, firm, very productive, suitable for market and for the amateur.

Imperial Scarlet, P, large, obtuse cone or rounded, bright scarlet, sprightly flavor, very good, firm, clean, don't rot, productive, suitable for market, and for amateur.

Jucunda Pine, H, (re-named by Knox as his No. 700) originated in England by Salter, imported by me in 1859, very large, conical, bright red, beautiful, flesh rosy, firm, sweet, juicy, pleasant flavor, ripens just after the early crop. It is one of the most vigorous and hardy of the Pine family, and yields abundantly. The foliage never burns, and the plant is never injured by the winter. A moist soil is most suitable for it.

Late Globe, P, large, rounded, bright scarlet, acidulate, sprightly flavor, productive, ripening ten days after the main crop, valuable as a late market berry, very hardy and vigorous.

Laurencia, P, large, obtuse cone or rounded, crimson, sweet, juicy, fine flavor, very productive, hardy, vigorous, suitable for market and for family garden.

Lorio Pine, H, earliest of all Pines, ripening with the earliest scarlets, and continues three weeks; very large, brilliant deep scarlet, conical, compressed; flesh rosy, very sweet, perfumed, greatly esteemed, much superior to Jucunda; vigorous, very hardy, uninjured by winter.

Melanie, P, large, conical, deep scarlet, beautiful, excellent flavor, very productive, vigorous, very hardy; suitable for market, and for the amateur.

Newark Prolific, P, absurdly called Green Prolific, large, rounded, scarlet, moderate flavor, not firm; productive, vigorous, very hardy, suitable for a near market.

Newland, H, medium to large, conical, deep scarlet, very sweet, rich, juicy, excellent, firm, very hardy and vigorous, and very estimable for market, and for the family garden.

Ornement des Tables, (Pine) H, very large, obovate, orange scarlet, very sweet, delicious perfumed flavor, splendid, profuse bearer in trusses, ripening in succession, peculiar beautiful foliage; suitable for market, and for the amateur, very superior in excellence to Jucunda in flavor.

Primate, H, rather large, conical, deep scarlet, moderate flavor, beautiful, very firm, hardy and very vigorous and productive, suitable for long carriage to market.

Prince Imperial, (Pine) H, early, medium, glazed scarlet, variable form; flesh rosy, sweet, fine flavor,

long in bearing; plant vigorous, very hardy, suitable for market, and for the amateur.

Princesse Royale, (Pine) H, the great market berry of Paris, large, oblong cones, bright scarlet, beautiful, acidulate, rich sprightly flavor, very hardy, vigorous, uninjured by winter, very productive, well suited for market.

Scarlet Maguate, (Prince's) P, the heaviest and most solid berry for market carriage, very large, rounded, depressed, bright scarlet, sweet, juicy, very good flavor, splendid production; plant hardy, very vigorous, broad foliage, flowers very small; an admirable market fruit. It requires the Ophelia or some other strong fertilizer.

Stewart, H, rather early, large conical, scarlet, good flavor, sprightly, firm, handsome, vigorous, hardy, productive. This is the great market berry of Maryland.

Sultana, H, early, very large, light orange scarlet, white flesh, sweet, fine flavor, very hardy, vigorous, very productive, suitable for market, and for the family garden.

Victorine, H, rather early, very large, conical, bright scarlet, juicy, sprightly, very good, handsome, firm, very productive, vigorous, large foliage, very hardy. Estimable for market.

Welcome, H, (Prince's) new, earliest estimable market berry, large, bright scarlet, beautiful, sweet, fine sprightly flavor, firm, don't rot, always clean; plant very hardy and vigorous, every flower perfects a berry, far superior to French's Seedling and Jenny Lind in all points, and produces double the crop. It is destined to supersede all the other early varieties.

[It is well to remark that the strawberry is so extremely a local fruit, that what is "hardy, productive, and healthy," in one locality, is often the very reverse in another. We are glad to have accounts from many widely separated parts of our country, as we find by them what are most likely to do well in each. Mr. Prince's notes will be interesting, as the experience of the locality of Flushing, New York.—ED.]

Domestic Intelligence.

PETROLEUM FORMED FROM SEAWEED.—This theory of the formation of rock oil has recently been advanced by Professor Wilbur, of Hamilton, C. W. His idea is that petroleum has had its source in marine vegetation, just as coal has been derived from terrestrial plants. Few persons have an adequate idea of the immense growth of seaweed in

the depths of the ocean. After their term of growth was completed, they became detached, floated off, and finally sank to the bottom. It is a received opinion among geologists, that this portion of the North American continent had once been the bed of a salt-water ocean. The ocean floor, as must be remembered, was not level, but had, throughout its whole extent, deep hollows and rising ridges. It was, of course, in these deep hollows that these seaweed deposits would find their last resting place, after long tossing about in the waves and ocean currents. In this way it would come to pass that they would not be evenly distributed over the bottom, but only in those hollows or pockets.

Meanwhile the deposit of solid stratified rock, or what afterward became such, was going on, and after untold ages, these masses of seaweed became covered to various depths. He considered it no very unreasonable or unscientific supposition that these masses of oily, carbonaceous matter should, under the circumstances, take the form of oil, of a liquid hydro-carbon. They had seen that oil existed in, and was distilled from coal, which was conceded to be the remains of terrestrial vegetation. There was, therefore, nothing violent in the supposition that petroleum, so exactly like coal oil in its properties, has been formed from marine vegetation. The vegetable origin of both is indubitable.

LENGTH OF ROOT GRAFTS—Suel Foster says in *Prairie Farmer*.—Now for two years past I have had some experience with short roots and long roots in the same ground, in the same row, and of the same variety; I cannot testify as to the per cent. that lived or died when first set out, for they were not grafted by the same hand, nor from the same scions, but the growth the fore part of the season, was three-fold in favor of the long roots; after mid-summer the short roots came on better, but at the end of the season, when the growth was done, we could pick out all the short roots for the lack of growth. This year I again bought 15,000 root-grafts, first stating to the nursery-man of whom I bought, my last year's experience with long and short roots; but his custom was to divide up his roots tolerable short, and so my grafts were set in the same way, many of them on the green wood of the seedling top, with a very little of the yellow root below the collar or division of root and top, many of them on the little mouse tail end of the root. To-day we can distinguish every row of the short roots and long roots by three times the growth of the latter; last year a larger proportion by far, of the short roots did not start; this year they generally show signs of starting and that is all.

LARGE MARKET GARDEN.—A company is organizing in Cincinnati to establish a mammoth garden for the growth of all kinds of fruit and vegetables, and furnish them to the public in wagons, on orders. It is promised that marketing by this new method shall cost the consumer only a little more than one-half the present prices asked. The company is to have a capital stock of \$100,000, and will have a farm of 1,000 acres near the city, fitted up exclusively for this new movement.

THE NEW POTATO BUG.—We condense the following account of this new pest to farmers from an article in the *Practical Entomologist*, by B. D. Walsh. This new and destructive enemy of the potato has spread within the last five years, from Colorado and Nebraska eastward into Iowa, and within the last year and a half has crossed into Illinois and Wisconsin; whence, in course of time, it will probably travel to the Atlantic, establishing itself permanently wherever it goes, and pushing eastward at the rate of about fifty miles a year. Hitherto noxious insects have spread from east to west in the United States, and this is the first instance on record of one traveling from the west toward the east.

The new potato bug is not what naturalists call *bug*, but a true *beetle*, belonging to the order *Coleoptera* or *Shelly-wings*, and is rather more than one-third of an inch long, of so short and oval shape as to be almost as round as a grape, and cream-colored with ten black lines or stripes placed lengthways on its back. Its wings are rose-colored and present a beautiful appearance as it flies. We may call it in English "the ten-striped spearman," which is the meaning of the scientific name given to it. The appearance presented by the perfect or winged insect, when its wings are hid under its wing-case; but in the larva or immature state, it is a soft, elongate, 6 legged grub, of a dull venetian red color with several black spots, but without any wings of course. There are four or five successive broods of them during the summer, and the larva of each brood goes under ground, to assume the pupa state. One who was the first to watch this insect through all its states, says that his specimens "hatched on the 14th of June and came out as perfect insects on the 10th of July, thus being scarcely a month going through all their changes."

No practical remedies against this insect are known. Hand-picking is recommended, but what farmer could hand-pick ten acres, if thickly infested, much less fifty or one hundred. Lime and ashes are useless, and even coal oil and turpentine

have been tried and found "of no more use than so much water, as they soon evaporate." Turkeys will destroy great numbers of them; but it is to their natural enemies, the lady-bugs (*Coccinellidae*) we must look for the most efficient help. Hitherto the potato has comparatively been free from the depredations of insects, and it would be a serious blow to the farmers in the potato districts of the Eastern and Middle States, if this pest should come upon the crop.

EXPERIMENTS ON THE CURCULIO.—The assertion is often made that there is no efficient remedy for the curculio, and that jarring on sheets does not save the crop. This statement we have amply disproved the present season. The experiments were tried on an orchard of about 70 trees, trained in the form of pyramids, and now about nine or ten feet high. A man was employed for this purpose, and the sheets figured and described on page 398 of the last volume of the *Country Gentleman* were used for catching the insects. The work was commenced early in June, and for the first week the number caught and killed by thumb and finger each morning averaged about two hundred. By the end of the second week, the daily number had been reduced to about sixty. Through the third week an average of about fifty were caught each morning. By the end of the fourth week, they had nearly disappeared, only five being found at the last examination. The work was then discontinued. Omissions occurred on several different days, either from the absence of the operator, or on account of rain; yet, with all these disadvantages, most of the trees are heavily loaded with smooth fruit. The two past years, when this care was omitted, only three or four trees bore small crops of plums.

There is no question that this jarring process, if repeated as often as twice a day, without a single intermission, connected with the daily removal of the dropping fruit, by sweeping up or by swine, would prove effectual in any locality, or where the insects appear in the greatest numbers. It is partial trials only that result in failure.—*Country Gentleman*.

FLORICULTURE IN ALBANY.—Flowers for funeral purposes we understand are much sought after, and as much as \$1,000 worth of floral decorations were used by one prominent family here at the death of a relative. Our old friend Dingwall still heads the list here. Grape growing is now quite a feature with greenhouse men east, and we should judge a profitable one. It is managed somewhat in this

way. The grapes are propagated from eyes in the ordinary propagating house, and takes place just after the house has served its purpose for the propagation of bedding and other plants. By the time they are ready for potting, some of the plant houses are empty; into these by the thousands are put these young vines, increasing the room these occupy as the other plants are taken away, thus bringing what used to be empty houses into a very profitable use. Quite a quantity of these young vines even, find a ready market for immediate planting; what are not sold are towards midsummer turned out into pits or the open ground as the case may be—forming by fall splendid one year old plants. We notice in washing over the glass, a different material is here used to the common whitewash. Mr. D.'s formula is as follows: (this he says will not wash off till fall, when the first early frosts cleans the glass ready for a winter's campaign when all the rays of old Sol again come into requisition.) One-fourth linseed oil and white lead, balance benzole and whiting; when applied, it gives the glass the appearance of being what is called, frosted.—*Prairie Farmer*.

A NATURAL BAROMETER.—Mr. Wm. McClathy, postmaster of Katesville, in West Middlesex, N. A., says, "I first observed in the rows of young Weymouth (or White Pine) trees in my nurseries, that the last year's growth and all the leaves or spines stand straight upright in dry weather, and on the least change to rain or snow, the branches bend and the leaves fall back and appear in a dying state, even before the snow or rain commences. When a change comes for dry weather, they all recover again, and remain so until the next change is going to take place, giving the farmer warning in time for him to prepare for it."—*Canada Farmer*.

SCUPPERNONG GRAPE.—Amongst all the varieties of native grapes we have tested, there is but one that is unexceptionable in every respect, and that is the Scuppernong. The juice is too watery with all the others, to make a good sound wine, without the addition of sugar or alcohol. We consider the Scuppernong to be the best grape in the world. It will produce a greater weight of fruit than any vine we ever heard of, is exempt from mildew, rot, and the depredations of insects or birds. The juice is sweet, rich and heavy, and makes a wine of superior flavor, while it will grow and flourish with very little care. We are credibly informed that there is a vine of this grape growing near Mobile, Alabama, which has produced two hundred and fifty bushels of

grapes in a single season. Our sincere advice is, for everybody to plant a half dozen vines, and give 100 yards distance between them.—J. VAN BUREN, in *Southern Cultivator*.

THE "RETAMA" (*PARKINSONIA ACULEATA*,) grows wild in many parts of Southwestern Texas, and is now quite extensively cultivated at Austin, and in other places. The young trees have a bright green, smooth bark, both on their trunks and branches, with long pendent grass like leaves, which, when young, have small leaflets. It has bright yellow, pealike fragrant flowers, the lower parts of the petals tinged with ochreous brown. Its seeds are contained in pods. It is a rapid grower, and quite hardy. From its endurance of the northers at Austin, where the thermometer is sometimes as low as 20°, and very often 12° below the freezing point, I am satisfied it will thrive in the open air as far north as Washington. It deserves extensive cultivation in all the States south of this latitude, for there are few trees more beautiful.—S. B. BUCKLEY, in *Country Gentleman*.

STRAWBERRIES IN ILLINOIS.—I will give you my experience with one acre of Strawberries.

The plants (Wilson's Albany Seedling) were set out during the month of April, 1865, on bottom land, which had been cultivated in corn for the last 25 years, with no extra preparation of the ground except once ploughing and harrowing.

The plants were set two feet distant, in rows five feet apart—lines of dwarf peas and early York cabbages were cultivated the first year between the plants—June 5th, commenced sending berries to market, employing from 10 to 15 hands at two cents per quart, until the 30th of June, when Strawberries played out. My sales amounted to 108 bushels not estimating what were consumed in a large family with strong Strawberry proclivities. The first 25 bushels sold for \$8 00 per bushel, and 83 bushels at \$6 40 per bushel; gross sales \$731 20 less \$69 12 paid the boys for picking. With more careful cultivation better results may be reached. On the approach of winter the bed was lightly protected with oatstraw.—H. L. BRUSH, in *Ottawa, (Ill.,) Republican*.

Foreign Intelligence.

UNCIVILIZED LOVE FOR FLOWERS.—Wreaths, coronets, and bouquets, made either of natural or artificial plants of every color and form, have been

from the earliest times the delights and ornaments of those fairest of created beings *women*, in every civilized nation and climate of the world—even the barbarian natives of some of the South Sea Islands take a natural pleasure in, and prefer plants and flowers to the feathers and trinkets most savages delight in. M. Lesson tells us in particular, that the inhabitants of Otaheite, Oceania, Caroline, and the Sandwich Islands, wear garlands of flowers and sweet smelling leaves upon their persons and garments—they delight in making wreaths of flowers of the most beautiful colors intermixed with others that possess the sweetest scents, amongst others, the blossoms of the Arum, *Ixora*, *Gardenia florida*, and *Hibiscus rosea sinensis*. They likewise fix a single stalk through a hole in each ear, and suspend a single flower, as our race does the eardrop.

THE LOVE OF ROSES AMONG THE ROMANS.—The love of the ancients for Roses was something fanatical. I do not so much refer to the poets; for probably the modern and the antique bards may vie with each other in the use of the Rose as a common place of poetical illustration; but I allude to a strong passion for the visible, tangible, scent-giving Rose, as something to be enjoyed by all the five senses, scarcely excluding that of hearing, for a rustle of many Roses must have attended some of the more extraordinary manifestations of idolatry. A time without Roses was a contingency to be avoided at any cost; and the Romans, though the mildness of their climate allowed the adored flower to grow at an unusually late season, could not submit to the privations of a winter. Not only were whole shiploads of Roses brought from Alexandria in the inclement season, but various means were devised for preserving the gathered flowers throughout the year with as much freshness as was attainable.

The wreath of Roses, of which one reads and writes about so often without any other image than that of a curved twig with a tolerably rich supply of floral ornaments, was capable of a high degree of elaboration; for the Roman florists looked upon an enlacement of whole flowers as an exceedingly meagre affair. For a grand work of art they took the Rose leaves separately, laid them over each other like scales, and thus produced a sort of fragrant sausage.

This refinement in the construction of wreaths will show that the luxurious ancients not only insisted on the constant presence of Roses, but were determined to have them in as large a quantity as

possible. The anecdotes that illustrate this form of the floral passion could scarcely be surpassed in wonder by the wildest imagination:—"To enjoy the scent of Roses at meals," says Herr Wustemann, "an abundance of Rose leaves was shaken out upon the table, so that the dishes were completely surrounded. By an artificial contrivance, Roses, during meals, descended on the guests from above. Heliogabalus in his folly caused Violets and Roses to be showered down upon his guests in such quantities, that a number of them, being unable to extricate themselves, were suffocated in flowers. During meal times they reclined upon cushions stuffed with Rose leaves, or made a couch of the leaves themselves. The floor, too, was strewn with Roses, and in this custom great luxury was displayed. Cleopatra, at an enormous expense, procured Roses for a feast which she gave to Antony, had them laid two cubits thick on the floor of the banquet-room, and caused nets to be spread over the flowers in order to render the footing elastic. Heliogabalus caused not only the banquet-rooms, but also the colonnades that led to them, to be covered with Roses, interspersed with Lilies, Violets, Hyacinths, and Narcissi, and walked about upon this flowery platform."

As a source of artificial perfumes the Rose was employed by the ancients in other ways than in those oils and waters that are familiar to modern life. When the leaves had been pressed out for higher uses, they were dried and reduced into a powder, called "diapasma," which was laid on the skin after a bath, and then washed off with cold water. The object of this process was to impart a fragrance to the skin. As a medicine, Quinces preserved in honey were introduced into a decoction of Rose leaves; and the preparation was deemed good for complaints of the stomach. In the culinary art Roses had likewise their place of honor, and were put into many dishes for the sake of their pleasant flavor. For this end they were sometimes preserved—a delicate process, as they were very apt to become mouldy.—REV. W. H. E., in *Cottage Gardener*.

BOTANY AS AN EDUCATOR.—For quickening the habit of observation, and teaching how to discern distinctions and resemblances, where without it all would be confused, and more than half overlooked, there is no science like botany. It is the best of eye-salves and the most successful of opticians; in a word, no learned treatise upon logic or the "laws of the mind" ever taught a man better how to use his wits than does the practical working-out of a

proposition in regard to plant-structure. To take half-a-dozen species of as many different genera of a natural order, carefully dissect their flowers and other parts, and then satisfy the mind as to the nature of their resemblances and distinctions, is every bit as useful as learning how to demonstrate a theorem in Euclid. A man who will accustom himself to such examinations, not jumping at conclusions, but considering as he goes on, and not looking to books until he has exhausted all his own resources, not only becomes a good botanist, and therefore a better gardener, but he acquires sharpness and accuracy in other things, and proves in his own experience that for mental discipline nothing yet surpasses living nature.—*Cottage Gardener*.

RESPIRATION OF FRUITS.—At a late meeting of the Academy of Sciences, Paris, M. Cahours read a paper on this subject, from which it appears that apples, oranges and lemons, in a state of perfect maturity, when placed under bell glasses containing only pure oxygen, or a mixture of oxygen and nitrogen, or common air, respire, by consuming a portion of the oxygen and giving off carbonic acid gas the proportion of the latter compound being greater in diffused light than in obscurity. He proposed to continue his investigations regarding changes in fruit from development to maturity.

M. Fremy then made some remarks on the maturation of fruits, and referred to experiments made by him and M. DeCaisne some time ago. They found that fruit passed through three stages. In the first stage the fruit is green, and behaves to the atmosphere like a leaf, in decomposing carbonic acid and giving off oxygen. In the second stage, that of ripening, this action is reversed—oxygen is absorbed and carbonic acid exhaled from the cellules of the pericarp, in consequence of a series of slow combustions, in which the immediate soluble principles disappear. Tannin goes first, then acids, and afterward sugar. In the third stage, that of decomposition, the effect of which is the liberation of the seed, air enters the cellules, sets up alcoholic fermentation, and the acids of the fruit give birth to true ethers. Finally, it not only decomposes the cellules, but oxidises certain constituents which have resisted the changes in ripening; thus certain fruits, like the medlar very acid and astringent, only become eatable when they are mellow.

THE SUMMER BLACK RASPBERRY was raised half a century ago at Netherfield, in Essex. It is a hybrid between a Blackberry and a Raspberry, the fruit being purple, and the flavor partaking both

of the Raspberry and the Blackberry. This is a fruitful and beautiful variety, producing canes of immense strength, dark in color, and a leafage that, like the fruit, combines the peculiarities of both its parents. Mr. Rivers has cultivated this largely, and from it raised numerous seedlings, some of which are of great value. The *Autumn Black* is one of these. Mr. Rivers describes it as the fifth generation from the Summer Black. The fruit of the Autumn Black is of excellent quality, dark purple in color, and it is in good bearing till quite November. It has this peculiarity, that it produces scarcely any suckers, and hence has to be propagated from seed. By pegging down the shoots it might, no doubt, be increased in a more certain though less rapid manner; but the seedlings are, I believe, generally true, so that there is no reason why this fine hybrid should not be more generally known and appreciated than it is.—*Gardener's Weekly*.

GEOGRAPHY OF THE IVY (HEDERA HELEX, L.)

—The Ivy is a free-born shrub in every country in Europe, from the south of Sweden to the Mediterranean Sea, and from Ireland to Siberia. It is also found in the north of Africa, in Asia, on the mountains of India, Japan, and in China. It does not exist in America or in Australia, except by cultivation. Kalm says that he saw Ivy but once in North America, against a stone building, and conjectures that it had been brought there from Europe. Royle says that the variety with yellow berries (*Hedera helix chrysoarpa*) is the most common in the Himalayas, and may be seen clinging to the rocks or clasping the oak. Thunberg, who first observed it in Japan, remarks that the leaves are not lobed.—*Gardener's Weekly*.

PRINCESS MARY'S WEDDING BOUQUET.—Ever since the marriage of the Princess Royal, Mr. Veitch, of the Royal Exotic Nursery, Chelsea, has enjoyed the privilege of presenting the members of the Royal Family with their wedding bouquets. That honor and privilege has on the recent marriage of the Princess Mary of Cambridge been again accorded to that establishment, and Messrs. Veitch & Sons by special permission presented the Princess with a splendid bouquet, which consisted of Orange blossoms, Phalænopsis, Odontoglossum pulchellum, Calanthe, Burlingtonias, Stephanotis, white Roses, &c., the garniture being of Honiton lace. We believe Her Royal Highness was graciously pleased to accept it personally from the hands of Mr. Harry J. Veitch.—*London Times*.

RIPENING LATE PEARS.—It would be an interesting subject of inquiry whether we are not altogether wrong in excluding the light from late ripening fruit. Light is, indeed, pre-eminently the great ripening agent in nature, and though unquestionably a low temperature and darkness will retard the process, still when the desired period of perfection approaches we are wrong, I think, in not employing light as well as heat to further our object. For very late Pears I would suggest the Waltonian case as the best of all means that could be employed for ripening them. Light in its relations to vegetation has not received its due share of attention from horticulturists, who seem to overlook the fact that Nature always increases heat and light simultaneously.—*Cottage Gardener*.

THE DATE PALM.—The Date Palm at an early period of history must have engaged man's attention in an eminent degree. It grows, to begin with, in a tract of country where atmospheric moisture of any kind is so scanty that its leaflets, unlike those of other Palms, are constructed so that at their base they form little receptacles, and thus catch every drop of moisture. It has no branches like other trees, or as the Gingerbread Palm (*Hyphæne thebaica*), with which it is occasionally associated. It has several features in common with man which no explanation could remove from the minds of primitive people. Its body is covered with hair, like the body of man; its head, once cut off, would no more grow again than that of human being; the male and female are represented by different trees, and it is well known that the female would die an old maid unless some bachelor should take compassion on her. Add to this that the whole population at that time relied upon Dates as their staple food, as is still the case in those countries. Moreover, take into consideration the impression produced upon an unimaginative people, when after travelling for days in dry, dusty, waterless deserts, with nothing in sight but grey drifting sands and skeletons of animals perished on the road, they suddenly entered a grove of Date Palms, affording water, shade, fuel, food, and repose. They must have been made of stern material if all this had made no lasting impression upon them. As they lay under the trees and saw the evening breeze gracefully playing with the feathery leaves which formed bold arches over them, gilt by the last rays of the setting sun, and soon to be silvered by the rising moon—a forcible appeal must have been made to the religious element of their composition, and these Palm groves must have appeared to them places peculiarly suited for the purposes of worship. And such indeed was the case. Palm groves, and those of the Date in particular, were deemed peculiarly sacred. As civilization advanced, and regular

temples were built, the architect naturally took for his type, what must ever have been associated with his religious feelings—the Palm grove.—*Gardener's Chronicle*.

WINTER-FLOWERING OR TREE CARNATIONS.—These superb winter-flowering plants are not usually well managed in private establishments; and several correspondents having simultaneously made inquiries about them, particulars of their management have been obtained from one of the most eminent cultivators, who for many years past has had extensive experience with them, being under a contract to supply a certain number of flowers daily during the season to a leading firm in Covent Garden flower market.

The plants are propagated from cuttings of two or three joints in length; the first are put in early in the month of March, and afterwards a few other batches for succession to the middle of April. They root quickly and certainly on a moist dung heat, having the same treatment and being often in company with cuttings of Verbenas, Petunias, and other bedding plants. When rooted, they are potted into large thimbs, in light rich compost, and again placed in a gentle heat. When established in these pots, they are removed to a green-house or pit, and they remain there till the end of May or beginning of June, according to the weather and the strength of the plants.

When removed to the pit, a certain number of the forwardest should be selected to push on for early bloom. These, if carefully dealt with, will begin to bloom in November, and will continue blooming several weeks. None of these should be stopped. The rest should be stopped, both to ensure a later bloom and to make finer plants of them. The process of stopping consists in nipping out the point of the shoot, so as to cause the plant to throw out side-shoots.

Towards the end of their term of residence in the pit, they must have air night and day, to render them hardy. In the first week of June they must be shifted into six-inch pots, the soil being two parts turfy loam, and one part thoroughly decomposed manure, with a fair sprinkling of sand, according to the quality of the loam. The best material to drain the pots is broken oyster-shells. When potted, they are plunged in coal ashes, in the open air, in a sheltered spot, and are never allowed to want water.

In the first week of July the forwardest and strongest plants are selected and shifted into eight or ten-inch pots, the same compost being used as

before. Afterwards a few others of the forwardest are shifted on to make specimens to bloom in February. Those intended to bloom in November should have every encouragement; give them a sheltered position, plenty of water, and do not shift them late or into pots too large, or they may not bloom as early as desired.

In the latter part of September, they must all be housed, but must have plenty of air, and be regularly watered. In October begin to assist them with weak liquid manure water if the pots are full of roots. But if the pots are not full of roots, they must not have manure water. It only remains to see that they are securely and neatly staked, so that when in bloom they will be handsome, and the weight of the blooms will not break the stems.

Old plants are comparatively valueless; but if people prefer to keep them, they should be pruned back in March, and be placed in a warm pit or green-house to induce new growth. About three weeks after the pruning, shake them out of the pots, cut back the roots, and repot them with fresh soil in the same pots, and place them on a very mild bottom-heat. At the end of May these should be plunged in coal ashes in an open quarter, and have the same attention as already described for the stock of yearling plants.

Another mode of disposing of old plants is to let them remain in their pots without pruning, and to plant them out against a south wall in June. Give them plenty of water, and they will flower finely in September and October, and if protected with a mat in severe weather, may survive the winter.—*Floral World*.

Horticultural Notices.

NEW HALL OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

It is very gratifying to us to be able to announce that this project, which has been one of the wishes of the society for so many years, will now be successful. Over \$50,000 has been subscribed; the ground has been purchased, and ere our readers see these lines, the walls of the building will no doubt be in progress. Dr. Warder paid a very handsome compliment to the society, when in a recent address, he characterized the labors of this society as of national usefulness. This has been the great secret of its long continued success. Most societies dwindle away in a few years, but this has grown in public favor with age. One of the secrets of its success is, that it identifies itself with the prosperity

of Philadelphia generally. In this Hall enterprise, it has calculated to provide for the wants of the citizens, as well as for its own wants. It will be larger than any public Hall in this city, and probably in the United States. It will certainly contain more accommodations, and be better arranged than any now existing. It will be let out for all public purposes, when not wanted by the society, and will no doubt yield a very handsome revenue. The present Hall of the Society brings in a handsome income, over expenses.

A Fair is soon to be held by the ladies, attached to the Horticultural Society; the proceeds of which are to be devoted to the *decoration* of the Hall after it is finished by the builders.

Persons who are not members of the society, can contribute as an investment if they choose. There is no doubt it will pay them a great deal better than hundreds of stocks, into which they readily enter—many of our nurserymen who know how hard it is to get money, and no less how hard it is to lose it, have contributed liberally in the full belief, that they could invest their money in no better way. Those desiring to contribute, may address the President, D. Rodney King, Esq., Philadelphia.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSION ON MR. PARRY'S ESSAY ON SMALL FRUITS. SEE PAGE 260.

In reply to a question from the Chair, Mr. Parry said the *Ida* grew well on his sandy soil, and stood the heat well—many varieties failed on hot soils. *Jucunda* burned out with him.

A. W. Harrison spoke favorably of the strength and vigor of the *Ida*.

Mr. Scott inquired how the Pear did in New Jersey? He thought the dwarf Pear had not had justice done it. It was well known that very successful dwarf Pear culture in this country was limited to a few leading varieties—most of those who had failed had been importers of all kinds of French trees. Improper varieties he thought together with foreign trees, had done dwarf Pear culture undeserved injury.

Mr. Parry said the Pear crop was a fair average one in New Jersey. There were but few leading profitable varieties there. St. Michael d'Archange was one of these.

Early Apples were profitable in New Jersey. The crop was up to the average this year. Hagloe and Early Joe were most profitable with him. He had experimented with 312 varieties of Pears from Leroy. But 12 or 15 proved worth retaining.

Mr. Meehan said with regard to the adaptability of New Jersey soil to raise Pears—there were plenty of healthy Pear orchards in New Jersey, fifty years old or more, which bore abundantly.

Mr. D. Rodney King, said in the lower part of Delaware, with which he was very familiar, and the soil of which was similar to New Jersey, old Pear trees were very numerous; almost every house had two or three about them. They bore enormous crops annually.

Mr. Parry was asked for information about the Kittatinny's origin. He only knew it was found wild in the mountains. He had recently seen it growing in Mr. Williams' ground, and felt that it deserved all the praise that was given to it.

Mr. Meehan asked Mr. Parry if any attempt had been made to select improved kinds of the Sand Blackberry, (*Rubus cuneatus*), the flavor was the best of the Blackberries, and its size was nearly equal to the best of our garden kinds. Its enormous propensity to sucker, he thought against it; but supposed a variety that would not sucker so much as others might be found. He also thought Mr. Parry's claim of the Delaware Grape as of New Jersey origin "not proven," though that State had the just claim of preserving it to us. His investigations had favored Virginia as the probable place of its origin.

Mr. Scott inquired the origin of the New Rochelle Blackberry. It had been found in a hedge in New Rochelle; but how did it get there? He believed it might be a foreign variety accidentally brought there. It had been compared with American species, and thought to be distinct from them all. It often winter killed. If a native species, it should be hardy.

Mr. Kilvington had found wild Blackberries so nearly like Lawton or New Rochelle, that he could have no doubt about the country it belonged to.

Mr. Meehan said in his botanical pursuits, the genus *Rubus*, or the Blackberry family had come under his particular attention, and he had found the New Rochelle, almost the normal type of the *Rubus villosus*. That species was extremely variable in a wild state; extreme forms might often be considered species, but for intermediate forms which evidently united them all together. The trouble with the family was that the different species, most probably hybridized together. It was at one time supposed they would not—but the English Black Raspberry was a hybrid, not merely between two forms of the same species, but between the Blackberry and the Raspberry. A Canadian gentleman had produced undoubted hybrids between a variety of

the European *Rubus idaeus* and the American *R. occidentalis*. He had examined the Wilson's Early, and could refer it to no species, and yet, it had not character enough to form a species itself. If its parentage could be known, his impression was, it would be a hybrid between the common high-bush Blackberry (*Rubus villosus*.) and the common Dewberry, (*Rubus Canadensis*.)

The *Rubus villosus* often killed in winter in its wild localities.

Mr. Parry said he had some facts which confirmed the guess of Mr. Meehan. Seedlings of Wilson's Early, produced some plants which could scarcely be distinguished from the Dewberry—others were high and strong like the common wild Blackberry.

Mr. Scott asked for information as to the value of the cut-leaved Blackberry?

Mr. Parry said it was worthless with him.

Mr. Meehan said it had the one good quality of bearing good sweet fruit abundantly under trees or shady places, where others would not do at all. He thought it worth raising seed from, with a view to improvement. It belonged to a species of Blackberry, (*Rubus discolor*.) or *Rubus fruticosus* of some older botanists, which had the similar character of having very hardy, woody stems. In mild countries, he had seen stems of it several years old, nearly as thick as his wrist, and growing up into trees like the grape vines of our woods. He had described a very remarkable specimen in an article to the "Phytologist" in the volume he believed for 1844.

PENNSYLVANIA HORTICULTURAL SOCIETY.

MONTHLY MEETING, Aug. 21.

The best collection of Pears was awarded to Mr. Wm. Parry of Cinnaminson, New Jersey. He had 64 varieties in first rate order. The Julianne and Bartlett were the best in eating condition. The Beurre Giffards were very handsome, but deficient in flavor. To the same was awarded the premium for the best collection of Apples. He had 70 varieties. The summer Hagloe was the best of the ripe ones; large and very showy. Mr. Parry says he finds it a very profitable one to grow. William's Favorite, Bevans' Favorite, Hawley and Maiden's Blush, were also much admired in the collection. The best 6 varieties of Apple to S. W. Noble, who also had fine seedling Plums. The best Blackberries were the new Rochelles of Jacob Huster, gard. to H. Duhring, Esq. Three pretty good bunches of Chasselas de Fontainebleau Grape from Eden Hall Convent, had a special premium. Jas. McDonald,

gardener to M. Baird, Esq., had White Syrian, Muscat Hamburg, and Chasselas de Fontainebleau, which also had a special premium awarded; also one to D. McCallum, gardener to Mr. Levis, for Black Hamburgs.

There was nothing more than the usual excellence in the vegetables; except a variety of Tomato called the "Baird" from James McDonald, gardener, to M. Baird, Esq., the beautiful crimson and solid flesh of which, when cut through, obtained a favorable notice for it from the committee. A fine plate of Tildens was also exhibited by A. L. Felten, who had the premium also for the best collection of vegetables by a market gardener, 33 varieties of vegetables in all. Jacob Huster, gard. to H. Duhring, Esq., had the premium for the best collection by a private grower of vegetables.

Best display of Plants in flower, to Ed. Hibbert, gardener to Fairman Rogers, Esq. In this collection, was a very well grown and tolerably well flowered *Russelia juncea*, *Yucca aloefolia*, very seldom seen in flower—the plant was about five feet, and the spike about two. Donald McQueen, gardener to J. Longstreth, in the second premium, had a few good plants. Thos. Meehan had the award for the best 12 hardy herbaceous plants. *Physostegia* or *Dracocephalum Virginicum*, *Liatris pycnostachya*, *Lobelia cardinalis*, being the showiest of the lot. The same exhibitor, the best six gladiolus, Mad. Victor Verdier, *Calendulacea*, *Aristote*, *Brenchleyensis* and two others.

Special premium was awarded equal in amount to the first premium to Mr. Bevis, gardener to Dr. Camac, for a very fine collection of plants in which a very fine *Irisine Herbstii* was much admired. H. A. Dreer had a pretty table design, for which the first premium was awarded; who also had the fine new *Lilium Auratum* in bloom, with one large flower on it. Mackenzie & Son had a collection of hardy Phlox without names, but very superior varieties.

THE AMERICAN POMOLOGICAL SOCIETY.

In consideration of the existence of cholera in several of the cities of the United States, and also of the fact that there is a small crop of fruit in many parts of our country, the undersigned, by and with the advice of the Executive Committee and other leading Pomologists, does hereby postpone and defer the meeting of said society to the year A. D. 1867, when due notice will be given for its assembling, in the aforesaid city of St. Louis.

MARSHALL P. WILDER, *Pres't.*

JAMES VICK, *Sec'ry.*

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THOMAS MEEHAN, EDITOR.
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Hints for October.



FLOWER-GARDEN AND PLEASURE-GROUND.

Continue to plant deciduous trees at every opportunity. Whether spring or fall planting has the greatest advantages is swallowed up in the fact that "we shall find enough work for the spring." Hardy annuals of many descriptions will not flower next season unless sown now; especially Larkspurs, Ipomopsis, &c., and all bloom the stronger from being sown now. They can readily be transplanted early in spring to where they are to remain.

Bulbs that are easily affected by frost, as Gladioluses, Tuberoses, and Tigridias, should be taken up early and dried slowly in a secure place. Hyacinths, Anemones, and similar plants for spring flowering, should be planted out as soon as they can be obtained. The latter may be put out an inch or so below the surface, and be protected during the winter with a slight covering of leaves; well decayed cowdung is an excellent manure for them. See that the Dahlias are true to their names before the frost destroys their flowers; after which take them up, dry them slightly for a few days, then stow them away loosely in any cool place just secure from frost. If they rot in winter it will be either through getting too warm and damp, or too dry and frosted. Wherever alterations and improvements are to be effected, get as much as possible carried out before winter. Look on the fall as if it were the real beginning of spring work. Laying of turf may be well proceeded with; box edgings, though, are best deferred, as their beauty is very frequently sadly defaced by frost.

VEGETABLE GARDEN.

Celery as it grows will require earthing up, and Endive successively blanched; but the main business of the month will be preparations for housing the root crops for the winter. Beets are generally the first thing attended to, they being the most easily injured by frost; Carrots, Salsafy and Parsnips following. The latter are never really good until they have been well frozen; and many leave them entirely in the ground, taking them up as wanted for use. We prefer taking them all up and packing them in sand or half dried loam, in a shed or cellar, which can be kept just above freezing point; yet the cooler the better. If suffered to be in heaps they heat and soon rot. In the same situation Endive and Cape Brocoli may be preserved to the end of the year—they are taken up with a small quantity of earth adhering to them, and placed side-by-side together. Tomatoes, if dug up also, and suspended, roots upward, in such a situation, will keep good a long time; but this must be done before the least frost has touched them. It is a wise plan to sow a little more Early York Cabbage early in the month, as in fine mild winters the September sowing grows too forward when protected. A very slight protection is better for them than any elaborate affair, the sun principally injuring them. The same remarks apply to Lettuce intended to be kept over winter for spring use, though the sun is less destructive to them than to the cabbage.

Forcing vegetables, wherever the least command of heat can be had, is the most interesting and useful part of gardening. It is not by any means what it is often considered, an operation by which you pay a dollar for every mouthful. The Asparagus, Sea Kale, Lettuce, Radish and Cauliflower can be had for months earlier than in the open ground, wherever a regular temperature of 55° can be obtained, with, of course, the proper amount of air, moisture, &c. Asparagus can be had under a greenhouse stage, though of course the tops will not be so green, nor will it be much else but in-

different under such circumstances, as it would be in the full light.

Radishes require an abundance of air, and Lettuce light. Cauliflowers, if kept for some months with all the light and air possible, at a temperature of 50 or 55°, may have it gradually raised to 60 or 65, and even 70°, and thus come into use in February, when there is no vegetable more desirable.

Cucumbers, Tomatoes and Beans require a temperature of at least 65° to begin with. If a temperature of 70 can be maintained in the coldest weather, a few of these might be sown by the end of the month, which will produce some very acceptable dishes about New Year's day. Rhubarb, if carefully taken up at the fall of the leaf and potted, or put into boxes, will also come forward well if put under the stage in a house of the last temperature.

FRUIT GARDEN.

Established orchards, on thin or impoverished soil may be renovated in the following manner: If a tree have been planted say fifteen years, and attained the size we might expect in time,—get, say ten feet from the trunk, and dig a circle two feet deep all around it, and fill in with a good compost; the effect the next season will be quite marked. If the tree is older or younger, the distance to start with the circle from the trunk will of course be proportionate. A top-dressing will also be of great assistance, as well as a vigorous pruning out of all weak or stunted branches. Moss and old bark should be also scraped off, and if the trunk and main branches can be washed with a mixture of sulphur and soft soap, much advantage will follow. Old decayed bark on fruit trees is always a sign of a want of vigor. When a tree is growing thriftily it cracks this old bark so freely, as to make it easily fall off; but when the tree is weak and enfeebled, the bark often becomes indurated before it has got cracked, and in this state the tree becomes what the gardeners call 'hide bound,' and artificial means must be afforded to aid the tree to recover. In the cherry and plum trees this is easily done, by making longitudinal incisions through the bark with a sharp knife. In the peach and apricot also, this process has been employed with advantage, in spite of the learned theories which have attempted to show up the absurdity of the practice.

Sometimes fruit trees are unproductive from other causes than poverty or 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.

Communications.

MILDEW IN GRAPES.

BY JAMES CREED.

I drop you a line to ask what is your experience in regard to the application of Sulphur to Grapes while in blossom. I saw it somewhere stated (and which I deemed pretty good authority,) that by the application of sulphur at the time mentioned, it would prevent rot, &c., and so gave it a trial this season. I first applied the sulphur when the leaves first started; next when in blossom; and lastly, a few days since, and must acknowledge that never to my knowledge, had a more healthy looking lot of vines, both in fruit and foliage as the present season; and not a little of this, I think may be attributed to the perfect consternation created among the insect world by the aid of sulphur and De la Vergne's Bellows. But some of the varieties have not set quite as perfectly as usual with me, and do not know whether to attribute it to an excessive rain or the application of sulphur at the time mentioned. The Diana and Concord are well set; while Hartford Prolific, Louisa, (which latter is nothing more or less than Isabella, and should be called by that name) Alvey, &c. &c., are not as compact and full as usual. This is undoubtedly a subject that interests a goodly number of your readers, and a chapter in your experience touching upon this point would be carefully stored away for future reference by all interested in Grape culture.

[The sulphur did not probably injure the flowers. The trouble most likely was with defective pistils, or the pollen may have been unsound.—Ed.]

FIRE BLIGHT IN PEARS.

BY JAMES CREED, ROCHESTER, NEW YORK.

I have for some years past, noticed (and which you and others may also have done) that the earliest symptoms of Pear Blight are when there is apparently an unnatural moisture to be seen on the parts affected, and this is best detected early in the morning, and before evaporation takes place by the

sun acting upon it. This moisture may be seen morning after morning, and sometimes in the same spot for a whole week before discoloration takes place, and at which latter stage unfortunately the generality of people first detect it. Now I have seen it most strongly asserted that the sun is positively the cause of the disease; and the same writers just as boldly assert a cure by simply drawing a knife through the bark, and especially near the *blackened* parts, while certain other portions are to be lopped off; but if I were to judge from the sense of touch; I certainly should be more inclined to attribute it at least partly to low, rather than high temperature. I have often applied my hand upon the trees at mid-day, and the sun intensely hot, and could trace scarcely any effect otherwise than a healthful glow, but on repeating the same test the following morning, both leaf and branch felt excessively cold and chilled.

I for one, have not been successful by applying the knife at this late stage of the disease, but in the early or moist condition of it, I have found more encouragement. The present season I have had but one tree affected, and the first ocular demonstration of it was in its discolored stage, and all that was noticeable, was at once lopped off. The following morning, the tree was pretty closely scanned, a bad spot soon found (which the moisture unmistakably indicated) on the trunk of the tree, extending half a foot, and but a few inches from the ground, and supposed the fate of the tree sealed. I however applied the knife, cutting directly through the part affected, and giving a cut or two on the outer edge of it, extending the knife two or three inches above and below the moisture, and for several days the infected sap oozed out freely. The tree is now apparently quite healthy, and has no signs of discoloration where treated as above mentioned, which would not have been the case had the tree been allowed to have arrived at the fatal stage. Besides using the knife, I afterwards gave the diseased spot a puff or two from the sulphur bellows. I mention the above in way of a moments gossip.

TRITOMA UVARIA HARDY.

BY W. C. STRONG, BRIGHTON, MASS.

You will be glad to hear of success in wintering the *Tritoma* in the open ground. Last fall I had a bed of *Tritoma uvaria*, the plants being thick like a lily bed. The plants were covered, tops and all, with about four inches of leaves, sufficient to protect but not to keep out the frost. The result is,

that not a plant suffered from frost, and such a profusion of tall gay plumes as has been, is and will be coming up is a wonder unto many. At a distance the bed appears like a phalanx of soldiers' plumes, surpassingly brilliant. Who can doubt that the *Gladiolus* treated in the same way will be entirely hardy.

I am glad also to repeat that your Philadelphia Raspberry withstood our past unusually trying winter entirely unprotected, and gave me a very fine crop. Though not of largest size, its hardiness and productiveness give it great value.

MILDEWED GRAPES IN KANZAS.

BY A. M. BURNS, MANHATTAN, WILEY CO., KANSAS.

You may call to mind, that in my letter published in the April number of the *Gardener's Monthly*, I stated I had fruited six varieties of Grapes for four years, and some varieties since 1859, and that I had "not seen a single bunch or berry diseased." This I attributed to our freedom from atmospheric humidity. I regret that I cannot repeat the same words now. Last year was a very "wet year," and during the spring and beginning of this summer, we had heavy rains, which I suppose caused a few berries to mildew among some of the rampant growing varieties which were planted in 1860, the distance apart was 6 by 6 feet. They had grown so strong that I could not control them; therefore, they received no attention; the weeds had grown so large that neither sun or air could penetrate between them. Other vines of the same varieties, which were planted 8 by 10 feet showed no signs of mildew. Out of near two hundred varieties, (75 planted this spring) in my grounds to test in our soil and climate, not one variety (except these mentioned above) looks unhealthy. Is this any evidence that moisture has something to do with mildew? Our climate as a general rule is very dry.

A NEW WHITE GRAPE.

BY HORTICOLA.

Although I knew that every attempt to cultivate the varieties of the Continental Grape—the *Vitis vinifera*,—had failed, yet I concluded to try what I might be able to accomplish. Nobody heeds the lesson history teaches; not even personal history, *i. e.* experience is powerful enough to make people wiser.

Several years after the termination of the Crimean war, it occurred to me that Grape vines from the Crimea might do well here. The climate of

that country is as excessive as ours; sudden changes are there as common as here. A little later I met accidentally with the name of a Crimean gentleman in a public print, and I addressed a letter to him, stating my object, and requesting him to send me the best Crimean varieties of the Grape. About nine months after, I received from him twelve varieties in the best possible condition; unfortunately, the labels of most of them were defaced; only a few were legible. Some of the vines grew finely, others were sickly, and in the course of a few years, the original plants perished.

One of them bore two imperfect berries the first season after planting—a friend of mine who has much knowledge of Grapes and their culture, happened to be present when they were ripe; he tasted one of them, and pronounced it as one of the most luxurious that he knew. The three seeds I obtained from the two berries I planted; but one of them germinated, and gave me plant which I am going to describe in this article.

I planted it out in the following spring; I covered it, as I do all my vines without exception, in November with a few inches of earth. *It has never been sulphurated*, on purpose, *but it has never shown any trace of mildew*. It is a vigorous grower, the wood is strong and short jointed. The leaf is nearly round, sharply indented or serrated.

Bunch and berry are of medium size. The berry is nearly round, white, with an amber tint; the skin is of course thin; it has no pulp and very small seeds. The juice is so vinous, sweet and aromatic, that it excites the admiration of all who taste it.

The plant is a picture of health and beauty. Last year it stood there among vines, injured by and dying from mildew, untouched by that terrible disease; it retained its leaves, although not sulphurated, green and healthy, until they dropped, ripening its wood thoroughly every year. While the leaves of a number of my vines have been burnt by the enormous heat of this summer, the vine in question is as green as it was in the beginning of June.

In September last, my friend Parsons with his foreman, Mr. Trumpey, called on me to see the vine and taste its fruit; a little later Mr. Marc of Astoria. They expressed themselves in regard to it exactly so, as I have done in the above, and did not hesitate to declare—requested by me to give their opinion *without any restraint*. They considered the vine fully acclimated after a trial of eight years in my grounds. Mr. Marc offered me an enormous price for a single eye, but I declined it.

In the above, I forgot to state that it *blooms later* than any variety I cultivate; it ripens its fruit invariably by the middle of September.

I wish such readers of the *Monthly*, as take an interest in Grape culture, could see the plant; it would do them good. As science is my sole object in Grape culture, I have carefully abstained from any exaggeration, confining myself to the expressions of others. I cannot, however, conceal it, that it makes me exceedingly happy to have been instrumental in producing and retaining a Grape to this country of my choice, that unites so many of the best qualities, without having to my knowledge a single fault.

[Our correspondent is one of the most intelligent amateur Horticulturists we have in the United States, and anything he writes, always possesses much interest. There does not appear to be any reason why some variety of the European Grape might not be found to do well in our climate, and possibly it may happen that this one may in the future, do as well as it has the past eight years; but it would be as well to remember, that many similar instances have finally resulted in failure. About York, in Pennsylvania, vineyards of the foreign Grape, used to thrive perfectly for many consecutive years; and though isolated cases of foreign Grape vines successfully grown occur, yet it is the exception, and not the rule for them to do well there now. Seedlings generally do well for some years. The Montgomery, a foreign Grape of Hudson River parentage did well for some years, but is failing now. In Philadelphia, the Clara and the Brinckle for a long time did so well, that a Committee of the Pennsylvania Horticultural Society thought they had at length found a descendant of the foreign Grape, that would adapt itself to this climate, and awarded the raiser of them, a higher premium than was ever given by the Society for a new seedling fruit—yet after years of trial, neither the Brinckle nor Clara proved ultimately more reliable than Black Hamburg or Golden Chasselas.

We would not discourage our friends from trial with this seedling—as we said a foreign variety *may* be found that will *permanently* prove adapted to our climate; but it is well to remember past experience, that we build not up our hopes too high.—Ed.]

OPEN AIR GRAPE CULTURE.

BY JOHN M. IVES, SALEM, MASSACHUSETTS.

From the exhibitions of hardy Grapes this year we begin to have hopes that at no distant period, the culture of this fruit will be an important branch

of industry; but a few years since the Isabella was the only out-door Grape, though only in the most favorable places could it be depended upon to ripen its fruit, but we now have varieties so much earlier, that this kind is being first superseded by sorts not only sure of ripening in this latitude, but of superior size and quality, approaching the foreign kinds in delicacy and richness of flavor. Within a few years, we have had the Delaware, Concord, Hartford Prolific, Rebecca, Creveling, and other valuable kinds, all of which possess some qualities to recommend them as superior to the Isabella, the Rebecca, Delaware; and Creveling, as being earlier, and of good quality, although a little tender, and subject to mildew somewhat in foliage, while the Concord, and Hartford Prolific, are among the hardiest in this respect, yet the fruit is not quite equal to some, and have more of the harsh flavor (denominated "foxy") of the wild species. The Adirondac, Wilmington White and Cuyahoga, are new varieties which we have not as yet obtained. Allen Hybrid raised by J. F. Allen of Salem, we have never grown, and cannot speak with certainty as to its value as a *hardy* Grape, we have seen specimens of the fruit of fine quality resembling to our taste, the White Sweetwater. Some of the cultivators around Boston think well of this variety; it is certainly a fine flavored white Grape. The Hartford Prolific although valuable as one of the earliest, and about equal in quality to the Concord, has the fault of dropping its fruit, and the Concord which ripens two or three weeks later, fails to mature its crop in unfavorable seasons. Of all the kinds that have come under our notice for the past four years, we have seen none to equal, taking into consideration all desirable qualities, than the Grapes known as Rogers' Hybrids, raised by E. S. Rogers of Salem, Massachusetts. His experiment in hybridizing has proved and set at rest a subject which has been some time in dispute among horticulturists, and distinguished botanists; such among the latter is Le Conte, who says, "That although among some families of plants, hybrids occur naturally, or may be formed artificially, yet it is difficult to understand how this ever can be the case in the genus *Vitis*, on account of the minuteness of the flower, and the parts of fructification, still we would not, however, assert that by hybridization naturally, or artificially, is absolutely impossible." White of Georgia says "it is the first time that this has been done effectually." Mr. Rogers has given to the country, varieties of hardy Grapes, the most valuable of any heretofore known for this latitude, and also for more southern ones, like New

York and Virginia; some of his varieties, a little too late here, have been pronounced *there*, to be the best hardy Grapes ever grown in those parts. These varieties, some forty or more were produced by hybridizing one of our best and earliest wild Grape, known as the "Mammoth," belonging to the species (*Vitis labrusca*) with two of the earliest of the foreign species (*V. vinifera*) known as Black Hamburg, and White Chasselas; and the change from the wild type in the new seedlings is immense, and apparent to the commonest observer; the new varieties having none of the foxy odor, peculiar to the native parent from which the seed was taken, and resembling in size, color, and delicacy of fruit, the foreign, and the berries like this species having the property of not dropping. The few which were crossed with the Chasselas, have much of the character of this sort, not one of the seedling's coming black in color like those raised from fertilizing with the Hamburg.

Mr. R. has again crossed some of his present varieties with the foreign, a few of which have borne fruit; this fruit and foliage of these prove beyond the doubts of the most skeptical, the certainty of raising new Grapes by this process. Another fact which we think is very strong evidence, is the character of the blossoms. It is well known to botanists, that all the American species of Grapes are what is technically termed *dioecious*, *polygamous*; that is, that some vines are *staminate* and never bear, others have perfect blossoms and produce fruit. If we attempt to raise seedlings from our wild Grapes, about one-half or a large proportion usually prove barren, *never* producing anything but blossoms; any one accustomed to examine these can tell when in flower, the fruiting from the staminate portion, these show large clusters of blossoms but no fruit follows. With the foreign species, it is different; here the male or barren plant is not known, *all* the seedlings from these are fruit bearing vines, and the fact that Mr. Rogers has never had an *unfruitful* plant among upwards of forty varieties which have borne, is strong evidence, without any other, of their being hybrids, inheriting this quality from the foreign parent. Thus from our wild Grape, Mr. R., following the process of Knight of England with pears and cherries, has produced in a short time, varieties, which it might have taken a long course of years to get by the chance method of Van Mons, viz., beginning with the wild variety, and sowing the seed through successive generations, and whose best fruits after all perhaps, were only accidental crosses, made by the bees, and from the pollen, floating in the air, from

the many varieties which he had growing and blossoming together; by the latter process many thousand seedlings were raised to produce a few good fruits, while by the other method of hybridizing with a view to certain results, nearly all the seedlings prove superior, and very nearly, with the valuable properties we wish, as is the case with these Grapes. Mr. R. knowing what was wanted, chose the wild variety on account of its hardiness and earliness (in preference to the Isabella,) for the mother of the new variety, and for the male parent; the two hardest of the foreign species, viz., the Black Hamburg and the White Chasselas; and from these two species have come numerous valuable varieties, possessing many of the qualities desired; such as hardiness of vine, earliness and delicacy of fruit. These Grapes are sent out by numbers; No. 15 has ripened for four or five years in succession, when many other, much praised kinds, have failed, and this year especially, it has proved fine in many places, and superior to any kind that we know for its fine flavor. We have even heard many say that they preferred this to many of the foreign varieties from under glass, and this is not only valuable kind among these new seedlings; there are many other varieties, which are thought nearly equal, and a few quite as good. Nos. 1, 3, 4, 9, 14, 28, 30, 33, 41, 43 and 44, and others which we have not as yet seen. The above mentioned sorts are all earlier than the Isabella, and many of them earlier, larger and much superior to the Concord in quality. An intelligent Scotch gardener who has had much experience in the culture of the Grape, considers these hybrids to be most promising Grapes for out-door culture we possess, this is also the opinion of one of the best judges and most scientific amateurs in the cultivation of the Grape in New York State, he says "that No. 15 as ripened here at Ithaca, has to my taste a resemblance to the Catawba; it is decidedly of that flavor, but milder as a table Grape, and about *twice* as large in size of berry as that variety. No. 4 as ripened here this year, is a fine large black Grape of sweet and mild flavor, better than the best Isabella, this number reminds me of the Black Hamburg. As the New England varieties improve as to sweetness for two or three years, after their removal here, I shall expect very much from these hybrids." The same testimony has been given from Virginia, Ohio, Illinois and Canada. From this last place I received a paper containing an account of the recent "Fruit Growers Convention" in Canada West. In their report on Grapes exhibited, they say of Rogers' No. 15, "Not pulpy,

best of the new Grapes, berry and bunch large." Another cultivator in the same locality, says, "Rogers' No. 15 very hardy, early, fine flavor, large berry, and fine bunch, well shouldered." J. B. Garber of Pennsylvania, (who is said, in the "*German-town Telegraph*," to have had more experience in fruiting these hybrids than any other person in the State,) says, "That he has fruited thirteen varieties of these new Grapes this season, and that they are one and all superior to nine-tenths of the kinds in common cultivation, vigorous and fine growers, the wood ripening perfectly, and thus far with him, no mildew, rot, or any defect whatever, some were ripe the first week in September, and none ripened later than the Concord, and ALL were fully ripe before either the Isabella or Catawba."

The American Grape is now receiving great attention in the vine-growing regions of Europe, especially France, where it is being introduced *with the hope, that it will be free from the disease which attacks and sometimes destroys the European vine*. The cultivation of the Grape, particularly in Western New York, is considered a profitable crop. Mr. McKay has realized during many successful years from one thousand to twelve hundred dollars from the sale of Grapes, grown on one acre of ground.

SOIL, AND MANURING THE VINE.

The best and most natural soil for the Grape is a dry porous limestone. It should be well drained; cold and wet situations are unfavorable for the vine. In manuring for the Grape we should *never* use animal manure *uncomposted*,—such was the testimony at the National Fruit Growers' Convention. The mineral manures, in consequence of their ingredients, have the most effect on the quality of the fruit, while animal matter encourages the formation of wood too fast, and makes the vine tender and subject to disease, and, we think, mildew. The best dressing we find, is bone and oyster shell flour, manufactured *without burning*. Bone dust contains the most nourishing elements with wood-ashes; and a good surface soil, well covered in the fall with dry leaves, are nearly all the materials necessary for the vine; the finer the dust of the bone, the more immediately active it becomes. Bones are said to contain a greater amount of phosphoric acid than from any other one substance, hence it has been beautifully expressed that "there can be no civilization without population, no population without food, and no food without phosphoric acid; and that the march of civilization has followed the direction or supply of this material." Of all fruits none are more impatient of wet than the Grape; a

dry situation is absolutely essential; therefore, if the soil be at all retentive, thorough draining is necessary.

ROOT PRUNING PEAR TREES.

BY ED. SMITH, GARDENER TO J. T. BUSH, ESQ., CLIFTON, CANADA, WEST.

I notice an article in the *Monthly* from Dr. Houghton, on cause of unfruitful Pear trees. I have had much experience in England; and there you will see the Pear tree many years old, growing like a poplar, and not the sign of a blossom. The secret is the sap runs into the growth of the tree, instead of the fruit bud, now this can be remedied only by pruning the root. Measure from the butt of the tree, a proper distance, then dig down to the root, all round that distance, cut through all the roots, and fill up the circle with a mixture of manure and sand from an old hot bed. This plan I followed for many year in England, upon Pears, Apples, Plums, Cherries, Apricots and vines, always very successful, they most generally bearing fruit the next year. I freely give you the result of many years experience. Try it on one tree, and after the first root pruning, repeat it the second time if the tree grows too fast, for I believe in cutting the roots.

The last tree I tried this plan on in England; was the old Swan's egg Pear, a tree 30 years old a fine handsome one. I never saw a Pear on that tree. My father gave me orders to cut it down. I set to work, I dug all the soil out to the roots, and cut through all the roots, (but at a good distance from the butt of the tree,) this done, I left the tree from some cause unfinished; it remained so for a very long time all the winter. I left England; my father left that place, and his successor observing the tree budding freely, gave orders to have it well covered up, the tree produced a full crop of fruit that year, and is now one of the best trees in the orchard.

KEEPING APPLES.

BY D. W. ADAMS, WAWKON, IOWA.

Very cheap and effectual plans to preserve perishable fruits, cannot fail to meet with a hearty welcome from growers, dealers and consumers; so any items of theory or experience will be gladly received at their actual practical value.

The method I have now in mind for the keeping of Apples, though not of value as far south as Philadelphia, is, I am confident, very effectual in a more northern locality. My plan is simply this, freeze up your Apples perfectly solid, and keep them so

as late in the spring as possible, and my word for it, you will find them as perfect in April, as they were in November. This plan *may* be generally known, but it is rarely practiced, and I suppose from the fact that most people have an unfounded dread of freezing Apples.

My attention was first called to this method twenty years ago in the town of Wenhendon, Massachusetts. A merchant bought a lot of Baldwins, and stored them in a loft, where they were neglected till the whole lot were solidly frozen. Having a large stock of Buffalo robes, he covered the floor with them, and setting on the barrels of Apples, he covered them with several thicknesses of robes, so that the fruit remained frozen till late in the spring, and then, of course, thawed very gradually. I was a boy in a store in that village then, and on July 4th, I retailed those Baldwins as fresh and sound as that variety usually is in December. Another, last winter, a merchant in this village, bought a lot of Apples, and stored them in a cellar poorly protected from frost. I visited him early in December, and he was burning coals in the cellar to keep his Apples from freezing. A few days after, I saw him again, and he had to give it up, and they were all as hard as stones. They remained so all winter, and in May he sold them at a high figure, being uncommonly well preserved.

A few years since, I received a barrel of choice Apples by wagon in December, mercury at 22°, distance thirty miles; of course, they were thoroughly frozen, and rattled in the barrel like stones. I wrapped the barrel in blankets, and set in a cellar at about forty degrees. In a month I opened them, and they showed not the slightest injury, either in texture or flavor from their winter ride. Now you will see from these notes, that in those localities where the winter is sufficiently cold and *steady*, Apples may be frozen up perfectly solid early in winter, and remain wholly dormant, and consequently exempt from decay for three or four months—by this means prolonging the season of fruits from December to March, or from March to June. I am unable to discover that freezing injures in the least, the flavor, texture, or keeping qualities of Apples if they are thawed very slowly, and in a situation where *air* and *light* are excluded. I know that this idea will startle some. Yet, I hope it may not be utterly rejected without a thorough trial. In northern localities, it is certainly convenient, and I know has been in many cases eminently successful. I know of no failures.

BLACK KNOT.

BY MR. L. MOWRY, GREENWICH, N. Y.

I read an article in your monthly a short time since on the "Black Knot," which is so destructive to the Plum tree in almost all sections of the country. I was interested in reading the article, but I do not agree with the writer in his conclusions as to the cause assigned. It however excited my curiosity, and led me to make a close examination of my trees, and I herewith give you the result of my examination and conclusions.

I am satisfied that in this locality the "Black Knot" is caused by an insect that stings both the bark and fruit of the Plum tree, for the purpose of depositing its eggs for reproducing its order in time. In making an examination of my trees, and cutting off excrescences, I found in those formed the "present season" a small white maggot or grub, about the size and form of those found in defective cheese, and when put under a magnifying glass, they presented much the same appearance as the white grub found in old decayed wood. The head was tipped with brown, and the body covered with little protuberances, out of which came a single hair or bristle.

I discovered on the same tree some defective Plums, and upon examination I found now and then the same worm or maggot imbedded in the fruit. This I am satisfied is the cause of diseased Plum trees in this locality. If you think the information worth publishing it is at your disposal.

[In this section the "Black Knot" often works through the old stems of the Plum and Cherry tree, where the insect must have had to puncture through a half an inch or more of old bark, before being able to get at the living sap containing vessels. We know of no insect likely to attempt this feat in depositing its eggs—ED.]

GRAFTING THE GRAPE VINE.

BY CHARLES CRUCKNELL, GREENWOOD NURSERY, POTTSVILLE, PA.

I have never experienced any difficulty in cleft-grafting below ground after the vine has commenced growing. I have likewise seen several instances, to one or two of which I will now refer.

A friend of mine wished to graft the Delaware on a very old vine of inferior quality, which grew by the side of the house. He sawed off the cane some two inches below ground and cleft-grafted it, inserting two scions. They both grew immensely, so much so that one had to be taken out to make room for the other. I have seen things grow

rapidly at times, but that vine beat everything in the shape of plant-growing. It grew rampant, and did not ripen its wood well. The vine was laid down on the ground, and by adding a slight protection it weathered the first winter very well.

That vine is now growing, or was a short time since, in the kitchen yard of Mrs. Alexis Dupont, Banks of Brandywine, Delaware.

The following case is of more recent date, and is close to your own *sanctum* :

Mr. James Laws of Germantown, showed me several successful Grape-vine grafts that were growing finely. I do not remember having seen his method described in your journal, I will therefore briefly advert to it. For my own part I do not see its advantages further than as serving to illustrate the possibility of grafting the Grape-vine.

In the *fall* of the year a strong cane is taken and shortened to within six or eight feet of the ground, the graft is then put in wedge-fashion, and tied with some kind of grafting twine. The vine is then bent down so as to bring the graft below ground,—precisely as in layering—a single eye only being allowed to remain above ground; thus to remain permanently. I saw these grafts two weeks ago, when they were growing finely, not one of them having missed.

I am glad to find this subject introduced for discussion in the pages of the *Monthly*, for it is just such items as this, that make your paper so valuable, and has placed it far ahead of your contemporaries.

MUSHROOM GROWING.

BY MR. LAMONT, GARDENER, TO C. ZUG, ESQ., PITTSBURGH, PA.

As I am a lover of Mushroom growing, I am always trying to find out all I can about them, and in the reports of the Pennsylvania Horticultural Society, for the month of April, 1866, Mr. F. O. Keefe, Gardener to J. B. Heyl, Esq., had on exhibition a fine display of Mushrooms, &c. Mr. Meehan, we wish you would let us know through the *Monthly* where Mr. F. O. Keefe purchased his spawn, and whether it was made in England or in America, for we have difficulty in finding it good.

Mushroom growing does not require so much skill as one would think. After the bed is made and the *spawn* planted, the watering is the only skill required. I believe in most beds that do not yield, the spawn is killed with too much water.

Here I would like to give your readers my experience with spawn for three winters. The first

winter I lived with C. Zug, Esq., we had American made spawn, and I can assure you that it yielded splendidly; but the second winter we had English made spawn, and I am sure it ran beautifully, for I could see by removing a little of the ground that it would extend itself through the ground; but alas, we lost nearly all of the bed. We had made a change in the house, and the first snow we had the house leaked in a little of the melting snow: I saw the danger but could do nothing at that time. Still we had a third of a crop. The third winter we had our house in good order, and we made a new bed, planted it with American made spawn, and all went on nicely till the Mushrooms came up, and here my hopes were blasted—instead of Mushrooms we had a great crop of Fungi, and that a deadly poison.

[*Rhind*, in his vegetable kingdom in plate 3, page 197, here gives us a list of 27 varieties of Fungi and Mushrooms. The one I had last winter, by *Rhind's* description, was *Agaricus virasus*, the most poisonous of all the tribe, he says.]

Now I am lead to believe the spawn I had last winter was impregnated with the *debris* of Corn, instead of Oats. How often will you see a substance about the ear or tassel of Corn, that looks very like a Fungi, and I believe from the smell of it, it contains poison—perhaps deadly. I believe we are indebted to the Oats, for our Mushrooms; I think when the debris is deprived of the light, air and moisture which would bring a yield of itself, say thirty fold, it is turned round by man's wisdom and can be made to yield forth fifty fold of this elegant vegetable, commonly called Mushroom. For myself I like to be gathering a nice dish of Mushrooms of my own raising; and I am sure the most of people are very fond of them at the table. Often I have wondered that there was not more of them growing in the United States; but we are progressing in Horticulture, and in a few years we will see more of them growing. Mr. Editor, I would like to see an article from your pen, I am sure it would do good to a great many, and promote the growth of this great vegetable. In *Rhind's* History of the Vegetable Kingdom, page 196, he describes the *Amanita Muscaria* or fly *Amanita*, plate 3, fig. 1, he says this splendid species is a native of Britain and very abundant in Scotland. It has a large cap sometimes six inches in diameter of a brilliant pink or crimson color, beset with angular warts and growing on a tall well proportioned stalk, it is very conspicuous even at a distance. In shaded recesses of its native woods, in the highlands of Scotland, says Dr. Greville, it is impossible not to admire it as seen in long perspective between the trunks of

the straight Fir trees, and should a sunbeam penetrate through the dark and dense foliage, and rest on its vivid surface an effect is produced by this chief of a humble race, which might lower the pride of many a patrician vegetable. This Mushroom is used by the inhabitants of the north-eastern parts of Asia, in the same manner as ardent spirits or wine to promote intoxication; it is the favorite drug *mancho-mare* of the Russians, Kamchadales and Korianans, who use it to promote intoxication. These fungi are collected in the hottest months and hung up by a string in the air to dry; some dry of themselves on the ground and are said to be far more narcotic than those artificially preserved. Small deep colored specimens thickly covered with warts are also said to be more powerful than those which attain to a larger size, and are of a paler color. The usual mode of taking this fungus is to roll it up like a bolus and swallow it without chewing, which the Kamchadales say would disorder the stomach. It is sometimes eaten fresh, in soups, sauces and there loses much of its intoxicating property; when steeped in the juice of the berries of *Vaccinium uliginosum* its effects are the same as those of strong wine. One large or two small fungi is a common dose to produce a pleasant intoxication for a whole day, particularly if water be drank after it, which augments the narcotic excitement; the desired effect comes on one or two hours after taking the Fungus; giddiness and drunkenness results from the Fungus in the same manner as from wine or spirits. Cheerful emotions of the mind are first produced, involuntary words and actions follow, and sometimes an entire loss of consciousness; it renders some persons remarkable active, and proves highly stimulant to muscular exertion; with too large a dose, violent spasmodic effects are produced; so very exciting to the nervous system in some individuals is this Fungus, that the effects are often very ludicrous. If a person under its influence wishes to step over a straw or small stick, they take a stride or a jump sufficient to clear the trunk of a tree; a talkative person cannot keep secrets or silence, and one fond of music is perpetually singing,—this is *Rhind's* description of this wonderful Fungus.

John Abercrombie, in his pocket journal, thus describes the spawn. The peculiar delicate nature of the spawn requires great precaution in the early state of the Mushroom bed to prevent its having too great a heat, which would prove its destruction, and likewise keep it from wet and cold; and in five or six weeks after spawning the bed, if it works kindly, it will begin to produce Mushrooms, and if kept in good order, dry and warm, it will continue several months in production.

SPRING BUDDING.

BY LOUIS JACK, M. D.

Read before Pa. Hort. Society, Sept. 4th, 1866.

I desire to call the attention of the Society to a method of Spring budding, which I performed upon the large branches of some old Pear trees during the Spring of this year. A method which has, I think some advantage over those in common use.

It is often found that one has an old and vigorous looking Pear or Apple, which has become covered with unproductive spurs, and is a good subject for renewal, by cutting back, or by grafting. The usual plan is to remove many of the larger limbs, expecting new growths to spring out by the development of accidental buds, from which some are selected to form the future tree; the difficulty of, and the objection to this is, that the disposition to the development of buds is confined principally to the terminations of the limbs, in many cases leaving the lower parts bare. Where grafting is done, only the terminal part of the large limbs can be operated upon, so that a similar method of cutting back is necessary to get new wood on which to graft nearer the stem; this occasions the delay of one season's waiting.

I have pleasure in mentioning a plan, which I believe will in either case accomplish the result aimed at, with certainty, with regularity and in a single season secure the foundation of a symmetrical tree. The process I have called spring budding; but to prevent confusion of terms will name the "bud" an insertion.

We will suppose a long and exhausted Pear limb, comparatively denuded of branches; such an one we so commonly see. The first preparation will be to remove one-third of the length; and if it is desired to change the variety, two grafts will be placed in the cut end, then at several places along the course of both sides the dead outer bark should be scraped away; a triangular incision is now made at the points selected, extending down to the wood; it should be of considerable size, varying with the diameter of the limb and be finished by removing the bark included in the incision. The object of the removal of the piece of bark is to enable the insertion to be introduced beneath the thick bark, and to check the flow of sap as the part for the benefit of the bud. In branches of four (4) inches diameter the triangle should be one and one-half (1½) inches at the base.

The preparation of the insertion is made, by taking a scion cut from well matured wood of the previous year's growth, which need not be removed more than a few days before wanted; it must have

been kept cool and fresh, and the buds be plump but unstarted. The knife should be entered at the side opposite the selected bud, about one-half inch (½) above, and so directed as to split the scion in the middle for the greater part, covering one inch or more below the bud, and on the same side with it; after the removal of a very small part of the outer bark at each side of the insertion it will be ready for introduction.

A slit is now made from the base of the triangular cut downwards, to enable the bark to be slightly raised; the insertion is next pressed down so as to bring the bud exactly to the base of the triangle. Grafting wax is now laid upon the incision last made, and all the cut parts completely covered by the wax; when a piece of wood the size of an ordinary label is laid over the last cut and bound down tightly upon it by a wrapping of twine, securely tied, so as to counteract the disposition of the bark to curl away from the insertion, which tendency is universal. Indeed, so important is this tying, that success cannot be expected if it is omitted.

The advantages of the method above described are so manifest, that any attempt to mention them would be superfluous; each one accustomed to such processes will know when he can use these insertions with advantage.

This is accompanied by a piece of wood having an artificial bark of India-rubber, with the different stages of the preparation upon it, in illustration of the text.

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THE MOTION AND COMPOSITION OF THE SAP OF PLANTS, AND THE EFFECTS OF HEAT AND COLD THEREUPON.

BY WALTER ELDER, PHILADELPHIA.

It is the composition of the sap that makes its motion rapid and slow, and which causes quick and tardy growth in the various species of plants at different degrees of heat and cold: *Elementary Philosophy* teaches four degrees, or effects of heat. 1st, *Expansion*; 2d, *Liquefaction*; 3d, *Combustion*; and 4th, *Incandescence*; and 3 degrees of effects of cold,—1st, *Contraction*, 2d, *Solidification*, and 3d *Expansion*: let us take a deciduous tree for explanation; when it is leafless in winter, it looks lifeless; but when the warmth of spring follows the cold of winter, we see the first effect of heat in the swelling buds, that is expansion; and if we prune the tree then, we see the second effects of heat—liquefaction, by the sap running out at the wounds; thus expansion and liquefaction work together, and increase with the increase of heat so far as the amount of sap and its composition will admit; and blooms, leaves and

shoots are put forth; but all parts of the tree are not simultaneously affected with heat; for the reason, that the stem is more dense than the branches, and the roots are deep in the cold ground; each part is affected in its turn according to its easiness of penetration; when the whole tree is awakened from its dormancy, the roots throw up a fresh supply of sap to all parts, and every vein is filled with vital essence to sustain the tree during the drought of Summer, and to protect it from injury by sudden contraction and expansion, by sudden changes of temperature in the weather; the injury is called "Fire Blight." When the cold of Autumn follows the heat of Summer, we see the first effect of cold contraction, in the change of the color of the leaves: their veins get contracted, and the sap ceases to flow through them, and they drop off; the twigs are next affected, and the branches, stem and roots follow in their turns—If we prune the tree then, we see the second effect of cold—solidification; the sap is solid and stationary and fixed; and the wounds are dry, but the roots continue to throw up vital essence to all parts of the tree long after the leaves fall off, and enable it to withstand the cold of winter; but when the cold gets very intense, it produces expansion, and bursts the sap veins, and sometimes rends the stem of the tree open. In the following spring it puts forth blooms, leaves and young shoots, and then shows decay—it is dead. Trees, vines, shrubbery, all are often so affected, that is called "the frozen sap blight." [Let me now ask the wealthy patrons of Horticulture, have you not too often charged these desolations upon the incapacity of your gardeners, and the dishonesty of your nurserymen?" but never reproached "him who rideth on the winds, and says to the storm be calm and the waves be still, and they obeyed him." How can gardeners prevent such destruction? and how can nurserymen know that a plant is dead while it has all the appearance of vitality.] All plants are not equally affected with the same degrees of heat and cold; it requires much heat to set the sap of the *Catalpa* tree in motion, and but little cold stops it; but little heat sets the sap of the *Willow* in motion; and it takes much cold to set it to rest, and its foliage lasts eight months in the year; whereas, the leaves of *Catalpa* last only five months. Evergreens are not easily affected with heat and cold, and they retain their foliage until the new foliage pushes it off in Spring. Some plants require the shelter and artificial heat of glass-houses, while others thrive on mountain tops in the coldest regions.

Early blooming Bulbous plants do all their work in cold, and rest in hot weather; the late blooming kinds sleep in cold and do all their growth in hot weather; the same is the case with herbaceous plants: *Dicentra*, *Peonia*, early *Phlox*, *Larkspur*, &c., grow quickly up in Spring and bloom early, and stand still in the heat of Summer; *Indian Corn*, *Okra*, *Sunflower*, &c., do all their work in the heat of Summer, and die off with the cold of Autumn, and so it is with annuals: *Candytuft*, *Collinsia*, *Groves-love*, &c., grow quick up and bloom in the cool of Spring, and die off in hot weather. Whereas, *Cockscomb*, *Globe Amaranthus*, *Sensitive plant*, &c., grow only in heat; among ligneous plants, some bloom early, others bloom late. *Forstythia* blooms in March; *Kolreuteria* blooms in July. The blooms of both are of the same color; *Magnolia conspicua* blooms in March, and *Magnolia glauca* blooms in June; they are both of the same genus, and their blooms are similar in form and color. The differences of all these lie in the various composition of their saps.

The young gardeners who read this article, may think it strange, that *expansion* is the first and last degree of heat, and the last and greatest of cold; but they can see it on ice, when after a winter's night of intense cold there are rises on the ice as if water had been poured upon it, and froze as it fell; that is expansion produced by the severe cold. We have seen stone cisterns iron bound above ground, rent asunder by the intense cold of a winter's night.

THE FRENCH EXHIBITION.

BY E. FERRAND. DETROIT, MICHIGAN.

I am in possession of the general programme of the great international exhibition of Horticulture, to be held in Paris, in conjunction with the great exhibition, and extract the following parts of that programme for the benefit of the *Monthly*.

Art. 1st. A permanent and international exposition of Horticulture will be held with the universal exhibition on the 1st of April, 1867, lasting until the 31st of October.

A garden of 50,000 square metres, being part of the grounds of the general export on the Champ de Mars is specially assigned to that object; ample room will be provided for the valuable productions according to their nature, in stove houses, green houses, undertents, in galleries, and in the open air.

Art. 2d. There will be opened successively, fourteen international Horticultural courses.

Art. 4th. The fourteen courses are made up as follows:

1st course opening, April 1st, 1867; Camelia, Conifers; hardy ligneous plants, Ericaceæ, fruits and eatable vegetables from forced culture.

2d course opening, April 15; *Rhododend. arboreum*, forced fruits, hyacinths and green house plants.

3d course open May 1st; Orchidea, *Azalea indica*, tulips, ornamental plants, and green house plants.

4th course open May 15; *Azalea indica et pontica*, Rhododenron, Orchidea and hardy ornamental plants.

5th course open June 1st; Orchidea, Roses, Pelargonium, ornamental plants, vegetables.

6th course open June 15th; Pelargonium, Roses, Orchidea, fruits of the season.

7th course open July 1st; Palms, stove-house plants, annuals, fruits of the season.

8th course open July 15; Aroideæ, new plants, annuals, fruits of the season.

9th course open August 1st; colored leaved plants, Gladiolus, Fuchsia, fruits of the season.

10th course open August 15th; ornamental plants, annuals, ferns, fruits of the season.

11th course open September 1st; eatable vegetables, ornamental plants, Dahlia, fruits of the season.

12th course open September 15th; Dahlia, sundry plants and fruits of the sea-on.

13th course open October 1st; general course of fruits, sundry plants.

14th course open October 15th; general course of fruit trees formed by reasoned pruning and trimming, each course thus lasting 15 days.

A general and detaile programme of each of the above courses will be published end of July, 1866.

The repetition of the prizes awarded to each course in 4 categories: *1st prizes*, *2d prizes*, *3d prizes* and *diplomas*, will be awarded by a jury, composed of the notabilities of horticulture, both French and foreign, selected by the special horticultural section of the international jury of award, for each course and special jury.

The prizes to be awarded to the *living productions of horticulture*, which make the special object of this programme (to the exclusion of the objects of art, implements, &c., relating to horticulture,) are the following:

1st. Grand prizes and allocations in money, a total sum of two hundred and fifty thousand francs,

2d. One hundred gold medals, each of the value of a thousand francs.

3d. One thousand silver medals.

4th. Three thousand brass medals.

5th. Five thousand diplomas, (honorable mentions,) all the medals of the same module.

It is very likely that American Horticulture has not yet reached a point that can enable its adepts to compete with their European rivals in any section of the above programme; therefore, it is our lot to remain mere spectators; but even as such, we are much interested in a careful examination of the Horticultural measures that will find their way to that universal meeting. Most of the finest collections of England, Belgium and Germany will be at the rendezvous with those of France. For many reasons material, geographical, scientific and other, Paris is a centre of attraction, which will draw to itself treasures that would not follow the call of other cities; this makes an opportunity of admiring such a magnificent display that may not offer for a long time after. But, notwithstanding that each and every part of that grand universal fair is alone worth coming from the opposite side of the Globe to see—there is one part of the Agricultural programme, which is above all appreciation to Americans—that is the part relating to fruits and fruit trees. Above all, the 13th and 14th course—then will be the fruits, and by them the trees as they are *made to produce the fruits*. Perhaps then, the intelligent American gardener—and as such, I am inclined to embrace every one who has a liking for fruit culture, almost everybody,) the American gardener will throw aside his own notions on fruit culture, and adopt those new rules which would be so well applicable to his own climate, and are so far the exclusive privilege of the French fruit culturist.

PEAR GROWING AT POTTSVILLE, PA.

BY CHARLES CRUCKNELL.

I sent you on the 8th inst., a box of Pears, intending to write you more fully about the prospects of fruit growing in this region at the first opportunity. Pears are a safe investment here. The trees bear regular and uniform crops of clean handsome fruit without much trouble.

I did not send you the largest fruit, as I take it for granted that fruit can be grown to any size almost, by paying proper attention to pruning out in the first stages of growth. This principle is pretty well understood now-a-days by cultivators. The White Doyenne seems to thrive well here; the specimens sent, were grown on quince about five years planted. Howell is a beautiful Pear, the tree

healthy and thrifty, an early and regular bearer, and the fruit being of uniform size throughout. The Seckels are small, owing to the tree being allowed to overbear. Buffum is very fine. The tree is well adapted for small gardens, having a compact and upright habit of growth. The Bartletts were very fine; four of the largest weighed twenty-five and one-half (25½) ounces. I did not send you any of this variety, as I know you raise some very fine specimens in your vicinity. My largest Bartletts last year weighed six ounces, this year six and a half. The trees have been planted four or five years, and are on Pear stock. Beurre Giffard is a very handsome and distinct fruit, but rots at the core if not pulled from the tree early; ripens early in August. Rotiezzer, Ott's seedling and Rousellett Stuttgardt all bore full crops, and the individual fruit was larger than I have seen it elsewhere. The best specimens of the Ott were larger than the Seckels sent you. Duchesse d'Angouleme on Pear stock is very fine, and has a full crop of fruit. There must be something radically wrong in the system of cultivation, or in the trees themselves when out of several *thousands* of Duchesse trees growing on your correspondent's grounds, none of them ever bear a full crop of fruits; with me it has ever been one of the most regular bearers, paying well for the ground it occupies, more so, than any other Pear tree. I have never minutely examined the blossoms, but I think it possible to show without the aid of microscope, or powerful lenses that the blossoms of this variety are perfect in all their parts. Be that as it may, the subject is well worth inquiring into. Beurre Boussock, B. Clairgeau, B. d'Anjou, B. Superfine, B. Diel. Catillac Pound, Glout Morceau and Belle Lucrative are all full of fruit; the last named, I sent you specimens of, taken from a standard tree; the branches of which are literally lined with fruit. Beurre d'Amanlis; the fruit is coarse grained, and rots at the core so badly, as to make it difficult to obtain a sound specimen.

Of Plums, the only tree I see with a full crop of fruit is the Lombard. Grapes seem to do well here. No mildew, and very little rot. Our first Concord ripened second of September. The Diana, Delaware, and Clinton will be ripe in a few days.

STRAWBERRIES.

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

Special Varieties for the Amateur and the Family Garden, many of which are suitable also for Field Culture as Market Varieties.

—As a rule the Pine and Chili *varieties must be grown in hills* or in rows.

Admiral Dundas, (Chili) H, largest of all, conical or compressed, bright scarlet, small crop, a remarkable berry.

Ariadne, H, large, rounded, dark scarlet, fine flavor, productive.

Bersitta, H, very large rounded, bright scarlet, good flavor, very vigorous, must be grown in hills.

Beatrice, H, large, obovate, deep scarlet, sweet, juicy, high flavor, vigorous.

Bonte de St. Julien, (Pine) H, medium, round, crimson, sweet, juicy, rich flavor, plant hardy, very productive, suitable for field culture.

Delices du Palais, (Pine) H, round, glossy crimson, sweet, highly perfumed, delicious.

Duke of Cambridge, (Pine) H, large conical, bright scarlet, splendid, flesh rosy white, sweet, high flavor.

Duchesse de Beaumont, (Pine) H, large, glossy red, flesh rosy, sweet, perfumed.

Durand's Seedling, H, claims to possess valuable qualities.

Emily (Huntsman's), P, a hybrid variety, large, conical, compressed, sweet, juicy, high flavor, beautiful.

Emily (Myatt), (Hybrid Chili) H, monstrous, deep rosy; flesh white, sweet, excellent flavor, estimable.

Emma, (Pine) H, large, obovate, crimson, splendid; flesh rosy tinge, delicate, sweet, perfumed; hardy, vigorous.

Empress Eugenie, (Pine) H, monstrous, deep red, ovate or coxcomb; flesh red, very sweet, exquisitely perfumed.

Eureka, (Hybrid) P, large, conical, light scarlet, beautiful, sweet, juicy, highest flavor, firm, productive.

Filbert Pine, H, large, oblong cone, scarlet; flesh white, firm, exquisite, the climax in flavor, never surpassed.

Fontenelle, P, very large, rounded, light scarlet, juicy, fine flavor, productive.

Frogmore Late Pine, H, monstrous, largest of Pines, often coxcomb, brilliant crimson, very beautiful, sweet, extra juicy, superior flavor, perfumed; remarkable for size of foliage, flowers and fruit.

Golden Queen, (Pine) H, allied to Victoria, good flavor, and moderate bearer.

Great Eastern, large, conical, firm, good flavor, vigorous, for hill culture only.

Hovey's Pine, H, very large, long cone, deep scarlet, fine flavor.

Jung Bahuloor, (Pine) H, large, obovate, crimson; flesh rosy, sweet, delicious, vigorous, hardy, much superior to Jucunda in flavor.

La Constante, (Pine) H, large, conical, bright crimson; flesh rosy, sweet, exquisite; small crop, burns considerably. It is suited only to the amateur.

Ladies' Pine, P, small, round, pale scarlet, very sweet, exquisite; plant very hardy, moderate crop.

Ladies' Favorite, H, seedling from the preceding, light scarlet, double the size of parent, white flesh, most exquisite flavor; vigorous and hardy, productive.

Ladies' Aromatic, P, same parentage as the preceding, and of same exquisite sweetness and flavor, double the size of parent; plant vigorous, hardy, productive. These two last are the greatest acquisitions to the amateur.

La Sultane, (Pine) H, large, conical, brilliant scarlet, flesh white, firm, sweet, highly perfumed.

Large Climax, P, conical, bright scarlet, splendid, sweet, excellent flavor, vigorous, productive.

Lemig's White or White Pine-apple, (Pine) H, very large, round, white with pink tinge; flesh white, buttery, high flavor; plant vigorous, and very hardy, must be grown in hills. The best of the whites.

Lucinda perfecta, P, medium, rounded, scarlet; flesh white, juicy, good flavor; vigorous.

Lucas, (Pine) H, monstrous, obtuse cone, bright crimson, flesh rosy white, sweet, juicy, very rich, delicious flavor, vigorous.

Marguerite, (Pine) H, very large, oblong, glossy red; flesh orange, sweet, delicious flavor.

Metcalf's Early Seedling, a Michigan variety, rather early, large, regular form, bright red, acidulate, pleasant flavor, vigorous.

Mead's Seedling, (Pine) P, large, irregular cone, light scarlet, sweet, high flavor; vigorous, moderate crop.

Napoleon III, (Chili) H, monstrous, most splendid appearance, bright, rosy; flesh white, sweet, very high flavor, a remarkable variety; foliage deep glossy green; plant very vigorous. An ignoramus has confused this with the Austin, whereas no two varieties are more distinct.

Ophelia, H, large, rounded, depressed, sweet, pleasant flavor, firm, a seedling from scarlet magnate, suitable for market.

Perry's Seedling, H, claimed to possess valuable qualities by the grower.

Ripaucam, claimed to possess valuable properties, requires to be further tested. Prof. Huntsman,

who is referred to for evidence, says he has no knowledge of it.

Rosina, H, large, round, light scarlet, sweet, juicy, excellent, valuable for market.

Scarlet Prize, P, very large, rounded, oblate, bright scarlet, firm, sweet, fine flavor; plant vigorous, very hardy, productive, bears long carriage, estimable for market.

Scarlet Excelsior, P, very large, deep scarlet, sweet, high flavored, vigorous, very productive.

Scarlet Rock, (Pine) H, large, round, very sweet, delicious; plant vigorous, very hardy in winter, never burns.

Sir Charles Napier, (Pine) H, large, regular cone, vermilion; flesh white, sweet, juicy excellent.

Suprema, P, early, large, obtuse cone, light scarlet, sprightly flavor; vigorous, very productive, suitable for market.

Terpsicore, H, early, large, conical, bright scarlet, beautiful, firm, sweet, good flavor; vigorous suitable for market.

Valencia, H, early, large, conical, deep scarlet, excellent flavor, vigorous, productive.

PROMISCUOUS VARIETIES FOR AMATEURS.

Hautbois, the finest varieties are Belle Bordelaise, Bijou de Fraises, Monstrous Hautbois, and Royal Hautbois, and these are distinguished by a high musk flavor for which they are greatly esteemed by European amateurs, but are scarcely known in any American collections.

European Wood Strawberries, there are four varieties: common red and white Montreuil crimson, and the green Pine-apple, which latter has a delicious musky aromatic flavor, distinct from all others.

Alpine Monthly, there are eight varieties of red and white with runners, and the red and white bush varieties.

Ornamental Varieties, comprising the double flowering, very interesting and yet rare; and the Indica or Yellow Flowered, with bright crimson berries not edible.

NEW VARIETIES RECENTLY INTRODUCED FROM BELGIUM, FRANCE AND ENGLAND.

Bijou, Pine,	Leonce de Lambertye,
Blanche d'Orleans Alpine, Pine,	
Boule d'or Pine,	La Grange, Alpine,
Carniola Magna, Pine,	Modele, Pine,
Chili Orange,	Premier, Pine,
Doctor Nicaijse, Pine,	Rosy White, Chili,
Double Flowering,	Royal Hautbois,
Elton Improved, Chili,	Sabreur, Pine,

Gweniver, Pine,	Savoiseuse, Pine,
Globe, Pine,	Sir Joseph Paxton, Pine,
Hero, Pine,	Souvenir de Kieff, Pine,
Hative Fontenay,	Triomphe de Hollande,
Janus or Twin, Alpine,	Alpine,
Jouna, Chili,	Vineuse de Champagne,
La Robuste, Pine,	Vineuse de Nantes, Pine,
La Rustique, Pine,	Virginie, Pine,

THE MODES AND TIME OF PRUNING.

BY CHRONICLER.

We were first learned to cut off branches close to the stems; pare the wounds smooth, and coat them over with coal-tar, grafting-wax, horse-droppings mixed with clay, and cattle manure, and mould mixed; the close cutting was to prevent young shoots growing up behind the cuts, and the coating was to heal up the wounds sooner, all of which is true. But we never could prevent a portion of the wood drying up at the wounds; that dead part was in the stems, and lessened their vitality. There is a deal of nicety in that mode; and it is an amusement to amateurs and gardeners who operate upon a small scale; but the question arises, will it count well in the rule of *profit and loss* upon a large scale? Nurserymen do not practice it with their thousands of trees; gardeners do not practice it upon small fruits, shrubbery and hedges; and why it must be practiced upon trees we cannot tell.

The other mode, is to leave butts as long as they are broad; and the wounds left bare; the waxed dries up that much, but no more; and it is all in the butts; the vitality of the stems remain unimpaired; within the past fifteen years, this mode was largely exhibited and lectured upon in the Academy of Science in Paris; a very scientific American gentlemen attended those exhibitions and lectures; and when he came home, he tried it upon the fruit trees in his own garden in Philadelphia: we saw the operations and watched their results, which were highly satisfactory; and we became a convert to the mode, and have practiced it upon an extensive scale for twelve years back with perfect success. One man can do as much pruning in this, as three men could in the old mode. We are told that, if "*stumps are left, they communicate their own decay to the hearts of the trees, and Oaks and Elms with centuries of vitality, are laid prostrate in a few years,*" if that is so, dead boughs will do the same; nature does all her own pruning in the forests of America by dead boughs, yet none of the trees die, when some of their boughs die; they all grow larger and stronger by that. Hedges are sometimes

cut off near to the ground, and their wounds left uncoated, and they grow up more bushy than before; that is, if the soil is good and weeds are kept away from the roots; many of the forest trees are cut off near to the ground, and the butt put out new shoots, which grow rapidly, and soon cover the old stumps entirely. Root pruners do not cut off close to the stems, but a distance from them; and at times leave the wounds bare for months, yet they do not kill the trees. Mr. Rivers, the leading orchard-house man of London, says in pruning fruit trees growing in flower pots, "cut immediately under a bud, and the vitality of the next bud left, will remain unimpaired, and it will be the strongest," so he appears to favor this latter mode, that the wood at the wounds dry up only as much as the diameter of the shoot or bough cut off. Now for the time to prune; if boughs are cut off in late Autumn and early winter, the wood at the wounds dries up before vegetation begins in Spring, and the sap cannot get out; but goes to give greater vitality to other parts of the trees, and the sap that would have matured the wood in those boughs through the winter went into other parts. If boughs are cut off in late winter and early spring, the sap runs out profusely and weakens the trees by the loss thereof; but twigs and the ends of boughs may be cut off any time; and also, suckers at the roots; so pruning may be performed at all times; but there is a great difference as to what should be cut at different times; the old metaphorical phrase: "The best time to prune, is when the tools are sharp," means that the sharp tools make clean cuts which soon heal up; but nobody would prune off large boughs of Apple trees while the fruit is ripening upon them. It may be well to coat all wounds with *coal-tar from gas works*; but it would be too expensive to apply it to shrubbery, nursery stock and clipped Hedges.

[This is an interesting question, and has been much discussed. Like many disputed questions, there is much truth in all sides of the argument, and in such cases which side to follow depends on circumstances. In young vigorous growing trees, wounds soon heal over, and no decay follows, but large wounds from pruning in mature trees undoubtedly encourages decay.—ED.]

The Gardener's Monthly.

PHILADELPHIA, OCTOBER, 1866.

✉ 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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UNFRUITFUL FLOWERING FRUIT TREES.

A very observing correspondent, Dr. J. S. Houghton, recently sent us a paper on the unfruitfulness of blossoming Pear trees, which has attracted wide spread attention. The subject has since been discussed in intelligent pomological circles, and in the public-prints, but with no satisfactory conclusion. Numerous theories, many of them very plausible, have been started; but objections, quite as plausible, have been urged against them.

Why should a Pear tree, in perfect health, often produce thousands of perfect flowers, so far as we can see, without perhaps one fruit resulting, and yet with no external circumstances that we can understand operating to the injury of the blossom?

Some cases are no doubt the result of weakness from external causes. In a newly transplanted tree for instance, which may open a large number of blossom buds, very few will "set," as the first swelling of the fertilized fruit is technically termed. But this is owing to the sheer inability of the mutilated roots to furnish moisture enough for so many channels, and is not at all within the case we are contemplating.

One thing however seems to be well ascertained, which is that moderately vigorous trees set more flower buds proportionately than extra strong growing trees of the same variety. It is well known that extra vigor is opposed to the production of *fruit buds*. This is a proposition it was one of the first missions of the *Gardener's Monthly* to bring prominently before American Horticulturists, and it is now universally received as philosophy, and practically acted on; but it has not hitherto been recognized, that the great vigor which obstructs the flower producing power, may also take away the power of setting, after the flower is formed.

We may also here remind our readers how earnestly we have combatted the "high cultural" notions we found to prevail at the commencement of our Editorial career,—taking the ground that trees

of a moderate growth bore more certain and regular crops, and were healthier than others,—and that therefore orchards under certain conditions in grass were to be preferred to those which, for the purpose of highly feeding the trees, are kept in root or other crops.

We have little doubt that this extra vigor of growth will be found to be one great cause of the unfruitful blossoms referred to.

One correspondent in this month's number shows how root pruning effectually rendered a Swan's-egg Pear fruitful. It might seem that this note is hardly to the point, presented by Dr. Houghton, unless it were shown that the tree previously *flowered* well, and yet did not bear; but as nearly every instance of methodical and systematic root pruning has shown that trees are always and uniformly as fruitful as can be desired, it does seem to answer the case pretty well.

Wherever root pruning is practiced regularly trees always bear.

One English fruit grower, whose "bread and butter" depends on his success with his fruit trees, practices root pruning to an extent that will surprise our cultivators who value small

"Trophies won with ease"

to immense victories that take a little labor to win. We refer to George Lee of Cliveden.

He has two thousand trees of Apples, Pears, Cherries and Plums, which he lifts and removes every year—root pruning enough in all conscience. He has done this for many years,—and he continues to do it because he finds it pays him handsomely in a profusion of magnificent fruit. He commences with one or two year old trees. The first time or two of removal, he says they have their growth checked, but subsequent removals do not seem to put them back any. In a recent paper read before the Royal Horticultural Society, and which is printed in the last April number of their transactions, he gives a detailed list of many varieties that have been under this treatment from 10 to 15 years, with their heights, "spread" and diameter of their trunks. Of Pears we notice—Doyenne d'Ete, 10 years planted, nineteen feet high, and with a stem eighteen inches in circumference, Beurre Diel, Boussock, Urbaniste, and many other well known kinds, exhibit about the same proportions—Apples about 12 years planted are about 12 to 13 feet high, with a "spread" of 6 to 7 feet, and stems about 16 inches in circumference, Sturmer Pippin, Keswick Codlin, Gravenstien, and other popular varieties are the kinds he grows. The fruit trees he describes are all on what we call standard stocks,

though the trees are grown as Pyramids—but he says the dwarf trees do just as well, except Cherries grafted on Mahaleb stocks, which he finds generally are slow to accept the circumstances that the others do, and suffer accordingly. Though with the same treatment for dwarf and standards he finds that dwarfs bear earlier, and by so much, hasten the profits of the fruit garden.

So long back as 1852, the writer of this exposed the absurdity of moving large trees with "large balls," by which half of the active roots had to be left in the soil, instead of getting all the roots and leaving the soil; one of which courses has to be done. ("Hand Book of Ornamental Trees.") And we have repeatedly referred to the large trees successfully and frequently removed in this way during the last few years in the vicinity of Germantown. For a tree 25 or 30 feet high, the way is to dig a circle about 18 inches wide around and about 10 or 12 feet from the stem of the tree. Then dig down and throw the soil out at least 2 feet deep with a spade; a digging fork only is afterwards used, and the tree undermined, and the soil all carefully taken out from among the roots by gently shaking them with the fork, and thus letting the earth fall into the undermine. We find that Mr. Lee adopts precisely the same plan in his removals. He indulges in a pleasant ridicule of those who look for "tons of dirt" with the roots, and shows that by the fork and no soil and all the roots plan, he has successfully removed large Pear trees, that had never before been removed, that were *twenty-five years old, and three feet in circumference.*

He gives credit to Mr. Rivers for being the first in England to recommend the annual removal of dwarf trees, but he remarks that Mr. Rivers' system is one intended mainly, for amusement, while he has developed it into one for abundant profit.

Is it not curious to mark how the world progresses? The wise man who fifty years ago,

"Never saw a tree, or an oft removed family,
That ever did so well as those that settled be,"

would open his eyes with wonder now, to learn that the oft removed tree was the best.

But they did not know in those days, that it was only the end of fibres that draw up nourishment to the plant,—did not know that by cutting back a little, one root with one point was made to throw out perhaps 50 roots with 50 points, multiplying fifty fold the acquisitive powers of the tree,—did not know that it was

"Better rub than rust,"

whether in trees or families; and that to stay rusting in one hole, eating out all that was to be eaten,

except the little that might by chance be given to it in the shape of a niggardly top-dressing; better rub a little the roots in getting it to a new soil—did not know the enormously destructive power of fungi to injure healthy roots; that dead and dying roots breed fungi; that the spores of fungi once produced, enter the sap of trees, ascend to the leaves and develop into other forms that breed blights, spots, cracks and blisters innumerable; and without end—did not know, in short, a tithe of what we now know. But they had one good point—they practiced pretty much what they did know while we read and forget. There is little in what we have given, that has not been known, and from time to time recorded in our journal—but presented in another shape we hope to enlist our fruit growers attention to the subject now—not only as affording a probable solution of the question, why flowering Pear trees prove unfruitful, but as opening up hints for a very profitable system of fruit culture.

COLD GRAPERIES.

All of our readers who have followed for a number of years the monthly reports of the Pennsylvania Horticultural Society, will remember that Grapes have often been exhibited there in bunches of nine pounds each,—and on one occasion over nine pounds.

These Black Hamburg Grapes came from the graperies of David S. Brown, Esq., at Morgan's Corner, a small station on the Pennsylvania Central Railroad.

While passing through the Grape houses of this gentleman recently, admiring the amazing health and productiveness of these vines; the extraordinary size and color of berry, and the weight and beauty of the bunches; and yet the care and simplicity with which for nearly a quarter of a century all this has been annually accomplished we could not help feeling a silent sorrow, that so few should know how cheaply and how easily they might enjoy one of the greatest and most refined luxuries of modern times.

If any of our friends want to see how we look when we are angry, let them walk into our "sanctum" when some unfortunate citizen, who has suddenly grown rich, and wants to "do something," is bothering us for advice how to make an aerated, divided, and double distilled Grape border,—where he can get cheapest and best bones, hair, lime and plaster,—carcasses of hogs, horses, swine and asses,—the concentrated essence of a score of fertilizers,—and the great genius of the book-making fraternity only knows what. Where the best hot water boilers for cold graperies can be had,—in reality,

how he can expend the greatest amount of money on the smallest proportionate crop of Grapes. We see expensive houses every where; and generally the richer the man, and the more care bestowed on the Grape houses and Grape borders, the more indifferent is the crop. If this injured no one but those who had such places, it would not matter much; but hundreds are deterred from having vineries, simply because they have seen so much spent for so little, and fear their success will be no better than their neighbors'.

The vineries of Mr. Brown meet our ideas of what cold graperies should be, and which we have often recommended in our magazine.

We would select a spot with an eastern exposure in preference to any other; make no inside border, but proceed at once to build the house—a front wall of stone or brick, two or three feet high, run along to the length the houses is desired; near the top of the wall make holes about four inches diameter by building in round pieces of wood to be drawn out before the mortar dries. These holes may be about eight or ten feet apart, and are for the introduction of the stems of the Grape vines; the roots being entirely outside in the border—a lean-to house being preferred, a back wall may be of wood, stone or brick, whichever may be preferred. It is, however, poor policy to build the house of too perishable materials. Flimsy houses are not cheap houses, they are dear enough in the long run. The height of the back wall will be according to the width of the house, high enough for the glass to be of a slope sufficient to carry down the moisture well without dripping,—for a cold vinery, the flatter the better.

The border should be formed on the surface of the old soil, or at most, not more than a foot of the old soil need be taken out. By filling up to the holes in the wall, and a few inches higher, a deep sloping border is formed, that will be always dry and warm.

To make this border, we would get about one-fourth of rotten stable manure, cow dung preferred; one-fourth of coarse sharp road sand; two-fourths of turfy sod from a pasture all mixed up together.

Mr. Brown's vines are very much after this system. There is no particular art or system followed in their pruning. They seem to defy the power of any ignoramus to "spoil" them by any course of treatment. The old canes, nearly as thick as one's wrist, are annually cut in to the "invisible eye," and when they grow out, they seem to go out any way as they will without much pinching-in, or stop-

ping back of shoots. Yet nothing could be healthier or look better.

As to varieties, he who wants good Grapes and plenty of them, need try only with Black Hamburg Frontignacs, Muscats and Chasselas, and such well known things. Except for some special and particular purposes, foreign to the general view, we are now taking of the subject, there is nothing absolutely essential in any of the newer varieties to make them particularly desirable to the novice.

OUR POLITICAL PLATFORM.

In these days of political excitement, when even our hearths and pulpits north and south are occupied by politics, it may be expected that even a Horticultural journal should give its views on the "situation."

In the first place we advocate universal suffrage. Every man of every race, with principles as numerous as the sands of the sea,—when in the possession of two dollars per annum, has the undoubted right to vote for the *Gardener's Monthly*. This is our platform, and having once taken our position, there is not power enough in the United States to drive us from it.

"Man in his garden, or in those paths which lead to his garden." This is our theme.

It does seem as if Horticulture is the only basis on which in these days *all the world* can stand as a band of brothers, without any of its subjects leading to estrangements or outbreaks. Even agriculture is less favored, as intimately connected with the "labor question;" the proper "policy" must be discussed.

To carry out the political simile with which we started,—our campaign terminates on the 1st of January, when our subscribers must vote for their new volume. We submit that our *purely Horticultural* claims is a merit in these days which we think entitles our friends to work a little to extend our circulation and sphere of usefulness.

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.

THE LILY TRIBE—*J. D. K., Washington, D. C.*, send us the following interesting notes:—"Your August number gives a few hints about Lilies. The books and catalogues, Rand, Breck, Hovey, Viek,

Thorburn, &c., do not afford a clear idea of this beautiful class of garden plants. Can you give a general view, say next month? I have *L. lanceifolium* in variety. They grow like weeds, and bloom like glory. Ought they to be transplanted frequently? Are the 'monstrosum' varieties of special value? *L. candidum* is as good as it is common. Its varieties, *maculatum*, and the double, are good only for variety. *L. Auratum*—the government gardeners are waiting for it to cheapen, and private persons may do the same. How many blooms, has it, and how large? *L. Brownii* I planted out-doors, but it did not come up. Is it tender? *L. superbum* (our finest native) seems as it is offered by the dealers in imported bulbs. I have purchased three or four times, and all have failed, the root fibres being evidently dead. *L. Canadense*, *Philadelphicum*, and *Catesbaei* (natives) cannot be had even dead. *L. longiflorum* is beautiful, and ought to be as common as *candidum*. But *L. eximium*, *Japonicum*, *suaveolens*, and *takesima*, &c., all come up as *L. longiflorum*. *L. excelsum* (or *tezta-cum*) is distinct and good. *Tigrinum*, a fine old kind. *Aurantiacum*, Groom's hybrid, *bulbiferum*, *colchicum*, as they came up, differed very slightly: some confusion. Such new kinds as 'Lin-Kia,' 'Fen-kwam' 'Ki-Ka,' &c. ! what can you say of them?

"*L. giganteum*; I planted a young bulb out-doors a few years since. It came up, making two leaves, but did not appear the next year. It may have died in the heat of Summer, or starting too early in the Fall, been nipped by frost. It is worth another trial. What is its botanical place and characters.

"I tried Mr. Rand's plan of keeping gladiolus rootlets two years, and then planting,—no success. But I observe that where my blooming bulbs stood last year, there are now several young ones growing, as if they had taken care of themselves last winter. Will try this the coming winter.

"Would not a short article on lilies, with no facts that are not personally known to the writer, be acceptable to your unprofessional readers?"

[The Lily subject is an extensive and complicated one,—and it is so difficult to tell what is a variety, what a species, and what a synonym, that it would be quite a task to straighten out the subject properly. In the mean time we publish our correspondent's notes entire, as they are themselves a valuable contribution to Lily history.]

SOWING TREE SEEDS.—*B., Joliet, Illinois.*—It is best to sow all kinds of seed in the fall if they can

be had time enough for it; but it requires care. If sown too deep, the germs will rot before they come to the surface in Spring,—and if sown too near the surface, the freezings and thawings through winter, or exposure to light, or some other cause not well understood, often destroys the germs. Seed beds to be safe, ought to be covered a little where it can be done.

QUINCE CUTTINGS.—*R. J. S., Rochester, New York.*—These generally fail when put in the Spring; while they rarely fail set in the fall,—and the earlier in the fall the better. Throw some thick coarse litter over them to keep them from being thrown out by thawings in winter.

INSECT ON THE CHERRY.—Specimens sent us from Bunker Hill, appearing to be new, we sent them to Mr. Stauffer, and annex his kind reply:

"Yours, enclosing a Grub, taken from the small branch of the 'Empress Eugenie Cherry' by your correspondent Mr. J. Hetzel, of Bunker Hill, Illinois, which he states appear to have gone in where the limbs are cut off, and that they 'saw a limb as square off, as though cut by a saw and when it is $\frac{3}{4}$ of an inch through,' &c.

"The Grub, I find, is in all respects like those of *elytus*, a longicorn Beetle, but they also resemble the larva of the genus, 'saperda,' one of which is the apple tree borer, so much, that in their larva state it is rather difficult to distinguish them.

"They usually lay their eggs in September, which are soon hatched, and the grubs immediately burrow into the bark, and through the Spring and Summer, make channels through the sap wood, more or less deeply into the trunk; small branches, are so weakened as to drop off, as if cut by a saw, the heart wood being all cut away; there is nothing but the bark left. The seat of their operation is known by the oozing of the sap, and the dropping of the saw dust from the holes. A pointed wire introduced will, by puncturing the grub, destroy it. But the beetles should be destroyed before they deposit their eggs. White-washing and covering the chinks, &c., with grafting composition, may prevent the females from depositing her eggs upon them.

"Our insect-eating birds should be protected, as they undoubtedly devour many of these insects. The families of beetles, such as are known to be wood-eaters or borers in their larva state, and attack our forest, ornamental and fruit trees, have a close resemblance to each other. Mostly of a yellowish white color, the head brownish, small, and

sunk in the first segment; the antennae are very short. The segment which receives the head, is short and transverse; next to it is a large oval segment, broader than long, and depressed or flattened (in most of them.) above and beneath. Behind this, the segments are very much narrowed, and becoming gradually longer; but are still flattened to the last, which is terminated by a rounded tubercle or wart. There are no legs, or if any, very minute; in some a few small warts on the underside of the second segment from the thorax.

“The wood-peckers are quite successful in discovering the retreats of these borers, and harpoon the naked bodied culprits, and drag them from their burrows with more skill than the gardener or the nurseryman.

“I would advise Mr. Hetzel to have an eye on the escape of some of the perfect Beetles, during the month of September, and send you a specimen; their shape and character will determine whether it is a *clytus*, a *saperda*, or of the *Rupestorian* family. I suppose it to belong to the genus *clytus*, and I would like to be certain of it, as that genus has heretofore not been found on the Cherry tree that I know of.”

GRAPE FROM LEWISTOWN, PA.—Remarkably fine bunches of what we suppose to be Brinckle, or some very nearly allied Grape of the *vinifera* section, grown in the open air. They weighed over one pound each, and were splendid specimens in size, beauty, and quality. We have no letter, giving any account of who sent them.

VIRGILIA LUTEA.—II., *Cincinnati, Ohio*, calls our attention to an article in the *Prairie Farmer* on this subject, which we have overlooked. He says the article he refers to corrects Michaux for saying the flowers are a yellow, when they are white; and our correspondent wonders whether Michaux could possibly be so mistaken, and wonders whether there may not perhaps be two kinds, and the other one be worth looking for.

The *Prairie Farmer* is mistaken as to the origin of the name *lutea*, which is derived from the *yellow wood*, and not that the flowers were to be yellow.

The proper name of the tree is *Cladrastus tinctoria*, and not *Virgilia*—as it was subsequently to Michaux's description found not to be a *Virgilia*.

Sometimes it is impolitic to change even a bad name when once established,—but in this case the genera are so different, that Rafinesque's name of *Cladrastus* should be adopted by all.

ROOTS PURIFYING WATER.—*R. C., Brooklyn, New York*, writes “We had a small pond in our garden, which was offensive through there not being enough water running to keep it from stagnating. It was green and slimy, and quite nasty.

Within the last few years, some roots from a neighboring weeping willow have got in large quantities to the pond, and the water since is always clear and pure. Is it generally known that the roots of trees have this effect on stale water?” [We think not.]

GREELEY PRIZE FOR GRAPES.—The committee appointed to award the \$100 offered by the Hon. Horace Greeley, President of the American Institute for the best Grape for general cultivation in the Northern and Middle States, have decided to hold an Exhibition for that purpose on Tuesday 2d October, 1866, at the rooms of the American Institute in the Cooper Building of 8th street and 4th Avenue, in the city of New York.

Exhibitors must present 12 bunches of each variety, to entitle them to compete for the prize. Grapes for competition should be forwarded to John W. Chambers, Secretary Horticultural Association, on Monday, October 1st, who will see that they are properly displayed.

Grape growers are cordially invited to compete for this premium.

The committee will use every effort to make this exhibition an attractive feature.

It is expected that many of the leading Horticulturists of the country will be present.

P. T. QUINN, Sec'y. J. A. WARDER, Ch'n.

[We cheerfully give place to the above,—but it will be difficult to decide by *samples on a table*, the best Grapes for *general cultivation*. Very often the best eating, and most handsome looking fruit, are totally *unfit* for general cultivation, as the experience of the past ten years has proved.]

OSAGE ORANGE HEDGES IN VIRGINIA.—*Mr. O. Taylor, of Lincoln*, says:—“I am much pleased with the Osage Orange hedge, and with an experiment I made a week ago with trimming, as it goes to prove the cost of keeping it in repair one year. I think one trimming a year is all that is needed after the hedge is large enough to use as a fence, and that trimming should be done some time between the 15th of July and the 15th of August.

“I trimmed mine the past three years so, and I found it all that is needed, and a more complete hedge I don't desire. The amount trimmed per day, is about $\frac{1}{2}$ to $\frac{1}{2}$ mile per day, with a good hand,

and a slasher made of an old sword, I find it easy work."

EGGS OF THE PEAR SLUG—PEAR FERTILIZER.—*J. P. J., Cross Creek.*—"I am about to start an extensive Pear orchard in the vicinity of Norfolk, Virginia. 1. Will there be any danger of purchasing trees, that a slug has eaten off the leaves in the fore-part of the Summer. The slug is something similar to the *Rose slug*—I wish to take the trees to a vicinity, that is not affected by the slug. The trees are doing well at the present time, with no appearance of slugs." 2. What fertilizers are best for the Pear trees."

[1. If the soil be cleaned away well from the roots, as it generally is in standard Pears, there will be little danger of introducing the Pear slug larvæ.

2. Very rich road sand is the best fertilizer of the Pear on heavy soils. Salt is good to apply on sandy ones.]

PLANTING POTATOES IN THE FALL.—"*Otitor,*" *Galesburg, Illinois*, asks: "Is there any real advantage in planting Potatoes in the fall? What is the best mode of insuring a crop, and what the proper time in the fall to plant? How much earlier do potatoes, planted in this way mature, than those planted at the usual time?"

[Potatoes sometimes get killed by frost, and we have never known of any one who has made fall planting a system. If any one has, we should like to hear about it.]

CANTELOUPES from *R. S., Baltimore, Maryland*, 18 inches in length, and 28 inches in circumference.

These were of first rate quality, and are of a variety, known years ago as the "Mexican," and also erroneously "Christiana melon." They do not retain their hold on the community, through varying in quality in some localities and seasons,—but where they do well, there is no better variety known.

NEW JAPANESE EVERGREENS.—A correspondent who has recently returned from Paris, writes: "The most popular and distinct of the new Evergreens I saw near Paris, were *Biota falcata*, *Thuyapygrulla*, *Thujopsis latevirens*, *Abies polita*, *Arbutus cupreoides*, *Thujopsis dolabrata*, *variegata*, *Abies firma*, *Retinospora leptoclada*, *Sciadopitys verticillata*, *Libocedrus tetragona*, *Cryptomeria elegans*, *Retinospora obtusa*.

NAMES OF PLANTS.—*W. B., Philadelphia.*
No. 1. A yellow flower, 2 feet high.

2. A Purple flower, (spiral.)
3. A blue flower.
4. A small white flower.
5. A white flower like a spirea.

- [1. *Oenothera fruticosa*.
2. *Spiranthes autumnalis*, but not purple.
3. *Gentiana saponaria*.
4. Much broken, apparently *Comandrum umbellatum*.
5. *Gnaphalium margaritacea*.]

NAMES OF GRAPES.—*N. T. H., Fredericksburg, Virginia.*

1. Cuyahoga.
2. Alvey.
3. Herbemont.

NAMES OF PEARS—*C.*

- 2 is Beurre Superfin.
- 3 Doyenne Boussock. 1 we do not recognize.

PICKLING CUCUMBERS.—A correspondent inquires the best recipe for these. The following is the plan generally pursued by the best picklers:

Choose nice young gherkins, lay them upon dishes, sprinkle salt over them, let them lie a week, drain them off, and put them into stone jars; pour boiling vinegar over them, place them near the fire, cover them well with vine leaves, and if not a good green, pour off the vinegar and boil it again; cover them with fresh vine leaves, and continue doing so until they are a good color, so as to make a better green, you must not use a metal steupan or brass skillets, which are poisonous.

Use wooden spoons with holes to dish all pickles, keeping them always well covered and free from air. Another method of pickling cucumbers, which is good, is to put them in salt and water, as you pick them, changing the salt and water once in three or four days. When you have done collecting your cucumbers for pickling, take them out of the salt and water, and turn on scalding hot vinegar, with alum, salt and pepper corns in it.

New and Rare Plants.

THE *Botanical Magazine* for August, contains figures of the following plants:

KLEINIA FULGENS.—A glaucous succulent suffruticose plant, having branched stems, 2 to 3 feet high, obovate-oblong leaves, and small heads of vermilion-orange flowers; it has been introduced from Natal by W. Wilson Saunders, Esq.

FREMONTIA CALIFORNICA.—A beautiful hard

Californian shrub, formerly introduced by the Horticultural Society, and lost, but now re-introduced by Messrs. Veitch & Sons. It is a deciduous shrub, attaining about 40 feet in height, with sometimes the aspect of a Fig tree, having lobate cordate leaves, but also bearing a profusion of large golden yellow flowers, which render it very ornamental. Its affinities are not very clearly settled. "It was referred," observes Dr. Hooker, "to a new section of *Bombacæ* (*Fremonticæ*) by its founder, and correctly placed along with the famous Hand-plant, *Cheirostemon*, and the stamens were described as five, with two-celled anthers. On the other hand certain considerations of affinity and structure induced Mr. Bentham and myself, following Dr. Torrey, to regard the apparently two-celled anthers of this plant and *Cheirostemon* as consisting of two confluent single celled anthers—whence we referred both to the order *Malvaceæ* instead of *Sterculiaceæ*. I must confess, however, that after examining living specimens of *Fremontia*, I am inclined to refer the *Fremonticæ* back to *Sterculiaceæ*, placing it next to the tribe *Sterculiæ*." The golden-colored flowers, two inches and a half in diameter, consist of the broadly campanulate five-lobed calyx.

FERNANDESIA ROBUSTA—A Guatemalan Orchid, with upright stems, distichous keeled acute closely imbricated leaves, and yellow flowers protruded singly from the axils of the upper leaves.

SEMPERVIVUM PAIVÆ, a Canary Island shrubby succulent plant, with spatulate leaves, and panicles of green flowers. It is dedicated to the Baron de Castello de Paiva, an unwearied patron of science.

SANCHEZIA NOBILIS.—A beautiful *Acanthaceous* plant introduced from Ecuador by Messrs. Veitch & Sons, and flowered by them in June last. It is an erect plant, with obtusely tetragonous stems, large oblong-obovate leaves, and an erect terminal inflorescence, consisting "of numerous opposite bracteate fascicles of flowers, forming together a dense panicle most brilliantly colored, the branches deep purple, the bracts quite red, and the corollas two inches long and cylindrical, slightly curved and contracted at the mouth. Dr. Hooker observes that the affinity of this plant with *Ancylogyne* is so close and obvious, that there can be little doubt the name *Ancylogyne* must be suppressed.

SACCOLABIUM AMULLACEUM, an Indian Orchid, with erect racemes of bright rose-colored flowers, than which nothing can be more charming.

PINUS LARICIO.—This fine Pine supersedes the

Larch for Forest-planting, producing timber much sooner for Railway Sleepers. It is also used for Spars and Masts in the French navy.

New and Rare Fruits.

GOLDEN SEEDLING APPLE.—In 1850 I returned to Illinois after an absence of one year spent in Missouri; going on to a new farm, I set out a new orchard, most of its trees being obtained in St. Louis or vicinity. Among these was the "Golden Seedling" so named in the original bill but being at that time a novice in fruit growing, I did not know it and called it a spurious "Rhode Island Greening." It is a decidedly acid fruit, size full as large as "Willow Twig," a little more depressed, color green with a dull blush when grown in the sun, a long keeper, season from last of February to first of May, but good for culinary purposes by first of November. About February it turns yellow inside and out, and the blush all disappears and no one need complain that it has no decided flavor, but any one who likes a tart apple will pronounce it a good dessert fruit after the first of March. In my humble opinion it is immeasurably ahead of the Willow Twig or Ben Davis in quality. The tree is perfectly hardy, a spready grower and bears every year.—CHAS. W. MURTFELDT, in *Prairie Farmer*.

THE DUHRING RASPBERRY.—This variety originated on the country seat of Henry Duhring, Esq., Belmont, near Philadelphia. It is a seedling of the Hornet, and the only one, out of five hundred seedlings, that endured the Winter. Mr. D., finding this plant hardy, cultivated it; and exhibited the fruit for the first time, before the Pennsylvania Horticultural Society, July 1862, on which the Fruit Committee reported:

"They also notice a very large seedling Raspberry, of good quality, as large as the Hornet; it appears to be a more abundant bearer."

The plants since then have proved hardy, without any protection, on some of the highest and most exposed localities about Philadelphia, with the exception of the past Winter, (1865-'66), which has been one of unprecedented severity, the thermometer on one day falling as low as 15° below Zero, a portion of the plants sustained some injury, yet not enough to prevent them producing a moderate crop of fruit. In other and more sheltered localities, they were uninjured, and produced a large crop. Unlike its parent the Duhring, pro-



THE DUHRING RASPBERRY.

pagates freely, and throws up an abundance of strong canes, and is altogether more robust and hardy.

Fruit as large as the Hornet, but more round; color dark red, very firm; flavor similar, but superior to its parent. It ripens some five or six days earlier than the Hornet, the yield is abundant, fully equal to the Philadelphia.

It has not yet we believe been tested outside of Philadelphia, and it has yet to undergo that wide spread ordeal we like to see a fruit pass through before recommending its "general cultivation;" but we are satisfied that it is superior to the Hornet, and as that is every where popular, we think the Duhring will be a good addition to our Raspberry lists.

STARR APPLE.—We have the following note from Mr. John Starr, Woodbury, N. J., July 24, 1866:

"I take the liberty to send to you another sample of the Apple, of which I sent you two or three

specimens two years ago. I was unable to send more at that time; but from this lot you will be able to test its merits in its proper place—the kitchen. I claim it to be the best, considering size, appearance, and general qualifications for culinary purposes, ripe at this date. This lot will average more than 10 inches in circumference, although the tree has been heavily loaded, about 12 bushels having been taken from it. The tree is 12 inches in diameter near the ground."

Regarding this variety distinct from any we know; and esteeming it as the best early Apple we know of its *size* and cooking quality, we propose to call it as above.

It is of the Holland Pippin type, about 3½ inches wide, by 2½ deep, flattish on the top, with a basin of medium width and depth, calyx medium sized and closed. Stem slender, about an inch long, rather deeply set. Skin greenish white, and pleasant sub-acid flesh, fit for use middle of July, and will keep good till 1st of September.



THE STARR APPLE.

HIWASSEE GRAPE.—This grape does not belong to the Aestivalis family, but as its character is so unique, we give a description of it. The vine was found growing wild on the bank of the Hiwassee river, in Towns county, Ga., a few years since. It is, beyond all doubt, a cross between the wild fox grape and the cordifolia or frost grape. It is an enormous bearer; the clusters large and compact; the berry medium to large, round and black; juice purple; flavor acid, and a good deal of the poke

berry about it, with an aroma of "*de African scent*." The vine is beyond control—the leaves heart-shaped and smooth on both surfaces. It is eatable after frost has mellowed it.—J. VANBUREN, in *Southern Cultivator*.

KITTATINNY BLACKBERRY.—We find in the *New Jersey Herald*, a full account of a meeting of Pomologists in Sussex county, who went to see the

Kittatiny growing,—one of the best ways to get a good idea of the real value of a variety.

“The gentlemen composing this “Blackberry Party,” were a committee of the Farmer’s Club of the American Institute, comprised of Nathan C. Ely, President of the Club, J. W. Chambers, Secretary, of New York, John W. Bergen, of the New York Metropolitan Police Commissioners, of Brooklyn, Robert T. Dodge, Esq., and Mr. Williams, of Montclair, and Mr. P. J. Ward, of Bloomfield.

The Press was represented by Dr. J. A. Warder, of Cincinnati, of the *Prairie Farmer*, and Mr. C. Taber, of the *Tribune*.

Delegates from other associations were also present, Dr. Warder and Mr. M. F. Cowdery, of Sandusky, Ohio, from the Ohio Horticultural Society; Edwin Roberts, Treasurer of the West Jersey Fruit Grower’s Society; Mr. O. J. Weeks, of West Webster, near Rochester, N. Y.; Mr. J. M. Johnson, of Binghamton, N. Y.

The Nurserymen present were Mr. S. B. Parsons, Flushing, Long Island; William Parry, of Cinnamonson, Burlington county; Isaac Buchanan, of New York; D. D. Buchanan, of Elizabeth; Dr. Quinn, Superintendent of the farm of the late Professor Mapes; John S. Collins and T. C. Andrews, of Moorestown, N. J.; W. T. Bassett, of Hamonton, Atlantic county; R. W. Holton, of Haverstraw, N. Y.

The amateur cultivators were J. C. Thompson, of Staten Island; Messrs. Jelliff and Price, of Newark; J. Y. Bawden, of Freehold; J. S. Eastmond, John West, W. W. Couover and Henry Smith, of Monmouth county.

They all appear by their speeches to have thought highly of the variety, and closed the party by unanimously adopting the following resolution:

“Having this day, August 2, 1866, observed the fields of Kittatiny Blackberries in cultivation at Newton, New Jersey, and tested the fruit, now in full perfection, we deem it due to Mr. Williams, of Montclair, and to the Horticultural public, to state that we regard this new variety recently introduced by Mr. Williams, worthy of unqualified praise. The hardiness, vigor and productiveness of the plant, together with the size and unsurpassed flavor of the fruit, would seem to leave nothing further to be desired in a Blackberry ripening at this period of the Summer, either for private gardens or for the market.”

It seems to be one week earlier than Lawton, and keeps black longer after gathering.

Domestic Intelligence.

KEEPING GRAPES.—In answer to the enquiry of Suel Foster, as to the best method of keeping Grapes, I would say that for the past five years I have eaten grapes up to February and March kept as follows:

Pick the Grapes before the frost comes, taking pains to handle them carefully, and pick out all imperfect fruit. Take a box that will hold from one to two bushels, place a newspaper on the bottom and then a layering of Grapes; on this put another newspaper and then a layering of Grapes, and so on until the box is full. Put away in a cool dry room, being careful to set the box up a few inches from the floor. If extreme cold weather should follow, either cover them with blankets or hay or remove them to a warmer room.

The most perfect Grapes, however, that I ever saw or tasted, for the time of year (last January) was at the Fruit Growers’ Convention at Rochester, N. Y., last winter. They were the Isabella and Diana, and were apparently as fine and luscious as when picked from the vines, retaining their rich bloom in perfection. The manner of keeping them was as follows:

Picked as above described; put away in boxes, such as are used for shipping Grapes. A large box was then filled about quarter full of dry tan bark, these boxes placed in and filled in around the sides and top the same thickness with the same material and put up stairs in the barn. If extreme cold weather followed, such as would be apt to reach the fruit too soon, (although there is not much danger of this if space enough is filled in with the saw dust or tan bark,) cover the boxes with hay till it passes off. The party who placed the above specimens on the table stated that he had taken them out in perfect condition in April and May.

Undoubtedly the best keeping Grapes are the Diana and Isabella.—A. M. PURDY, in *Prairie Farmer*.

BLACK-KNOT IS A FUNGUS.—Just as Dr. Fitch, having proved to his own satisfaction that Black-knot is neither gall nor a fungus, infers by the method of exhaustion that this must be a disease; so having proved that it is neither a disease nor a gall, we may infer by the method of exhaustion that it must be a fungus, or rather an assemblage of funguses. In confirmation of this theory may be adduced the very remarkable analogies, between the structure of the Black-knot and that of the fungus

described as occurring on Red Cedar. That this last is really and truly a fungus and not a gall, is shown by the fact, that it is scarcely ever inhabited by insects; for out of hundreds of specimens that I have cut into, both green and dry, not more than two or three contained the larvæ of moths, but one contained what was probably the larva of an ichneumon fly, and all the rest were perfectly solid and unbored. On the other hand, Black-knot is so invested by insects, that it is impossible to find a mature specimen that is not all bored up by them. The cause of this remarkable difference may be attributed to the well-known repugnance of almost all kinds of insects for Red Cedar.

If, then, Black-knot is a Fungus, and if, as I think I have shown, it is an annual plant propagating itself by seed or the so-called "spores," and the "spores" make their appearance about the end of July in latitude $41^{\circ} 30'$, then it must be obvious that if all the Black-knot on a particular tree is cut off and destroyed in the fore part of July in latitude $41^{\circ} 30'$, or a little earlier or later as you go further South or further North, an effectual stop will be put to its further propagation. It is true that the "spores" are in the form of an impalpable powder, so that they may be carried some considerable distance from other infected trees by the wind; and it may probably be further true, that certain "spores" may be dormant in the bark for over a year, as the seeds of weeds will often lie dormant in the ground for over a year. Still, with all these possible drawbacks, I have little doubt that the above remedy will, as a general rule, if applied according to directions, be found effectual.—D. B. WALSH, in *Iowa Homestead*.

TRIMMING OSAGE ORANGE HEDGE.—Prof. J. B. Turner, of Ill., in an article on this subject written for the *Prairie Farmer*, says,

"No trimming whatever should be given to the plants the first three years, or till the stock is about one inch through, except to clip back some of the stronger plants and keep the growth of all as even as possible. The stems of the plants will then all stand in a single row, some five or six inches apart. When at this size let one man take a hook to pull the plants down and another a nicking splasher and nick the plants half off quite down, or into the ground, and lay them down to an angle of not more than 45° , if laid too flat as some inexperienced men recommend, so that their tops do not come up to the sun, in a few years the main shoots will all die out. But if properly laid the main shoot will live and new shoots will spring up perpendicularly, and

bind the whole hedge together in a single year so that it is impossible for anything to pass through it, even the smallest pig.

ROOT-PRUNING PEARS.—Dr. Hull gives his practice in the *Valley Farmer*:

To perform the operation on trees, the trunks of which are, say three to six inches in diameter—mark a circle around the tree, the diameter of which shall be three feet—it may be a little larger than this for such slow-growing sorts as Seckel. With a sharp spade, open a trench around the tree wide enough to enable you to work without difficulty; deepen this trench three feet, or until you reach and cut all lateral roots. The Pear tree being a deep feeder, you will find very few laterals nearer the surface than eighteen inches; having cut these, you will fill the trench with good soil, mulch, or what is better, thoroughly cultivate the ground about the trees during the Spring and Summer months. You will repeat the operation each season as described, or as often as necessary to put your trees to rest at the time named. It will, however, be necessary at each subsequent pruning to enlarge the diameter of the circle, say, four inches—or for slow growing sorts six inches—those of slow growth requiring less check than trees more rampant.

NICE GRAPES IN FEBRUARY.—Mr. Charles Stanley, of Winthrop, brought into our office on Thursday, Feb. 22d, a cluster each of the following varieties of Grapes (all in a good state of preservation, especially the Delaware) viz: Union Village, Delaware, Diana and Isabella. After being gathered last fall, they were placed in drawers between layers of paper, kept in a cool room up stairs until freezing weather, and then removed to the cellar. The Grapes were of good flavor, the Delaware especially being nearly as perfect as when just picked. They were all in a very good condition.—*Maine Farmer*.

CHILOPSIS LINEATA.—Has recently been introduced into cultivation here from Western Texas. It has willow shaped leaves and Bignonia-like flowers, which are strongly tinged with purple, and sweet scented, like the perfume from rose water. It flowers about the middle of May; is a small tree of about fifteen feet high, but is most beautiful when in flower. It has a scanty foliage, and deciduous leaves; is a rapid grower, and delights in a dry climate and hard limestone soil.—B. BUCKLEY, in *Country Gentleman*.

VINERIES AT DETROIT.—Stopping a short time at Detroit, we called at Captain Ward's place to see the vineries there we had heard so much talk of—and truly the Captain is heavy in Grapes—no less than twelve vineries ranging from 50 to 150 feet long each.

His first vineries where built six years ago, and of course are in full bearing; others have been built at different times since, and when they get in full bearing, which they give evidence they will do, there will positively be tons of hot-house Grapes. Only one is heated, which seems strange and that not very efficiently, hence the crops must needs mainly come in all at once, while if say one quarter were well heated the season would be much longer for their enjoyment on the table. They are nearly all span roof standing North and South, and mainly on the fixed roof, principle. The vines are in excellent health and the gardener Mr. M. Green, states the thinning, a laborious job in such places, is performed by women.—*Prairie Farmer.*

AGRICULTURIST STRAWBERRY IN THE SOUTH.—Plants received in excellent order last November, and set out with the utmost care. Fifty per cent failed to grow, although they were carefully nursed. Some plants produced very large berries, conical shape and coming to a sharp point, color scarlet, flesh white, soft, and entirely devoid of flavor. So far, this far-famed variety has given me no satisfaction. Growth of plant quite moderate, and foliage very unpromising. It assumes an entire alteration here from its habit at the North, where I noticed it to be vigorous. I have the true variety, as I saw the plants growing in New Jersey, and they were taken up almost under my eye.—*BUCHMAN, in Southern Cultivator.*

Foreign Intelligence.

DEGENERACY OF FRUITS.—Does the graft, as some people maintain, alter the character of the variety? For my part I think not; at least I have never observed anything to make me think so. Duhamel, for example, remarked a century ago, that the Pear Imperiale with Oak leaves (another curious variation of foliage similar to what I mentioned before) never had but three cells in its ovary instead of five. Now it can be proved at the present day that all the fruit of this race or this variety have but three cells; although ever since the time of Duhamel it has never been propagated in any other way than by grafting. Many other facts of

the same kind might be brought forward in support of the want of power in the graft to alter the nature of the variety, as for example the property, whatever it may be, which gives flavor to fruit, varying as it does so remarkably in different kinds.

The notion that fruit trees degenerate because they are propagated by grafting is an error which must be exposed. There is no single fact to prove it. Those which have been cited depend upon totally different causes, first and foremost among which are climate, unsuitable soil, and very often bad cultivation, or a neglect of pruning, so common now-a-days. Our ancient Pears, which a century or two ago were so justly esteemed, are now exactly the same as they ever were; they ripen at the same time and keep good just as long. If they are neglected it is no proof that they degenerate. It is only that nurserymen are interested in bringing forward new varieties. The pretended degeneracy of ancient races is in reality nothing more than one of these clever devices of the present day. On the other hand, can it be true, as Van Mons and many pomologists believe, that the pips of a good fruit produce wild austere fruit, and thence return to what they suppose to be the specific type? I do not hesitate to declare the contrary, and I defy any one to bring forward an example of a good fruit, whose flowers were fertilized by its own pollen, or by that of any of its own race, whose seed has produced wild fruit. If a good variety is fertilized by a wild or austere sort, it is only natural that the trees raised from such seed should produce new varieties, some if not all of which will prove inferior in quality; it may even happen that in the number there will be some with fruit as bad as that of the wilding which furnished the pollen; but this degeneracy, if you like to call it so, is nothing but the consequence of an unskilful cross. It may be considered certain, that all superior varieties of the Pear tree, and I may say of all fruit trees, if they are fertilized by themselves, produce good fruit, they may vary, and will probably do so, sometimes in one peculiarity and sometimes another, according to the variety, but none will become wild, any more than our seedling Cantaloupe Melons return to the form and flavor of the little wild Melons of India, or our Cabbages and Cauliflowers return to some one of the wild races or varieties that grow on the sea-shore. Whatever the advocates of immutability may say, the species of plants are really subject to great variation, and there is much truth in the theory which refers to the same specific type races and varieties, which, though very different in appearance, have the same morphological organi-

zation, and which, like the members of the same family, are capable of crossing one with the other. Taking the whole series of possible generations, I am quite aware that there always will be doubtful cases, notwithstanding the proof of fertile crossing; but that is no reason for separating, as so many distinct primordial entities, what observation and analogy show us can proceed from a single original specific type. Take any one of our races of Pear trees, and transport it to all the regions of the globe: wherever it can exist, it will struggle to adapt itself to the situation, and you will find after a few generations it will have given birth to new and numberless varieties. This fact, which takes place under our own eyes, in the case of every cultivated plant that is much distributed over the world, gives the key to those polymorphous species which perplex botanical classifiers, and which have only become what they are, by Nature herself having spread them over an immense expanse of country."—*Decaisne*.

THE ORANGE TREE.—It is rather unusual to have this plant in flower on Christmas-day, so I will explain the treatment by which I succeeded in flowering one most profusely at that time.

From the middle of December to the end of January, what better suited to an antique ebony basket on a British winter's day than this poetical plant, imparting the delicious perfume of its ivory-like blossoms through a whole suite of rooms? It should receive the entire treatment of a *Camellia*, with one exception. Place it in the warmest situation you can command during summer, in the warm corner beneath the south and east wall—in fact, imitate its native climate, accompanied with a suitable amount of air to keep the sun's rays from scorching it. During summer carefully take off all flowers and fruit, should there be such on it. The object chiefly in view should be to obtain a nice growth matured by the end of September to forward the embryo flowers upon the same as much as possible, avoiding everything likely to cause it to grow or move perceptibly until a month before you wish to have it in flower, when you should treat it as you would a white *Azalea* when forcing it. How exceedingly well our French neighbors do the Orange? I cannot see why they should be so far in advance of us when I consider the warmth obtainable under a south wall in Summer. Our object should be to ripen the wood more than to make so fine a growth.—*Journal of Horticulture*.

HOW TO CULTIVATE VINES IN POTS.—This branch

of Horticulture has been frequently written upon, and these notes are not jotted down with the view of imparting instruction to my older brethren, but to afford encouragement to those who with limited means wish to be successful in this most interesting mode of fruit-culture.

It is now a little more than three years since my present employer put up several vineries and an orchard-house, (the orchard-house and its tenants must form the subject of future notes) and when the houses were finished, and the hot-water apparatus completed, he very naturally wished to obtain an early produce from his outlay. He therefore purchased a number of pot Vines, of varieties recommended by nurserymen as having special qualities for pot-culture, to supply fruit until those planted in the borders attained a fruiting condition.

What their treatment was the first year I do not know, as I only took charge of the Vines two years ago. This I know, that these bought Vines produced no fruit the first year, and when I first saw them, they were in a most deplorable condition, with the wood unripe, and the buds imperfectly formed. They had, during the month of October, received a surface-dressing of good turfy soil, mixed with a tolerable amount of rotten dung and bone dust. I pruned them in due course, and about the middle of January they were started into growth. As soon as the buds began to break they were supplied with weak liquid manure two or three times per week, and as the shoots developed themselves the liquid manure was increased in strength, and applied more frequently. Most of the bought Vines yielded tolerable crops—more than could be well expected, considering the state of the wood, for they produced from four to seven bunches each.

Now, in addition to these bought Vines, were a large number which had been raised from eyes the previous spring, the eyes taken without being named, no doubt, from the Vines permanently planted in the borders, and cut down in the usual way. Most of these Vines had been grown in rather small pots, and, as a matter of course, their growth was small in proportion. These, with the exception of one or two of the strongest, were cut down to two eyes, and along with the others were started into growth. They broke well, the best shoots only being encouraged, and during their early growth were assisted by frequent applications of manure water. Some of the strongest were shifted into their fruiting-pots in the early part of the Summer, and the others remained until autumn. They each soon reached the top of the respective houses in

which they were growing, and made canes something resembling a gentleman's slender walking-stick.

During the autumn the remaining Vines were moved into pots of about 12 inches in diameter, and 12 inches deep. This size I consider quite adequate for all ordinary purposes, and Vines grown in 12-inch pots with ordinary care may be expected to produce from 5½ lbs. to 8 lbs. of fruit each. The compost in which they were potted consisted of two-thirds good hazel loam chopped up and left in lumps about the size of an egg, with some rotten dung, and pounded bones to form the other part. The pots were well drained with broken crocks, and over the crocks was placed a layer of boiled bones about the size of a walnut. The soil was well thumped into the pots, and a sufficient space left to hold water. They were pruned to 6 or 7 feet in length, according to their strength, and being placed in the position they had to occupy, about Christmas the early house was again started.

I prefer bending down the Vines to a horizontal or recumbent position until they begin growing; this causes an equal circulation of sap, and makes the buds break more regularly. By this means I succeeded in breaking every eye in the pot Vines, with the exception of one or two nearest the pot, and every branch showed fruit—some shoots two, three, four, and even five bunches each. The usual routine of disbudding, stopping the laterals as they advanced, thinning the bunches, also the thinning of the berries, and the syringing, were duly attended to.

One very important point, requiring special attention is the watering. This must be varied to insure success. Plants, like human beings, prefer a change of diet. I obtain my supplies of liquid manure from a well which receives the drainage from adjacent stables. This, when weak through heavy falls of rain, I strengthen with guano at the rate of about two ounces to the gallon. I also employ the soapsuds from the laundry, mixed with cowdung and guano as a change.

Those Vines started in the earliest house ripened a few bunches in the early part of May, while those started in the orchard-house, and brought into the late vinery as accommodation could be found them, are still in fruit, and may be up to Christmas. Thus with pot Vines alone, independent of what has been taken from the rafters, we may have a supply from May till December.

Now, let us look at the produce of these pot Vines. Lady Downes' appears to be a shy bearer in a pot; at least with us, the produce was but

small, and it was the only one that could be considered a failure. It was not forced much, being only started in a late house towards the end of February. Trentham Black appears to be not very free in a pot, but the fruit was large and exquisite. Perhaps some of your readers may have succeeded better with it in a pot. Muscat St. Laurent and Chaselas Rose Royale I consider useless; the latter produced eight or nine bunches to a pot, but the berries were small, and the flavor indifferent. Chaselas Musque may be considered good for pot-culture, and also for forcing, as it is a free bearer and an early variety. Black Frontignans from nine to eleven bunches on a Vine; White Frontignans, from ten to seventeen bunches; and Grizzly Frontignans carried seventeen bunches; and one Grizzly showed upwards of thirty bunches on a rod about 6 feet long. Many of the bunches were as good as may be ordinarily seen on rafters. Black Hamburgs produced three, four, and up to fourteen bunches. One Black Hamburg I only allowed to carry 4 bunches, and weighed the produce. The first bunches, weighed 2½ lbs., the second and third were 1½ lb. each, and the fourth 1 lb. Thus one Vine with only four bunches produced 6½ lbs. of fruit fit for any table. I should like to know what variety of Hamburg the latter is. The bunch is large and heavily shouldered, and tapering at the point; the skin deep black purple; berries roundish, and of good flavor; and the foliage when changing color, assumes a beautiful pink tinge very different from any other variety I know. [Probably Black Champion.—EDS. J. OF H.]

I am certain any one possessing only a small pit, with artificial heat at command, may succeed in growing fine Grapes from pot Vines. The minutiae of propagation, and the after management of pot Vines have been so frequently detailed by Mr. Fish, that I might refrain from saying anything on the subject. But, as we seem almost in the height of a Grape-growing mania, and having given the cultivation of Vines in pots special attention, I may be excused in saying a little for the benefit of beginners.

The plants are, without doubt, the best raised from single eyes obtained from strong, healthy Vines, and should be procured as early after Christmas as possible. There are many different ways of making the cuttings; perhaps as simple as any is to make them about 1½ inch in length, and to place them horizontally with the bud uppermost in small 60-sized pots, filled with light, rich soil, and well drained. These pots should, if possible, be placed in a bottom heat of from 70° to 75°. As

soon as the small pots are filled with roots, they must be transplanted into larger pots—say large 48's. The compost used for this shift, and for every successive potting, should consist of two parts turfy loam, and one part very rotten dung; to this add, if the loam is inclined to be stiff, a little sharp river sand. A good sprinkling of sifted bones, with a little charcoal and a little lime rubbish, will do no harm. Let these be well mixed and incorporated together. The soil should be well warmed in a stove before using it, or the plants will sustain a serious check, and when water is applied it must be in a tepid state. They will soon require another shift, which should be into eight-inch pots, and finally into 12-inch pots. Some people recommend larger pots, but then they are much more inconvenient to move about.

I invariably allow the canes to become about 8 feet long before stopping them, and then pinch off the laterals above the first, when they have made five or six leaves. When they have perfected their growth, they may be planted out of doors during their season of rest. In the Autumn they will require some of the old soil to be removed from the surface of the pots, and about one-third down the sides between the pot and the ball, and replaced with rich compost as above. When they are pruned they must be reduced in length according to the size of the house in which they are to be fruited, but ought not to exceed 7 feet in length. If they have been well grown, they will bear a respectable crop of fruit the following year; but Vines one year old, cut down to one bud, and grown a second year, may be expected to do much better.

As regards varieties suited for pot-culture, none can surpass the Black Hamburgh. The Frontignans also succeed well, and so does Chasselas Musque, though it requires a dry atmosphere when ripening, or else it is liable to crack. I have also seen the Muscat of Alexandria do well, but I have not grown it myself. I would avoid the Golden Hamburgh, as under the best treatment, I have never seen it succeed in a pot. Any one with but a very small amount of glass, when they can command attention, may grow good Grapes from the pot Vines, and derive much enjoyment from their cultivation.—QUINTIN READ, *Biddulph*, in *Journal of Agriculture*.

HISTORICAL NOTE ON THE HAWTHORN.—The common Hawthorn is one of the most interesting of our wild plants as to its historical associations. It was the distinguished badge of the royal house of Tudor. Miss Strickland states, in her work on

the Queens of England, that when Richard III. was slain at Redmore Heath, the body was plundered of its armour and ornaments. "The crown was hidden by a soldier in a Hawthorn bush, but was soon found, and carried back to Lord Stanley, who placed it on the head of his son-in-law, saluting him by the title of Henry VII., while the victorious army sang *Te deum* on the blood-stained heath.

Oh, Redmore! then it seemed thy name was not in vain!

It was in memory of this picturesque fact, that the red-berried Hawthorn once sheltered the crown of England, that the house of Tudor assumed the device of a crown in a bush of fruited Hawthorn. The proverb of 'Cleave to the crown, though it hang on a bush,' alludes to the same circumstance."

The Hawthorn is a memorial plant of that unhappy and ill-fated flower, the lovely Mary Stuart, Queen of Scots. At the eastern side of the village of Duddingstone, there stood an ancient Hawthorn, stately in dimensions, and picturesque in character. It had smiled in the Summer's sun, and had braved the Winter's sleet, for three good centuries. It stood on the side of the footpath, hanging over the road, and all the Spring and Summer time it delighted the wayfarer with its goodly foliage, and stood a brave old tree, promising to produce its clusters of fragrant blossoms for many a century to come. But a tremendous tempest in 1836, which made sad havoc among the aged sons of the forest, and strewed the coast with shattered wrecks and lifeless bodies, uprooted the old tree. And so perished, while yet beautiful and vigorous, "Queen Mary's thorn."

Tradition tells that, when in childhood, the "good regent," Murray, was at play with his half-sister Mary Stuart, the future rivals determined, in their childish sport, to plant each a favorite tree; and the growths of these were to be regarded respectively as omens of their future destinies. Mary selected her favorite plant, a Hawthorn, of which she planted several others during her life. James Stuart, the future regent, chose for his representative a hardy young oak. When next the young queen rambled at Duddingstone, she sought out the rival plants, and rejoiced to find that her own Hawthorn alone remained, which she deemed a fair foreshadowing of future happiness and prosperity. Alas for the futility of earthly hopes! while Mary was rejoicing and dreaming of a bright future of glory and greatness, the news came to her that she must leave the scenes of her childhood, and become an exile in the court of France, there to seek new ties and state alliances. She flung herself down upon the green turf beside her much

loved Hawthorn tree, and gave expression to her grief in burning tears.

PRODUCTION OF CIDER IN ENGLAND.—In 1818, Mr. Hugh Rands, a gardener at Brentford, exhibited at the London Society 127 kinds, all grown in his own garden, and considered the finest collection ever shown before. But no one has done more to encourage the growth of the better sorts, and to diminish the embarrassing list of varieties by directing their attention to the best kinds alone, than Dr. Hogg; and for years he has labored hard in finding out their proper names, and putting them in their proper places.

The apple is used in a great many ways, which are familiar to every one; but still it might be interesting to describe them, so I shall try and do so, and begin with Cider. The apple is largely cultivated in the west of England for this purpose. Some of the orchards occupy a space of fifty or sixty acres, and it has always been considered highly interesting; the trees covering such an extensive space, with a profusion of blossoms in the spring, and its fruit as beautiful in the autumn. In a good apple year, one acre will produce on an average from five to six hundred bushels; and in September, when the season is favorable, the heaps collected at the presses are immense.

Thomson has thus beautifully described the Cider season.—

“The fragrant stores, the wide-projected heaps
Of apples, which the lusty-headed year,
Innumeros, o'er the blushing orchard shakes.
A various spirit, delicious, keen,
Dwells in their gelid pores! and, active, points
The piercing Cider for the thirsty tongue.”

[Autumn, 637—642.]

Dr. Short informs us that Cider was first invented by a Norman, who much admired the flavor of apples. And Dr. Baynard says that Cider is very nutritious, and those that chiefly drink it, are healthy, strong, and have a good complexion.

HISTORY OF IMPROVEMENT IN THE APPLE.—

Parkinson, who wrote in 1629, in his great book on gardening, “Paradisi in Sole Paradisus Terrestis,” describes fifty-eight sorts of Apples; this was before the art of fertilizing the blossoms was made known. This ingenious method of producing new varieties was first deemed possible by Lord Bacon, for in his works which he wrote on Horticulture in the year 1618, which was eleven years after Parkinson, he says: “In living creatures there is a mixture of kinds, as the mule, that is generated betwixt the horse and the ass, and some other com-

pounds which we call monsters. But the mixture of plants is not yet found out, which nevertheless, if it is possible, is more at command than that of living creatures.”

In 1718, a century after Lord Bacon, Bradley's works was published, and he was the first author who wrote on artificial fertilization as being accomplished, but not then clearly described. But it appeared to have reached its highest perfection in Thomas Andrew Knight's time, for he benefited his country by raising several beautiful sorts, such as the Red Ingestrie, Knight's Codling, Downton Pippin, and others, by hybridization.—*Gardeners Weekly.*

EARLY HISTORY OF THE APPLE.—The Apple tree, *Malus* in botany, is a species of *pyrus*, belonging to the section of *Icosandria pentagynia*. It is a native of the eastern parts of the world, as we learn on the authority of the earliest writers both in sacred history as well as the information given by the ancient Romans. The prophet Joel, when he declareth the destruction of the fruits of the earth by a long drought, mentions the fruits which were held in estimation, and among them he names the Apple tree. Pliny, in his Natural History, which was written at the commencement of the Christian era, says one named Sextus Papinius brought two kinds to Rome in the reign of Augustus Caesar—one from Syria, the other from Africa. The crab, or the Apple in its wild state, is a native of most countries of Europe, but from whence we at first received the cultivated Apple is unknown; in all probability from the Romans. It was largely planted in this country by Monks, who all seem to have been their own gardeners, and took great delight in the cultivation of fruit; and the remains of their old abbey gardens show that they chose the best spots as to soil and aspect. As early as 674 we have a record describing a pleasant and fruit-bearing close at Ely, then cultivated by Brithnorth, the first abbot of that place. Ely at the present day has some splendid orchards, and the cultivation of fruit there is very much encouraged.

The cultivated Apple seems to have been scarce at Rome in the time of Pliny, for he states that there were some Apple trees in the villages near Rome which yielded more profit than a small farm; and he mentions nine-and-twenty kinds of Apples as being cultivated in Italy. The trees at this early time seem to have required the fostering care of man. Of all the fruit bearing trees in Italy, Pliny says the Apple is the tenderest and least able to bear heat or cold—particularly the early one that produces the Sweet Jenning.

WEeping WISTARIA.—Where there is sufficient skill for the task of growing *Wistaria sinensis* as a weeping standard tree, it makes a grand feature on a lawn, and blooms so profusely as in some seasons to be as densely covered with its purple racemes as a specimen *Cytisus* or an exhibition *Azalea*. But it must have room, the stem must be supported by a stake, the growth must be led on light supports in the directions necessary to form the proper outlines, and the subsequent growth must be pinched in from the middle of June to the middle of July, or it will soon grow out of bounds, and become an almost inextricable confusion.

THE OAK TREE SILKWORM.—The following interesting account of the recently discovered Oak Tree Silkworm of Japan, occurs in a letter to the *Times*, by Dr. T. O. Ward, now residing at Caen:

At the present time, when the cultivation of the Mulberry silkworm is attended with great risk in consequence of the disease which has now prevailed for several years, and which has had the effect of greatly increasing the price of silk all over Europe, I venture to call your attention to a report upon the silkworm of the oak. *Bombyx Yama-mai*, lately introduced into France from Japan, and which the reporter considers as perfectly adapted to the climate of Normandy, and I think I may add, after a residence of two years at Caen, that if this be correct it may also be introduced with success into the south and west of England, which differ very little, if at all, from this climate. The oak-worm, or Yama-mai, of Japan, is a monopoly of the Royal Family, and to sell or export is punishable with death. Hence the complete ignorance which exists respecting this valuable insect. In 1861 M. Duchesne de Bellecourt, the French Consul-General in Japan, sent some of the eggs to the Société d'Acclimatation, but as nothing was known of the habits of the insect, only one worm survived to make its cocoon.

This single specimen, however, was enough to establish its value, and in 1862 a scientific commission was directed to search for and send a quantity to France, which the commission was enabled to effect by the aid of M. Ponysse von Meerdeworth, a Dutch marine officer, director of the Imperial Medical School at Nagasaki.

Horticultural Notices.

ULTURAL SOCIETY.

STATED MEETING, SEPT., 18, 1866.

Passed the following resolutions relative to the

death of Matthias W. Baldwin, Esq., long a member and once President of the association. Caleb Cope, Esq., offered them:

Resolved, That this Society records with the profoundest sorrow the death of one of its Vice-Presidents, Matthias W. Baldwin, who for many years was a most attentive and useful member of this institution, and during a considerable portion of the time its able courteous and dignified presiding officer.

Resolved. That this Society will ever bear in grateful remembrance the valuable services rendered to it, and through it to the public, by reason of the many interesting contributions furnished by Mr. Baldwin from his extensive conservatories on the Delaware; the more especially for his liberal subscription to the building fund, without which the present effort to erect a hall for the uses of the Society would not have been made.

Resolved. That the pervading sadness visible in the countenances of those assembled in this hall to-night, notwithstanding there is much in the collected beautiful productions of nature otherwise calculated to gladden and cheer, shows how universal is the regret among those who have for many years witnessed the splendid specimens of horticulture which Mr. Baldwin has so generously exposed to public view at the meetings of the Society, and also his elegant conservatory on Chestnut street, which was erected and supplied for the benefit of the public exclusively.

Resolved. That a copy of these proceedings, signed by the President and Secretary, be presented to the immediate family of the deceased, accompanied by the assurance that this Society most deeply sympathize with the members thereof in the great calamity that has befallen them.

Resolved. That whilst the Society deeply mourns over its own bereavement, it deplores also the loss which many other institutions, churches and individuals experience in the death of so estimable a citizen, who illustrated a long life by the most munificent gifts, noble enterprises, and the observance of a uniform, upright and truly Christian deportment.

Resolved. That whilst no words adequately express and no act sufficiently indicates the fraternal attachment of the surviving members of this Society to their departed and lamented friend, they will take early measures to procure a portrait of him, that it may adorn those halls he had so materially aided to erect, trusting that each spectator who may be favored to look upon it in future years may alike revere the memory of the original and endeavor to imitate his bright example.

The resolutions were adopted unanimously.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, EDITOR.
W. G. P. BRINCKLOE, PUBLISHER.

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VOL. VIII.—NO. 11.

Hints for December.



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 before recommended in these pages.

Most of the tender plants that we desire to preserve over the season, have now been lifted from the borders, are 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.

If any tender bulbs have been left out take them up as soon as possible, and after drying a little put away in a secure place till spring. It used to be the fashion to take up Japan Lilies, but these are now known to be perfectly hardy. It is best however to replant them once a year at this season. Mice are liable to eat them. Try all means to trap and destroy them. The next best thing is to drive them away by means of rags dipped in tar, and buried in the ground here and there.

Hyacinths and other Dutch bulbs have flooded

the country this year, and, being so cheap, every one should have a few. There is nothing pleasanter than spring flowers.

The planting of trees will still continue to engage our attention at every favorable opportunity. Many prefer at this season to remove trees in the winter by the "frozen ball" system. There is nothing gained by this practice. To those unacquainted with this mode of planting, we may as well describe it. Just before frost is expected, a trench is dug around a tree a few feet from its base, leaving the tree so, that with a rope at the top, it can be easily drawn over. A hole is then dug for it in the situation desired. When the "ball" has become frozen through around the tree, it is removed to the prepared hole; and, when a thaw comes, the soil is filled in around it. We have said there is nothing gained by it, and there are many disadvantages. If the tree has been removed a "time or two" before, as most nursery trees have, it will have an abundance of fibres near the stem, and can be successfully removed without much regard to the "ball of earth," either in fall or spring. If it has never been removed before, that is a tree growing naturally, it will have no fibres at its base, and so no "ball of earth" can preserve them; so that a tree which can be moved successfully on this freezing system, can be as successfully done without it. The disadvantages of it are that it exposes the injured roots for a long time to the injurious action of the frost and the elements, besides the frequency of the operation being improperly done by several attempts being made at its completion. We have given the system a fair trial, and have done with it. The main object should be to preserve all the roots possible with the tree, keep them moist and preserve from injury, then go-a-head and don't wait for frost.

FRUIT GARDEN.

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.

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 fruit, except where the one idea of earliness is all important.

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 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.

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 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.

Strawberries are much better when protected through the winter, no matter how "hardy" they may be. Very coarse strawy manure is the best material, which can be raked off in early spring. A few inches is sufficient, just enough to keep the Sun off when frozen, which all our readers know by this time is the chief cause of loss by frost.

HOT AND GREENHOUSES.

PLANTS stored away for the winter in cold pits, require more care for the first month or so than at any other time through the winter season. Many of them have unripened shoots, or shed many of their leaves, and unless these be cut off and removed, gangrene and decay commit distressing havoc. Air should be given at every opportunity, and nothing omitted that will, in any way, tend to harden the plants, and send vegetation to rest. No more water should be given than just sufficient to prevent withering, and the temperature should be kept as near 40° as possible, and every chance taken to render the air about the plants dry. When frost actually does come, no further care than protection from its embraces will then be required. Plants so hardened, may stay covered up for weeks, without any light or air, and secure from the slightest injury. Mice constitute the most troublesome enemy in a pit closed for any length of time; but we have, as yet, found nothing better than the recommendation given in back volumes, namely, to take peas and soak them twenty-four hours in water, then roll in arsenic and sow in a pot, as if in the regular way of seed-sowing. A few pots so prepared, should be placed in the pit before permanently closing up. The mice usually make for these pots at their first entrance to the pits. If placed on the soil, they seem to guess your secret, and will not "bite."

Plants in cellars need much the same care as those in pits. Avoid heat and dampness; frequently however, plants suffer in cellars through getting too dry. They should be looked over, at any rate, once a month, and a little water given, if likely to become entirely dry.

Plants in windows and rooms usually suffer from excessive waterings,—very dry air about them,—too great a heat, or too much shade. As much as possible, room plants should be selected for their indifference to these requirements. Succulents, such as Cactuses, Mesembryanthemums, Rocheas, Crass-

ulas, Aloes, &c., care not how dry the room, but they demand all the sunlight possible. Camellias, Chinese Primroses, Azaleas, *Dicentra spectabilis*, Polyanthus, Violets, Hyacinths, &c., do not mind a little shade; but they abhor a high temperature. Others again, while disliking heat, want light; of these, are Calceolarias, Cinerarias, Geraniums, Pelargoniums, Pansies, Daisies, Tree Carnations, perpetual blooming Pinks, Roses and the like. 'Leaf plants,' for the most part, like a close, moist atmosphere, and a moderate degree of heat to do well. For these, glass partitions and closely-glazed cases are usually employed. A great error in the growth of plants in these cases, is to suppose they require no air. The closeness is to secure a moist atmosphere, not to exclude the air. Whenever, therefore, the temperature is low, and little evaporation going on, the opportunity should be seized to air the cases; a few moments are sufficient. A very pretty plant arrangement may be made in parlors that have bay windows; the whole window may be closed off from the main part of the room by a sash, and filled with plants. Some on the floor,—some on shelves, and some pendant from the roof. A common oil lamp will be quite sufficient, with the usual window shutters, to keep out frost during the night or extra severe weather, while the regular day temperature of the room will suffice for that time. When the lamp is burning, provision should be made for the admission of fresh air from the room at the bottom of the case, and for the exit of consumed air at the top of the case. This is best accomplished by a tube to and from the lamp.

It must, however, be remarked that the fumes of burning gas is highly injurious to vegetation, and any adaptation of heating by it will fail, unless provision be made to lead the fumes away. With this precaution, gas-lights in towns and cities, where it can be had cheaply, would be very useful in heating small parlor plant cabinets.

To those who have larger plant cabinets or small conservatories, connections with heaters or hot water from kitchen ranges will suggest themselves. This is often done. The great error we have often noticed is, that the heat is led to the back only, when it should be continued right to the front or coldest part of the house. When heaters are employed, the oxygen of the air is usually defective, and, besides, the air is very dry and ungenial to healthy vegetation. Evaporating pans around the mouth of the air flues should be used in such cases,—syringing done at frequent intervals, and pure fresh air given whenever a warm out-door spell furnishes the opportunity.

The most critical season to these plants is fast

approaching. A very common error, especially in houses heated by smoke flues, is, to keep the temperature too high. Unless the house be heated by hot water, a temperature of 55° will do perfectly well. The absorbent property of heated bricks, in flues, is so great, that the excessive waterings necessary to replace the moisture they absorb is more injurious to the plants than a moderately low temperature. In a house heated by hot water, a temperature of 65° may be maintained with advantage. The house will be very gay with *Habrothamnus*, *Cestrum*, *Begonias*, *Pentas*, *Plumbagoes*, and so on, and the syringe must be kept in daily requisition. It is highly advantageous to put a little sulphur, lime water, or soft soap into the syringing water occasionally, as the red spider, mealy bug, or scale, respectively, may make their appearance; this, with a vigorous use of one's eyes and fingers at times will keep them pretty well in check. Orchideæ, those of them which bloom on finishing their growths, will begin to add considerably to the attractions of the hot-house. As any come into flower, they should have less water at each time, but be watered more frequently than they have been accustomed to: a very slight "dewing" with the syringe is all that is required. Heavy waterings and high temperature, together, destroy more orchids than many would dream of. Still atmospheric moisture must be retained for them in any case.

Communications.

WHY BOTANISTS AND NURSERYMEN ARE OFTEN CALLED HUMBUGS AND SWINDLERS.

BY A. HUBREZTSE, JR., ROCHESTER N. Y.

It would be well to call the attention of Botanists to the fact, that they are causing a great disturbance in the world by their disagreeing on two important things, viz: Botanical names of plants, and their explanations of them.

In Botanical names we have *Scilla Fraseri* of Linnæus; *Scilla esculenta* of Ker; *Camassia Fraseri* of Torrey; and *Phalangium esculentum* of Nuttall—all names for one plant; of these, Gray adopts the first, in his Manual, and Wood the last, in his Class-Book.

In the next place I notice that we have *Hysanthes gratioloides* of Bentham; *Capraria gratioloides* of Linnæus; *Lindernia dilatata* of Elliott; *L. dilatata attenuata* of Muhlenberg; *L. pyxidaria* of Pursh; and *Gratiola anagalloidea* of Michaux; all these names are given to one plant by those Botanists, and thus they

proceed, every one giving to plants a name to suit himself, so that there is scarcely any plant, but has two or three names.

Professor Gray in his *Mannual of Botany*, derives *Valeriana* from *valere*, to have efficacy; alluding to the medicinal qualities. Mrs Lincoln Phelps, in her *Lectures on Botany*, affirms that it is derived from *Valerias*, who first described it; again, Professor Gray, in his *Manual*, says:—*Gillenia*, dedicated to an obscure botanist or gardener, A. Gille, or Gillenius; while Wood, in his *Class-Book*, says, it is derived from the Greek *gelao*, to laugh, on account of its exhilarating qualities.

In my opinion it is no surprise that so great a number of the people are disgusted with botany and botanists; and that they give the terms swindlers and humbugs to nurserymen, who, being for the most part ignorant of the science of botany, are compelled to use the names given by botanists.

[The evils our correspondent refers to are perceived by none with more regret than by the botanists who commit them. If any call them hard names in consequence, it is owing to the difficulties of the situation not being understood. If a practicable course for avoiding them could be pointed out, they would be generally adopted. If every thing in the world, and all about these men could be placed before them in one view, for names, as they were to Adam, there would be no excuse for error; but unfortunately, the facts have to be discovered one by one, and only by very hard labor.

It is these *after discovered facts* which make all the troubles. For instance:—

A race of plants which always grow in dry places, is well known. Then, one growing in wet places is discovered, and it is perhaps called *palustris*, as a specific mark;—but after this, another is found growing in still wetter places, and it is called, perhaps, “*Hubretzsei*,” and people would think that ought to have been called *palustris* instead of the other.

With regard to errors in the history of plants or in their nomenclature, all that can be done is to follow that writer as an authority who has been proved to make fewest mistakes, and whose authority those of his compeers who have studied deeply also, are willing to follow. Even he—fallible man—will make mistakes; but what other course can be taken?

In the cases cited, most of the authors named are of no authority with the highest scientific minds. Dr. Asa Gray's writings are deemed the most reliable, although he himself has to retrace his steps whenever the progress of science may show him to be wrong.

In short, Botanical Science is imperfect, and we have either to take it with its imperfections until we can do better, or have none at all.—E.D.]

SULPHUR IN GRAPEHOUSES.

BY C. N., NEWARK, N. J.

I see in the *Monthly* of August last, an article by Mr. James Thompson, on the Grape-houses of Mr. Resor, without sulphur. Richard Miller, gardener to Wm. Faitout, Esq., Washington Street, Newark, has grown superior Grapes under glass for five years past and without sulphur.

He, (Mr. Miller,) grows Grapes to perfection. I saw two Black Hamburg clusters weighed:—No. 1 was five pounds and a half, No. 2 was four pounds and a half. Who excels? let them say.

Mr. Thompson says don't make your grape houses too steep. In this latitude a lean-to grape-house with the roof at the angle of 30° or 32° answers very well. Is this about what Mr. Thompson would recommend?

Mr. Miller's mode of growing grapes under glass is the reverse of those who do not recommend front air. He prefers a constant circulation of fresh air in his grape-house. Even on rainy days he has air in his grape house, when other gardeners have all shut up, courting mildew and other diseases.

COOK'S FAVORITE, TILDEN AND THE MONUMENTAL TOMATO COMPARED—HUMBUGS.—LATAKIA (TURKISH) TOBACCO—TRELLISES.

BY ROBERT SINCLAIR, BALTIMORE, MD.

I purchased, last season, of a seed merchant in your city, two packets, containing less than a quarter of an ounce of Cook's Favorite and Tilden Tomato Seed, for which I paid fifty cents. I was tempted to make the purchase by seeing the figures and high praise accorded to those *new* productions. All three kinds were manured and cultivated alike. I find no material difference between Cook's Favorite and the Tilden. Neither produced more fruit than sixty to the vine, and averaged about thirty-five. The largest were all shapen and ribbed similar to the original Tomato; the medium and small were round and smooth; the former full two inches in diameter, and the latter size of a lime.

The Monumental (called so merely for distinction) produced an average of one hundred and twenty on a vine, and with a rare exception, all round and smooth. The size, shape and run of the crop may be compared to Newtown Pippin, Winesap and Pomme de Neige, (Apples.) As regards cooking qualities and solidity, there is no material difference.

If any of your planters can give the Tilden or Cook's Favorite a better reputation, under ordinary cultivation and management, than I have, let them report.

All those named were neither trellised nor the buds stopped. Doubtless the Tomato can be greatly improved in form, size and product, by a judicious selection of seeds, stopping certain buds, trellising, and high culture. I expect to plant the Monumental, next year, exclusively, except a small patch of the Pear-shaped for making Tomato figs.

Cannot some plan be devised to put a stop to vegetable and fruit humbugging? It puts money in the hands of a set of unprincipled men to the serious cost and disappointment of the cultivator.

I have about five hundred plants of the Latakia Tobacco, introduced by Bayard Taylor, Esq., from Mount Lebanon. It is a superb Tobacco, as far as appearance is concerned, and is now nearly ready for the curing process. I hope, by the last of October, to test its smoking qualities. As regards topping and suckering it requires more labor and time than any variety of Tobacco that I have seen or cultivated.

A very simple and cheap trellis, suitable for the Tomato and other vines, may be made with iron, or elastic wood in hoops, stretched on two stakes, two and a half feet apart, with a stretcher between the stakes to hold the hoops in place, and to draw them to an oval shape, similar to the common carriage spring, five hoops, or an odd number. I prefer the first growth trained inside of the hoops, entwining as they advance, the tops being also on the inside of the fifth hoop. By thus entwining the vines may be separated, and no ties requisite. For garden culture the stakes and hoops should be painted white, to give a pleasing variety of colors—red, white and green.

[The experience of cultivators on any variety, favorable or unfavorable, is always very welcome to us,—but our correspondent would not surely imply that because one's experience is different from that of others, therefore, those who disagree with us are "unprincipled men." There are people who think the wild Fox Grape the perfection of flavor. If we recommend the Catawba to them, and they do not like it, are we, therefore humbugs and swindlers? Our magazine has taken a prominent position in exposing the worthlessness of many things offered, but we must guard ourselves against the injustice of an opposite extreme.—ED.]

GRAFTING GRAPE VINES.

BY C. N., NEWARK, N. J.

I see Mr. Merrick, Walpole, Mass., enquires about grafting grape vines. Mr. Miller, of this place, has a grape-vine he engrafted two years ago, last June, and has not less than twenty pounds of fruit on it at this time, and which is worth seeing.

Cut your grafts in the fall, put them in a cellar or any place they will keep fresh until wanted. If one has a grape house, the eyes of the vines begin to swell in the first week in April; by the last of May or the first week in June the vines will be in full leaf; then is the time to engraft, as they will not bleed. Then head down the vine you want to engraft and perform the operation the same as on Apple or Pear. This is the whole secret.

NOTE ON MR. PRINCE'S LIST OF STRAWBERRIES.

BY THOMAS CAVANAGH, BROOKLYN, N. Y.

I noticed, in the September No. of your valuable paper, a communication from Mr. Prince, of Flushing, Long Island, on the best varieties of Strawberries, for the market and so forth. Ten of the number are his own seedlings, which he had in cultivation for several years, and which, according to my experience, are not of superior excellence. I agree with Mr. Prince that a complete revolution in Strawberries is called for, when such varieties are recommended as Globose Scarlet, Welcome, Princess Royal and Prince Imperial. We have tried the majority of these Long Island seedlings for some years, but discarded them all.

I should like better to have Mr. Prince's views on the popular varieties now before the public; such, for instance, as, Russell, Wilson, Brooklyn Scarlet, Triomphe de Gand, McAvoy, (or as it is improperly called Buffalo Seedling,) Monitor, Ida, Lady Finger, New Jersey Scarlet, which, with me, are all really good market varieties.

Your remarks on worthless seedlings are to the point, and we hope our reliable nurserymen will make a note of them when about sending out their new seedlings.

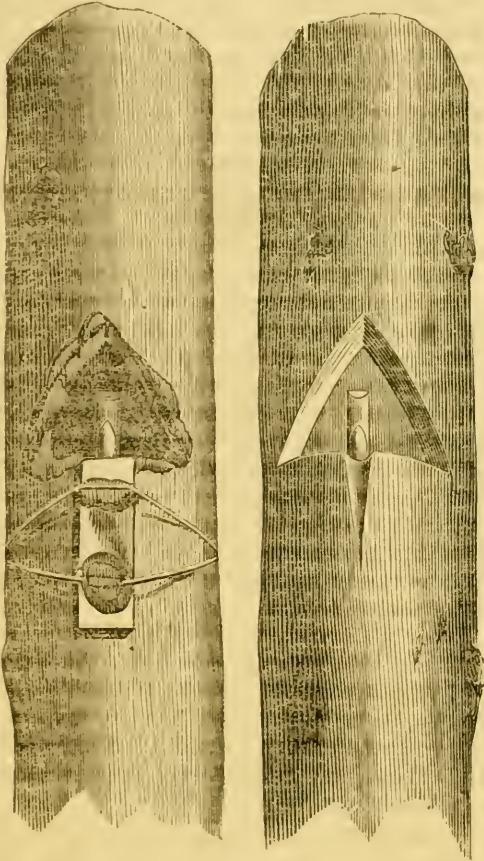
[This note of Mr. Cavanagh's proves what we have repeatedly contended for—that the different localities and the differing modes of culture of different cultivators make it very difficult to arrive at a conclusion, as to what is the best Strawberry. Mr. C.'s experience, at Brooklyn, is very different from Mr. Prince's, at Flushing, but the observations of both have this much value:—that they indicate what is or is not esteemed in their respective localities.—ED.]

SPRING BUDDING.

BY DR. LOUIS JACK.

In our last we gave a plan of spring budding, by Dr. Louis Jack. The idea is novel, ingenious, and will be of great value to fruit growers.

We have had the following illustration made, and, in order that it may be properly understood, reprint that portion of the article which describes the process:



"We will suppose a long and exhausted Pear limb, comparatively denuded of branches; such an one we so commonly see. The first preparation will be to remove one-third of the length; and if it is desired to change the variety, two grafts will be placed in the cut end; then, at several places along the course of both sides, the dead outer bark should be scraped away; a triangular incision is now made at the points selected, extending down to the wood; it should be of considerable size, varying with the diameter of the limb, and be finished by removing the bark included in the incision. The object of

the removal of the piece of bark is, to enable the insertion to be introduced beneath the thick bark, and to check the flow of sap as the part for the benefit of the bud. In branches of four (4) inches diameter the triangle should be one and one-half ($1\frac{1}{2}$) inches at the base.

The preparation of the insertion is made by taking a scion, cut from well matured wood of the previous year's growth, which need not be removed more than a few days before wanted; it must have been kept cool and fresh, and the buds be plump but unstarted. The knife should be entered at the side opposite the selected bud, about one-half ($\frac{1}{2}$) inch above, and so directed as to split the scion in the middle for the greater part, covering one inch or more below the bud, and on the same side with it; after the removal of a very small part of the outer bark at each side of the insertion it will be ready for introduction.

A slit is now made from the base of the triangular cut downwards, to enable the bark to be slightly raised; the insertion is next pressed down so as to bring the bud exactly to the base of the triangle. Grafting wax is now laid upon the incision last made, and all the cut parts completely covered by the wax; when a piece of wood, the size of an ordinary label, is laid over the last cut and bound down tightly upon it by a wrapping of twine, securely tied, so as to counteract the disposition of the bark to curl away from the insertion, which tendency is universal.— Indeed, so important is this tying, that success cannot be expected if it is omitted.

THE MUSCAT HAMBURG GRAPE.

BY R. BUIST, ROSEDALE, PHILADELPHIA.

This very delicious new variety is the greatest acquisition that we have had for many years amongst the foreign sorts. It is the color of the Black Hamburg; berries more oval; bunches 12 inches long, and 9 wide, when well grown. In Muscat flavor equal to the Muscat of Alexandria. Grows freely, and sets well in either a cold or forcing grapery, and is two weeks earlier than the latter, and equally as early as the Hamburg.

Foliage deeply serrated, and the lobes deeply divided, having more the appearance of a Muscat leaf than a Hamburg; the eyes, also, appear more of the Muscat, being smooth and not downy like the Hamburg. With the plant before you, or in a collection, you can readily distinguish it from all others. There is no grapery, however small, but should possess a plant of this estimable sort, having every combination of the finest of the fine.

HEAT & MOISTURE IN PLANT-HOUSES.

BY J. C. JOHNSON, SCARBORO', N. Y.

The article under this heading in the December number, last year, of the *Monthly*, has set me thinking whether an experiment now under progress may not occasion mischief in my plant-house.

Last year I set a few pots on shelves directly over the hot pipes, plunging them in leaves about half their depth. I soon perceived that the plants in these pots thrived better than those not plunged. It seemed as if the roots made haste to find their way through the hole into the leaves where a growth ensued, different in character to that inside the pots. The leaves retained, immediately under the pots, a certain amount of moisture in which the small rootlets appeared to revel, and with the increasing decay of the leaves an increasing luxuriance of plant became apparent. The appearance of these leaves is certainly not ornamental, but I concluded to overlook that. I arranged the whole of my plants on that substratum.

In syringing and watering the surface of the leaves it of course wet more or less, and the moisture is retained on those shelves and stages beneath which there was no heat. I am afraid that this extra moisture may so reduce the temperature as to occasion damage during severe frosts. Your article states that "a regularly moist atmosphere has a baneful influence on growing plants." I must remark that a dry atmosphere does not agree so well with a miscellaneous collection of plants, as one that is moist. Provided there is a sufficiency of ventilation, the moisture is favorable to healthy vegetation. That is my experience. And towards Spring when the sun becomes powerful, the benefit derived from the leaves is remarkable. I continued the experiment throughout the Summer months, and proved to my extreme satisfaction that the most delicate plants will grow and thrive under glass, apparently indifferent to the most severe extreme of heat from the sun's rays whilst plunged in leaves half their depth. Indeed, the plants experimented with proved better than the same kinds plunged out of doors, and in the shade. Watering from a rose after sun down was all the attention bestowed.

I noticed that Fuchsias, Tree Carnations, Primulas, Geraniums, Cinerarias especially Roses, thrive better upon the leaves than standing back upon the stages or shelves. I should be loath to banish the leaves, only the fear of a considerably decreased temperature during severe frost would induce me to do so.

[When we said a regularly moist atmosphere had a baneful influence on vegetation, we meant, as

the context of the article showed, an atmosphere *moist to saturation*, and in which there was no change from a moist to a dryer condition. The ventilation our correspondent refers to is just what breaks up this *regular* condition, and makes it irregular, that is, dry and moist by turns,—and proves our argument, that when we ventilate it is not so much that we are letting fresh air in, as it is that we are permitting moist air to go out. The formula would be this:—there can be no growth without evaporation,—(there is no *growth* in a Wardian case), therefore, when by ventilating we produce evaporation, we favor growth.

A *certain degree of* moisture in the air is essential to plant growth.—ED.]

HISTORICAL NOTES ON THE BARTLETT PEAR.

BY THE EDITOR.

The origin of the Pear we call the Bartlett was once wrapped in mystery. Up to about fifty years ago it was considered an American seedling,—but as the original tree could not be found, an impression began to prevail that they must be imported trees, and the late Mr. Robert Manning investigated the matter and came to the conclusion that the trees had been imported from England, and that the variety was the *Williams' Bon Chretien*.

It is very evident that Mr. Manning was one of the most careful and painstaking of American Pomologists,—but it is unfortunately the fact that in matters of history, what is evidence to one mind is not to another, and so much that have been received by the most careful historians as truths, have afterwards been found to be errors,—that we have long since come to the conclusion that there is no statement of history so sacred as to be above investigation.

The *Williams' Bon Chretien* and the Bartlett are most probably identical, but we propose to offer a few suggestions on the suspicious facts of its history.

The resemblance between foreign fruits and native ones is often so great as to mislead the most careful observers, and he who observes the *circumstances* of a fact will often learn more than he who depends on "eye witnesses." The Delaware Grape is an instance of this. When we took charge of this journal we found the opinion almost universal that this variety was of foreign origin; and to such an extent had this notion prevailed that Mr. Prince and many others had identified it with the Red Risling, just as conclusively as Mr. Manning, with

the aid, as we believe, of Mr. Prince, identified the Bartlett with the Williams' Bon Chretien Pear. We were not acquainted with the Red Risling; but from our experience with the colors and forms of wild Grapes, some of which we had seen so exactly like Delaware in all but its exquisite flavor, we boldly took the ground of its native origin from these circumstances alone.

Our readers will remember the somewhat acrimonious attacks made on us, especially by Dr. Grant's agents and many others for the position we assumed,—but who is there now who regards the Delaware as a foreign Grape?

Notwithstanding that those who have an English acquaintance with Bartlett would, at first sight, take Bartlett for the B. Chretien, another careful comparison as in the Risling and Delaware Grapes, might show a difference,—and there certainly are some differences between its English & American characters.

In England its outline is rather panduræform or fiddleshaped than pyriform. Then the quality of the Bartlett is far superior to any Williams' Bon Chretien ever grown in Europe any where, and the time of ripening is, as Prince says, just succeeding the English Jargonelle. He must have followed some English author in this, however, for Bartlett does not succeed E. Jargonelle in Pennsylvania by nearly three weeks, nor, we believe, does it any where in the United States.

These differences are recognized, but it is said the climate accounts for them.

But the analogy of all kind of fruits is the reverse of this. As regards quality, almost all European Apples and Pears deteriorate when brought here; some of them are found to do well in some special localities as well as in their own countries,—but none of them better. The Red Astrachan Apple is probably the nearest parallel to such a case as this supposed one of the Bartlett. It does well *generally*, but no where any better than where it came from. We have heard of the Concord Grape doing better south than at its native place, and we have believed it,—but we have recently ate as good Concord Grapes raised at Boston as we have ever had from any where, and we are now satisfied that that idea has no foundation in fact. That the Williams' Bon Chretien on the other hand should be a comparatively inferior fruit in England, France, Holland, Belgium, everywhere in Europe,—and yet when introduced into this continent, everywhere so superior, from Canada to Florida, and from the Atlantic to the Pacific, is more improbable than to believe that no such person as General Washington ever existed. Now let us look at dates and figures.

It is said that a Captain Brewer, master of a ship trading between Boston and England, brought over two Williams' Bon Chretien trees in 1799, and planted them in his garden at Dorchester. This property afterwards passed into the Bartlett family, who finding the Pears good, distributed them under the name of Bartlett; they and all others considering it a seedling, and calling it the Bartlett,—but as observing pomologists could not but notice they were grafted trees, another origin had to be accounted for, and then it was for the first time discovered that the trees had been imported from England a quarter of a century before.

Now the writer has been a gardener. He knows how gardeners change and remove trees when the employers can know nothing of it, from one part of the ground to another, for the tree's benefit,—how they get grafts from neighbors and brother gardeners, and stick them in in all sorts of places of which the employer is ignorant, especially if he be a seafaring man and a general rover, and perhaps indifferent about garden matters at home, though he may bring over a few trees when the humor strikes him,—and we cannot but feel that this discovery, after some twenty-five years of forgetfulness, may possibly be a mistaken one for all; and a visit we recently paid to the trees, by the kind favor of our good friend Col. Wilder, gives some color to the suspicion. There is at least ten years of difference in the ages of the two trees,—they could not have been brought over together. One was evidently grafted where it grows, and on a sucker. They are grafted about four or five feet from the ground, which is a German practice, and was rarely, we think we may say never practiced in a London nursery. All strong probabilities that the plants never came from England as supposed.

Now let us look at dates.

The Williams' Bon Chretien appears to have sprung up in the garden of a Mr. Wheeler, a schoolmaster at Aldermaston, in Berkshire,—some writer whom Loudon has followed, and our authors copied say, in 1770. But this is most probably an error,—for the fruit was not much known in England till 1810. In 1816 it was first exhibited before the London Horticultural Society, which, however, had not long been in existence; but it is evident, from the reports of the Society, that the leading members had little knowledge of it, and at the instigation of Mr. Sabine, the Secretary, Sir W. Hooker undertook to examine into its origin, and he reported that it originated "twenty years before," in Mr. Wheeler's garden, which would be 1796. If Mr. Bartlett's predecessor received the trees from Eng-

land in 1799, the grafts must have been taken from the original tree when it was but a seedling of *a year old*, if Sir William Hooker's account is of any value. Sir William (then Mr. Hooker) might, however, have spoken "in round numbers," as he probably did, seeing that fruit was known, as we note below in 1807,—but no doubt with this allowance, meaning a few years of the mark. He would not have said 20 if he meant 30. That Hooker's account is nearly correct is corroborated by the fact that Forsyth, in his first work on fruits, published in 1802, makes no mention whatever of the Williams' Bon Chretien, though he is careful to bring up all varieties of consequence to the time he writes; in which of his numerous editions he first introduces it we do not know, as we have only the first edition; but we take it, if it was an article so well known as to be cultivated for sale in a London nursery in 1798, Forsyth would have known something of it in 1802. McDonald in his excellent "History of Practical Gardening," published in 1807, is the first writer in our collection who notices it, and he speaks of it only by reputation. He calls it "Williams' Seedling, resembling a Summer Bon Chretien, and which Mr. Forsyth says will be a valuable acquisition to market gardeners, because of its immediately succeeding the Windsor Pear." Is it likely, under all these circumstances, this Pear was introduced into America in 1799?

We think not. We think there is a chance that the Bartlett is an American Seedling Pear, so much perhaps like Williams' Bon Chretien, that as in the case of Risling and Delaware Grape, would favor a belief in their identity. The original trees may have stood on grounds built over and the locality destroyed before Mr. Manning commenced his investigation, and these grafted trees be the sole survivors,—at any rate there seems to be reason for some doubts; and in the absence of direct means of comparison we publish our suspicions that the subject may be investigated, and if it should turn out that the Bartlett is really an American Pear after all, those who think native fruits best adapted to native soils, will thank us for the hint.

"BIG TREES."

BY A. FENDLER, ALLENTON, MISSOURI.

As the subject of "Big Trees" seems not to be without interest to the horticulturist, I give you the following account of a remarkable tree I met with in my wanderings through Venezuela, South America:—

In travelling from La Victoria, a small town in

the province of Aragua, towards Puerto-Cabello the road leads, in part, along the northern shore of the beautiful lake of Valencia, situated in a longitudinal valley nearly 1500 feet above the level of the sea. This valley is of unsurpassed fertility, and Humboldt, the great traveller, calls it one of the most charming realms he has ever seen in all his travels. And, indeed, he has not said too much in favor of this delightful region, which with regard to climate, productiveness of soil, and smiling scenery, approaches, as near as can be, in this complaining world of ours, the ideal image of an earthly paradise.

In the middle of the road above mentioned, three miles west of Turmero, stands the famous 'Zamang,' an enormous tree, belonging to the suborder Cæsalpinea. It is not so much on account of the height or the dimensions of the *trunk* for which this tree is celebrated; but it is the size, and especially the horizontal diameter of its *head*, that attracts our attention and fills us with astonishment.

Its head is somewhat of the shape of an opened umbrella and covers very nearly an acre of ground. In 1857 I measured the head in its greatest diameter from E. S. E. to W. N. W., most carefully, and found it to be 206 feet 11 inches. Fifty years preceding it was found by Humboldt to measure in its greatest diameter 192 feet French measure, which is equal to about 204 feet 6 inches English. Hence we see that this extraordinary tree has, within fifty-seven years increased the horizontal diameter of its head only by two feet six inches, from which we may infer that it is of a good old age. The natives assert, moreover, that as far back as the discovery of the country by the Spaniards, three and a half centuries ago, the "Zamang" was, even at that early day, reputed for its enormous size. At the time I saw it, it was but thinly covered with leaves, and seemed to lack vigor of growth. The natives hold it in high veneration, and it was against the law to break even the smallest twig from it.

In looking at a big tree like this we cannot help reflecting on the toughness of its fibers, for its principal branches stand out over one hundred feet on either side of the trunk, in a nearly horizontal position, free in the air without any natural or artificial props. Besides their own enormous weight these branches sustain the additional weight of an astonishing mass of succulent heavy epiphytes and parasites, such as Bromeliads, Orchides, Cacti, Mistletoes and fleshy Piperaceae.

The fact that these branches, reaching out horizontally a hundred feet from the point of attach-

ment, can for centuries withstand the continual pull downward of the combined gravitating force of the whole earth, may well set the philosopher a thinking about the nature of that wonderful force of *life* that joined atoms into fibres and fibres into branches and forced the ultimate particles of matter against their own innate affinities to cohere to each other in a *new* order of combination, and in this new state protects the structure it reared against dissolution from the powerful and persevering attacks of atmospheric agencies.

Oxygen in connection with heat and moisture is constantly and with fiendish pertinacity at work to tear down and destroy whatever the force of *life* builds up, that is, all organic bodies, whether animal or vegetable. It cannot succeed, however, as long as the living force is sufficiently active and energetic within these bodies. But the moment the influence of life over its body is gone the chemical forces are left masters of the battle field, and the atoms of the most beautiful and perfect organic structures are generally the first and fleetest to follow their powerful sway.

To be sure, by properly protecting the dead wood, branches, and even leaves and fruit against heat, air and moisture, their cohesion may be kept up for an indefinite period; but leave them exposed to the same influences they were exposed to while part of the live tree, and sooner or later the connection of their particles will be dissolved, and the atoms go from whence they came, to the soil and the atmosphere.

COAL TAR A PREVENTIVE FOR THE STRIPED BUG.

BY C. N. DOANE, JAMAICA, L. I., N. Y.

After years of experiment, and having tried with only partial success all the prescribed remedies, I have at length hit on a method to prevent the ravages of the striped bug on Cucumber, Squash and Melon vines. It is simply bits of paper dipped in coal tar and laid on the ground close to the vines.

As good a way as any would be to take the leaves from some worthless book (I used a Patent Office Report) and dipping them in the tar, lay two or three pieces close to the plants, then with the foot draw a little earth on the clean end of the paper to prevent them blowing away, and the work is completed.

The plan is a perfect success.

The first attack was made on a hill of Water-melons, and before the papers had been on the ground twenty seconds, I counted as many bugs fly

away from the hill, and on more than one hundred hills of vines in my garden, I have not seen a bug from the moment I applied the tar to the present time.

Now this remedy may be known to many, but it is *new* to me, and at the risk of repeating a twice told tale, I send you the result of my experience, hoping that others, who have not tried this plan, may be assisted in their efforts to banish from their gardens that destructive pest, the striped bug.

ASMART FOR FODDER.

BY R. SINCLAIR, BALTIMORE, MD.

Can you or any of the subscribers to the *Monthly* inform me relative to the value of the weed vulgarly called Asmart or Smart Weed, (*Polygonum persicaria*). It is very prolific, springs up spontaneously and is ready for cutting about the 20th of September. It throws out numerous red branches, and is about four feet in height, bears a profusion of small, red flowers, or rather a clump of oblong heads. A friend told me a few days since that it acts as a tonic and alterative. My horses eat it with as much avidity as the best timothy hay. I intend curing about three tons for my horses. I planted, last Spring by way of experiment, twenty pounds of the tall Multiflora sun flower, I find it makes an excellent green fodder for horses and mules; horned cattle refuse it.

The product of green fodder, seed and stalks I rate at eight tons per acre (stalks spreading 4 by 5 feet, one in a hill). Next year I expect to plant it more extensively, and in a few hills will plant Lima Beans, the former about the first of April and the beans tenth of May. As the bean vines advance the leaves and branches of the Sun-flower will be removed, leaving only the main flower, which, when reached by the vines, will be cut off with the tops of the vines, thus stopping the vines at the proper time, causing the pods to fill early and increase in product. Both crops are gross feeders, and requires liberal manuring and entivation.

The Sun-flower, like the Smart Weed, is an alterative and must be fed with caution, especially in cold weather.

BEDDING GERANIUMS.

BY J. M., PHILADELPHIA.

The Geranium, from the disregard of most of its varieties, to the heat of our Summer's sun, has superseded to a great extent the use of other plants for Summer decoration of our flower beds. Various as has been the plants, new and old, used for that

purpose, it is perhaps, as yet, surpassed by none for effect.

The attention that has lately been paid to the raising of seedlings, as well as the production of good formed petals, has given us such a diversity of glowing colors, leaves and habits, as to fill amongst themselves every requirement for garden decoration. We have amongst them the veriest dwarfs of six inches growth in a season, and intermediate sizes to the giant of five feet or more. I know of no other flower, the Verbena excepted, that will give a continuous bloom of flowers throughout the season, with such satisfaction.

The season just ended has given me an opportunity to note the differences in a collection of about fifty, most of them being of the newer kinds, or standard sorts of an older date. I propose to divide them, in my descriptions, into two divisions. 1st from dwarfs to medium size, 2d from medium to the largest, naming the best only of the collection referred to. The reader will understand the letter *h* after the name as signifying Horse-shoe leaf, the others are green foliage without the zone.

DWARFS TO MEDIUM.

1. Clara—Pink self, excellent dwarf bedder.
2. Lady Rokebey—Flowers of a deep brick red, size medium,
3. Rosamond, *h*—Rosy salmon, white edge, one of the very best.
4. Christine—fine pink, light centre; very dwarf.
5. Boule de Feu—Deep scarlet, very like the old Tom Thumb.
6. Stella—Vivid scarlet, immense trusses of flowers, will compete as a bedder with any other I have seen; it belongs to the Nosegay section.
7. Lallah, *h*—Dark bronze, outer margin of white; first-class.
8. Beaute de Suresne, *h*—Rosy pink, light centre, very thick flower stalks; petals of good form, and large.
9. Hector, *h*—This might be described as a vivid cherry or salmon cherry; it is one of the best of its color I have ever met with.
10. Helen Lindsay—As the above is the best of the cherry, so this I rank as the best pink, white centre, it is far superior to Christine.
11. General Scott, *h*—This is a salmon pink, with a beautiful leaf; it approaches, in color, the well known "Col. Harcourt;" size medium.
12. Tom Thumb—Scarlet, still one of the best, its leaves will be a little spotted when exposed to the full sun.

MEDIUM TO LARGEST SIZE.

1. Chance—Fine scarlet, very round, green, woolly leaves.

2. Really Good, *h*—A really good orange scarlet, white eye.

3. Cecilia, *h*—Darker scarlet than the previous very clear white centre.

4. Miranda—Beautiful thick petaled, scarlet orange.

5. Lanata—Dark cherry, noble truss, fine leaf; good.

6. Countess de Guido—Rose centre, bright white margin, distinct.

7. Madame Vaucher—White, slight pink, tinge before decay.

8. President King—Bright vermilion, distinct.

9. Harkaway—The deepest orange of any; profuse bloomer, small green leaves.

10. Emperor of the French, *h*—Brilliant scarlet; a first-class flower.

11. Col. Harcourt—Salmon, large, prominent flower stalks.

12. General Grant—Scarlet; a first-class flower.

Amongst the newer kinds of which I had formed "great expectations" was "Lord Palmerston," a cherry scarlet in the Nosegay class, it proved to be entirely worthless with me; losing almost all its leaves in August, and was such a lamentable failure, that I took the whole of them up at once, and potted them, having found it admirable in partial shade, though useless as a bedder in the sun. The above selection are all good bedders, and would give general satisfaction, in regard to variety.

It will be seen that the list embraces some of the latest European additions, the majority of them are of European raising, a few of the number are American seedlings, and are very fine.

The variegated sorts I have omitted, as I have not succeeded well with them as out-door plants, such as the above list is intended to be.

BLACK KNOT ONCE MORE.

BY C. V. RILEY, CHICAGO, ILLINOIS.

It appears that there never will be an agreement upon this vexed subject of Black Knot. I have read with interest the individual views advanced of late in your columns; but the last, by L. Mowry, has induced me to send you these lines.

I merely take an entomological view of the matter, having often cut open these knots in search of insects. I have seen them entirely free of insects, and again in others have found different species, but never found any gall makers. From these facts and without having given the matter very serious thought, I had concluded that Black Knot was of vegetable origin, and have lately been con-

firmed in this opinion by an article from the pen of Mr. Walsh, in the *Practical Entomologist* for March; the writer having found, from late experience and experiment, that the Black Knot was an Epiphytal fungus, growing on the Plum tree, as other such fungi are known to grow on other substances, and that it increases by throwing out, annually, about the beginning of August, all over its surface, little cylindrical filaments, one-eighth of an inch long, which bear the spores by which such substances usually multiply.

Mr. Mowry says he is satisfied that the cause of the disease in his locality is a small white maggot or grub, about the form and size of those found in de cative cheese, the head tipped with brown, and when put under a magnifying glass, having the appearance of the white grub found in decaying wood. There are so many white grubs that live in decaying wood that it is difficult to conjecture which is meant, but from the above description of the maggot, from its being identical with those found by Mr. M. in his Plums, I know it to be nothing but the larva of our common curculio, *Rhynchœnus nenuphar*, and I also know that from its nature it is incapable of causing the swelling, as man is of causing a pair of wings to grow from his shoulders. The female curculio, by instinct, pierces out Plums, as orchardists know to their sorrow, and deposits therein an egg. That same instinct leads her at times to deposit the egg in the Black Knot, where the maggot that issues from it finds nourishment enough to develop and perfect itself. Thus, the curculio instead of causing Black Knot merely takes advantage of its being there as do many other insects.

[We showed some years ago, in our magazine, that the Black Knot *could not be* caused by small insects, and was, most probably, of fungoid origin.

The subsequent researches of others has shown that it is of this nature, and we regard it as a settled fact that it is so.

If it is thought proper to discuss the matter further, we suggest to our correspondents that the arguments must be from the opposite side,—that is not to show that the knot is caused by an insect,—but that it is not of fungoid origin.

In the mean time we advise all who wish to cultivate Plums or Cherries, to act as if the disease was of fungoid origin, whether they feel full confidence in the theory or not.

That action should consist in cutting away all "knotty" parts as soon as they appear, and burn the knots. This will prevent the fungus maturing spores from those places at any rate, and thus

check its reproduction. Also, persuade one's neighbors to cut away and burn any they may have on their trees.

Also, remember that one of the most important discoveries of modern gardening is that healthy trees with healthy roots will become impregnated with spores of fungi, which may generate from unhealthy matter in the ground about the roots. Therefore, much may be done by digging away unwholesome soil from about the trees, and replacing with new,—or, if the trees are not very large, transplanting them altogether to other parts of one's ground.

We are much obliged to our correspondent for the able manner in which he presents the fungoid theory,—and are sure our readers will profit by it. —ED.]

UNFRUITFUL BLOSSOMS ON PEAR TREES

BY DR. J. S. HOUGHTON, PHILADELPHIA.

The remarks which have been made upon the question which I raised as to the cause of the unfruitfulness of certain Pear trees, which blossom "all over," every year, and yet bear little fruit, leave the matter just where they found it.

It is really curious how opinions in horticultural matters may be combatted. The most perfect theories that can be got up, on almost any point, may be knocked down by a few facts, and plenty of facts can be collected to sustain almost any plausible theory. Here are some instances in point:—

From time immemorial almost, it has been argued that Melons, Cucumbers, Peaches, &c., under glass, needed the aid of bees and insects to help set their fruit. Indeed, so far has the aid of bees been thought necessary to assist in the impregnation of blossoms, that some gardeners have put "pots of bees," as one writer calls them, in orchardhouses to assist in setting the flowers. But here comes a wise man who has discovered that this practice is all wrong, and that the bees do more harm than good. Hear him. The extract is from an English journal:—

"*Bees and Fruit Setting.*—One of your correspondents advocates the employment of bees for the purpose of fertilizing the blossoms of Peach and Nectarine trees in early houses. Convinced that, in such houses, bees do much more harm than good, I carefully shut them out as much as possible. In the month of March, when the trees are in blossom, there is not a single flower out of doors which will yield them a mouthful of food; and it is extraordinary how, in a fine day, they will discover where Peaches are in flower under glass, and

how they will gain admission. When they appear, as they frequently do, in numbers, it will be found that they eat up the pollen as fast as it is set free, and that so completely that little or none will be found upon the stigmas. All the good they could do would be to scatter the pollen, a benefit which is much more effectually and safely secured by the 'stout stick' recommended by Mr. Rivers.—*An Amateur and Microscopist.*"

To keep the house dry while Peaches, Grapes and other fruits are in flower, has ever been one of the cardinal principles of hothouse culture.

But in a late English journal I find a writer who argues, with no little force, that it is dangerous to keep the blossoms very dry, and that it is really better to *wet* them a little in a dry time. This is the argument. It is somewhat lengthy, but it is worth reading:—

"*Setting of Peaches and Nectarines.*—The Rev. W. F. Radclyffe states 'that if the blossoms of these are kept dry (and dry they must be kept) they will often fall and refuse to set, unless the trees are watered at the stumps.' Doubtless, if the trees are dry, watering at the roots while they are in flower is a good and safe practice; but *I very much doubt the necessity of keeping the blossoms dry.* No doubt a dry atmosphere is favorable to the ripening and dispersion of pollen. But this is of secondary importance to the vigor and health of the pistil. The former is too often secured at the expense of the latter, and the crop is sacrificed in consequence. This catastrophe is as often as not the result of excessive drought. Looking at the delicacy of the organs concerned in attaching the embryo fruit to the tree, it is obvious that a genial, and occasionally a moist atmosphere would be much more likely to strengthen them than a dry one. And if the whole attention of the cultivator is given to secure the most favorable condition for the development of pollen, is it any wonder that the other sex droops and dies in consequence? That they do so is a matter that I have proved over and over again by actual observation. Out of doors I have long observed that stone-fruit sets best in genial showery weather. It is chiefly in those seasons when the dry winds of March intrude so far into April as to last through most of the blooming period, that failures occur. These failures often happen when there has been no cold severe enough to injure the blossoms. The stamens are perfectly matured, pollen is dispersed in showers, but the stigma is withered with excessive drought, and a crop becomes impossible. It was such facts that made me sceptical of the use of a dry atmosphere for setting

stone-fruits. It then occurred to me that such dryness was unnatural. In no country are the blossoms of trees kept dry during the ticklish process of setting. Supposing the Peach, for instance, to be a native of the genial climate of Persia, and that no rain might fall when it was in bloom, what about the semi-tropical dews? Certainly this, that as a Scotch mist is reported 'to wet an Englishman to the skin,' so a tropical dew is equal to an April shower. Presuming that Nature's method at home and abroad could not be far wrong, and observing, moreover, that she was eminently successful, I began many years ago copying her example in this matter. Hence, instead of the dry I adopted a moderately moist regimen, with the best possible results. During a continuance of dull weather little or no moisture will be required for Peaches, &c., in bloom; but on every other evening of bright days send a shower of diamond dust from a skillfully used syringe right over and on to all your trees, blossoms and all, and they will show their appreciation of your skill by setting all the surer in consequence. I do not recommend ordinary syringing; that might be too heavy, and would batter the pistils, perhaps injure the stamens, and at least too rudely disperse the pollen; but with one finger or thumb over the single opening of the syringe a gentle shower, as like dew as possible, is easily produced. And such a shower strengthens every part of the pistil, and is highly favorable to that development and fixing of ovary which we, for want of a better name, call 'setting.' Neither does it at all injure the stamens, nor hinder the maturation of the pollen. Even the check which the presence of the moisture in the air places upon the diffusion of the pollen seems useful, for it is not always the most volatile pollen that is the most effective. That most readily dispersed to a distance often fails in performing its legitimate functions at home. Frequently whole showers of dry pollen may fall from the trees, and the stigmas remain untouched. A certain amount of moisture seems needful to enable the stigma to retain the pollen. This is generated and deposited by the action of vegetable life; but a dry atmosphere licks or dries up this natural provision for insuring perfect fructification; all which are additional reasons against keeping blossoms dry, as a means of setting fruit. Neither is it quite certain that Mr. Radclyffe's crop was insured altogether by the root-watering. It is possible that the trees were helped to set by the evaporation of the water from the earth into the air. They had been kept very dry, be it observed, without setting: therefore dryness

alone will not set fruit. They were watered abundantly, and they set "as if by enchantment." Now, unless the trees were in pots they could hardly be dry at the root, for there is scarcely any drain upon the trees until after the fruit is set. Hence it is quite possible that a large portion of the abundant water which found its way into the air, was, perhaps sensibly as dew, or insensibly as vapor, deposited on the organs concerned in fructification, and thus by virtual overhead watering insured a crop.

Be that as it may, I confidently advise frequent dustings of water over all stone-fruits in blossom, as I have prescribed, as one of the likeliest means of insuring a thoroughly good crop. I have done it for years, and have never failed but once, and that season it was not done, as not a gleam of sunshine gladdened the trees during the whole six weeks they remained in blossom, and watering was out of the question."—*Censor*:

Now, if the blossoms on my Pear trees don't set fruit, perhaps the bees eat up the pollen, or perhaps there were no bees there to set the fruit; or perhaps the season was too dry, or too wet, and the blossoms failed from these causes. Who knows? Furthermore, I learn that birds frequently eat the vital germs out of Pear buds before they open, and cantharides devour the embryo fruits after they begin to form. Then the Codling moth, that destructive "worm i'the bud," is almost always present at the inception of every Pear, and causes thousands of young fruits to drop prematurely. Really the theories, facts and opinions are thick as Blackberries in Jersey.

But seriously, there is still something mysterious in the fact that many Pear trees, which to all appearance are well furnished with fruit buds, and which blossom most profusely, yet set little or no fruit. My idea is, that the blossoms are imperfect. But I am getting shy of theories in horticulture. Even facts and figures seem to pervert the truth sometimes, or they may be used to pervert it. Let us have more light on the cause of unfruitful blossoms on Pear trees. I hope our botanical microscopes will be applied to this subject next Spring.

P. S.—An observing friend suggests that humming birds, spiders and cat-birds feed upon fruit buds and blossoms. The external causes of injury appear to be very numerous, in addition to frosts.

[Most of the differences in opinion our correspondent refers to in the extracts arise from one party not having an accurate sense of the meaning or intended meaning of the terms employed by the other party. For instance, in the quoted remarks of "Censor" against Mr. Radclyffe, they each are arguing about

different things. Radclyffe says in effect "keep the house dry enough to ripen and disperse the pollen,"—and the other says, "but not dry enough to wither the stigma or embryo fruit." Both are right.

In like manner about bees in a forcinghouse: one may be right as a *general theory*, that insects are useful in setting the fruit; and yet it may be true that *occasionally* they may be "more plague than profit."

Our correspondent's suggestion about examining the flowers of these unfruitful blossoms is the proper one. We have in horticultural theories too many *opinions*, and not enough *observers*. We have no doubt now that the subject has been so strongly brought before the public, some of our friends, *with the flowers actually before them*, will be able to furnish a theory of practical value.—ED.]

BLUE FLOWERS.

BY WALTER ELDER, PHILADELPHIA.

Much has been written and said about the impossibility of getting a Camellia, Dahlia, Pæonia and Rose to bear blooms of blue. We think it a wise ordination that withholds *blue bonnets* from those Queens of the four seasons, as they would make the *bonnie breast knots*, of very numerous genera, look too diminutive,—and they look gorgeous and majestic enough without.

The number of species and varieties that bear blooms of blue is immense, and some of them are in bloom all the year round, (with the aid of a greenhouse.)

In the open ground Crocuses and Violets introduce both light and dark blue blooms in March, and China Asters carry them out in November.

The sizes, forms and shades of blooms are so various, that every genus has a peculiarity in that respect:—those of Aconitum are like hoods; Asters the form of buttons; Agapanthus like umbels; Campanulas like bells; Convolvulus like funnels; Delphiniums have spurs; Browallia, Nemophilla, Nigella, Periwinkle, Tradescantia, have flat, shilling-shaped blooms of bright azure blue; Iris has beau knots; Crocus has cups; Hoveya and Kennedyya have pea-formed blooms of indigo blue; Anagallis cœrula, Myosotis and Lobelia have small florets of blue; Wisteria and Justicia have clear, sky-blue blooms.

The following genera, with their species and varieties, will each furnish blooms of blue six months in the year, in open ground:—Aster, Campanula, Delphinium, Lobelia, Viola, Verbena, Veronica, &c., and the following Climbing Plants will afford a

bloom of blue for six months in the year, out-doors: *Convolvulus major*, *Ipomea*, *Maurandia Barclayana*, *Clematis*, *Wisteria*, &c.; and what odors more sweet than *Heliotropium*, *Hyacinth*, *Levendula*, *Mezereon* and *Viola*, whose blooms are all blue. Here are a few common plants with the names they are most generally known by, that bloom in the different months of the year, beginning with the "hardy kinds:" March—*Crocus*, *Violet*, *Daphne mezereon*; April—those of March, and *Hyacinth*, *Grape Hyacinth*, *Iris*, *Rocket Larkspur*, *Anemone*, *Hepatica*, *Periwinkle*, &c.; May—all of April except *Crocus*, and *Mezereon*, *Pansy*, *Campanula*, *Monkshood*, *Perennial Larkspur*, *Lobelia*, *Blue Bottle*, *Plumbago Larpentæ*, *Tradescantia virginica*, *Forget-me-not*, *Verbena*, *Canterbury bells*, *Clematis azurea*, *Wisteria sinensis*, *Groves Love*, &c.; June—many of those of May with *Lavender*, *Heliotrope*, *Browallia elata*, *Branching Larkspur*, *Wisteria frutescens*, *Clematis alpina and lanuginosa*, &c.; July—all those of June, with *Asters*, *Campanulas*, *Centaureas*, *Veronica*, *Blue Sweet Pea*, *Blue Lupins*, *Blue Anagallis*, *Ipomea*, *Morning glory*, *Maurandia Barclayana*, &c.; August, September and October—nearly all those of July; November—*A ters*, *Larkspurs*, *Lobelias*, *Veronica*, *Verbenas*; In the Greenhouse—December and January—*Lobelia*, *Veronica*, *Heliotrope*; February and March—*Blue Crocus*, *Blue Hyacinth*, *Cineraria*, *Sweet Violet*, *Blue Justicia*, &c., April and May—*Hoveya Celsi*, *Kennedyia monophylla*, *Wisteria*, *Gloxinia*, *Agapanthus umbellatus*, *Campanula*, &c.,

Those in Italics are Climbing vines, generally known.

In clothing an arbor, trellis and veranda, or decking a small bed, a garden or a park, we should always set out, to give grace to the scenery, a good number of plants that will yield blooms of blue. A combination of colors, harmoniously blended, enhances the beauty of all that we do.

PLUM KNOT—ANOTHER VIEW.

BY ISAAC HICKS, NORTH HEMPSTEAD, N. Y.

There is nothing in Nature's kingdom more strange and will better reward investigation than the vegetable parasite we call the fungus. Their name is innumerable, and their presence nearly everywhere.

The most common is known as mould and mildew, found on all damp and decaying substances; others abound in animals and living plants. The rust of the cereal grains, mildew of the corn, and the black knot and many other excrescences of plants and trees are the work of this powerful agent. It covers the Gooseberry as with a mantle; grasps the rind of the Apple and Pear and causes them to crack; attacks the leaves of the Grape-vine, the Melon and Pumpkin, and crumbles them to powder. A mighty enemy it is wherever moisture and heat are favorable to its growth and development.

But a word about the black knot of the Plum trees.

It is evident there are several of the fungus that attacks fruit trees. There is one peculiar to the Wild Cherry, one to the common Cherry, such as the Morello and Duke class, and one that belongs to the Plum. Each variety of trees mentioned has

its peculiar type of fungus, as much as different species of animals and insects have that only parasite which preys on them. About forty years ago the black knot swept off all of a kind of bitter-sweet Cherry that was quite common here, the name I do not know. About seven years ago the fungus attacked the Cherry trees to the west of this place, in Kings County, Long Island, especially the Kentish and Early Richmond, and nearly killed them all. It gradually spread to this place, moving eastward, and attacked the trees on the west side of the orchard first. All efforts, by burning and cutting, proved unavailing, for being propagated by minute spores, they spread from my neighbor's trees, and hence our single efforts were unavailing. They now appear to be clear from this pest such as were not killed, and perhaps this generation will not be troubled again.

The Plum fungus has its periods of increasing, in certain places, to a great extent, and again being nearly extinct. We may state that the Plum knot did not prevail here at the time of the Cherry tree disaster, nor did the Wild Cherry knot show any thing of an increased abundance. The spores of the Cherry tree fungus find more resistance or rather the bark of certain kinds do not allow them to lodge and grow on some varieties as well as others, as the Morello class were sadly knotted, while the Mazzard was entirely free, and Elton, Downer's Late, Honey, &c., were nearly or quite free.

Now, we believe and argue that the kind of fungus that destroyed the bitter Cherry forty years ago could not be the same as the present fungus on the Cherry, or else it would have also attacked the Kentish and others then. And if the Plum knot is not caused by a different fungus from the Wild Cherry why does one prevail on one kind of tree at a certain period and the other is free from it. That insects are found in the excrescences is not much more a conclusive argument that they were the cause, than that if an ignorant person should find an Apple with the worm of the Codling moth in it he should think the worm was the cause of the growth of the Apple.

Few studies or variety of useful reading would repay the perusal of the farmer and horticulturist better than the physiology of vegetables and the habits of insects. There we can read of the wonderful works of the Creator and nothing will be found more curious and more worthy of the study than the tribe of vegetable life called the fungus.

None would doubt then what was the cause of the Plum knot, or believe that the larva of the curculio and other insects found in them placed there may be six months after the knot commenced its growth under the bark did the mischief.

[We have already handed a communication of similar import to this to the printer,—but are glad to have one more of the same sort, as we wish particularly to impress on our readers the vast importance of studying the fungus question in connection with fruit diseases.

A clear recognition of this fruitful source of evil would institute plenty of "Yankee inventions" to overcome the trouble, of this we are quite sure.—Ed.]

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PHILOSOPHY OF POTATO ROOTS.

Gardening treats of that which sustains the body, pleases the eye and ministers to the palate,—but not by any means the least of its pleasures consists in the mental exercise it affords, and which no other science, art or pursuit can furnish so well.

To illustrate with a Potato. In its relation to agriculture, the Potato has decided the fate of nations. England while thinly populated was ruled by what we would call a protective tariff, as one most calculated to fill up a country with population. Under this system, manufacturing and population increased until the country became so densely inhabited that it produced more goods than its agriculturists could buy, and the agriculturists could not supply food enough for so many manufacturers,—so the far-seeing ones understood that the time was come when a radical change must be made in the national policy. English goods must go abroad, and foreign food must be imported. But the love of the past is always a sacred love; and no effort of man could make the change. At length the Potato murrain came. The little food was reduced still less, and free trade became at once a necessity to the English people.

But what we wanted to say, particularly, in this article was, that the Potato tuber affords the mind one of the best illustrations of a modern discovery in vegetation, namely that almost all forms of plants are but *modifications of one general plan*, on which the whole of them seems founded. We will compare the Potato with the Blackberry, and show that the plan of each is exactly the same.

In the Spring of the year the Blackberry is a bud under the soil. It pushes up and makes a stem. While under the ground it pushes out what we call runners, which terminate in strong buds, and have numerous weaker ones along their length for several inches, or it may be a foot or more. The connecting part between the buds and the stem dies in time, and the end buds form plants which are left to form separate existences. A few buds may be

left at the base of the canes, which form separate existences without runners,—but, strictly speaking, after flowering, the whole plant, root and branch dies; and the scaly end of the runners or suckers, which become a little thickened or tuberous, have to sustain the chief burden of the plant's reproduction.

The plan of the Potato is precisely the same. In the Spring the bud shoots up a stem to bear the flowers and fruit-balls, and the under-ground suckers push out to make separate existences. They are first scaly thickened points, just as in the Blackberry. After they are perfected, and the plant flowers, it dies, root and branch, just as the Blackberry does in time, and leaves these runners or suckers to form new and independent plants.

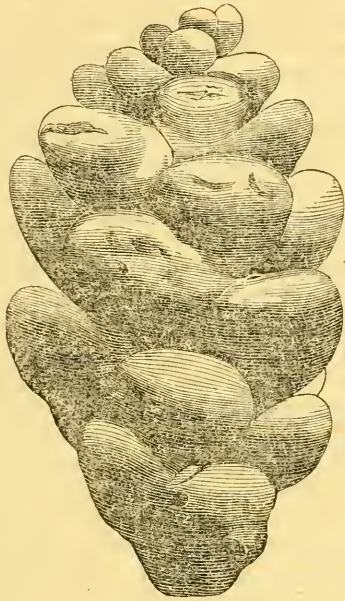
The plan of both is exactly the same. The modification only that the stem of the Blackberry lives a little longer than the stem of the Potato,—while the Potato has somewhat thicker points (tubers) than the Blackberry has.

There is in animal nature a certain force which we call *will*, which makes the organization do pretty much as it pleases and yet within certain bounds, which seems to act uniformly in each separate class of organism,—and yet there are certain circumstances from the exterior which seem to produce *motives* which react on this interior force, that it is often difficult to decide which is leading. The same plan seems to rule in plants. There is an internal force which causes them to develop in a certain way,—and there are external influences which seem to often decide for the plant how and in what way it shall go; but there are times when development seem so capricious that we cannot decide whether it is the internal force or outward circumstances that make the change.

We have had a good opportunity to observe this in the Potato this year. A lot of Potatoes sent out runners in the usual way, but the ends instead of being arrested by the internal force in the usual and necessary way to produce tubers, sent up green stems and shoots exactly as in the Blackberry or Raspberry. Other Potato plants of the same kind were near, apparently under like conditions, which produced proper tubers; and the only explanation was that the inner or tuber producing force was not strong enough to assist growth sufficiently to effect their object.

These are some varieties of the Potato, which possess this power in so slight a degree that they exert little force in arresting growth and thus forming tubers. These tubers are very little more than thickened, scaly, under-ground runners.

We give annexed a sketch of the *Pine Cone Potato*, which is a variety such as we have referred



to. A white and larger variety has been long known in Europe,—this one was grown in Massachusetts.

This is the transitional grade between the Blackberry form of the same plan and the regular thick tuberous form which we commonly know as "the Potato."

The whole study of development is a singularly beautiful, interesting and instructive one,—and no one who has a garden or flowers on however small a scale, but would find the pleasure of gardening considerably enhanced by its pursuit.

RAISING SEEDS.

Very little is known of this subject. The generally received theories of the process are unsatisfactory. For instance, we say Peach seed to germinate well must be frosted; or else, if not frosted they must be cracked before planting. A Southern friend recently remarked to us that freezing must be unnecessary,—“for,” said he, “we have no frost; yet stones put in the ground in Fall always come up in the Spring without any trouble.”

For our own part we have no doubt but that freezing is often an injury to many seeds. Perhaps it is not the frost, but rather the circumstances under which seeds are frozen, that do the injury,

just the same as we find it in vegetation generally. A Potato will often live through the Winter entirely uninjured in the ground, provided it is four inches deep under the surface, no matter how severely it may be frozen,—but at 1 or 2 inches it has not the shadow of a chance for its life. So with some Evergreens well known to be hardy under severe temperature when shaded, but which exposed to the Winter's sun when frozen will not resist comparatively low temperatures.

Thus we suppose that absolute frost is no injury to seeds, but successive freezings and thawings evidently are; and this is more apparent with thin skinned, fleshy seeds than with harder ones, as we should naturally suppose it to be, if the theory we start with be correct.

Every seed raiser knows the difficulty of getting any thing from a sowing of Parias, Horse Chestnuts or Acorns, if the season be very severe, or the beds be in the full sun in the open ground,—and yet in the woods where the seeds fall, and are nearly entirely on the surface uncovered, every one not taken by mice or squirrels, invariably grows. But last season we saw a peck of English Acorns taken from a tree and planted immediately in an open spot in the garden. In the Spring only one grew. The bed was examined and the Acorns found about one to two inches under the surface to be brown and partially decayed. The one which grew had got, by some means, full four inches under ground. If these Acorns had been sown on the surface and then covered with some light, non-conducting material, which would have prevented alternate freezing and thawing, there is no doubt every seed would have grown.

We saw another very remarkable case last year. A nurseryman got a piece of ground ready for Mazzard Cherry stones in October, and left orders for his man to set them. There were a few left over from the preceding year in sand in a shed, of which the proprietor knew nothing, but which the man understood were to be sown; when these were half planted the error was discovered, and, supposing the old stones to be worthless the new ones were sown in with them, and the balance of the old ones thrown away on the manure heap. The stones sowed were lightly covered, and by Spring many were drawn, by the thawing, to the surface,—but not one new or old grew, while the manure heap in June when we saw it, was completely covered with young Cherries from the old seed thrown there.

We have said that burying deep prevented the changes of temperature from injuring the seed,—but it must not be forgotten that deep burial is op-

posed to germination. Many seeds 4 to 6 inches under the surface would either rot away in a short time or stay many years without growing. Seeds must be near the air to sprout, and therefore the shade and protection necessary to secure regularity of temperature must be supplied by artificial means. We had a very singular illustration of the necessity of shallow planting of seeds the past season. The writer received some seeds of *Chilopsis linearis* from the Colorado last year. Anxious to raise this beautiful American tree, we sowed and tended it personally. The seeds were barely covered but none of them showed any signs of growing until one night drip came on, and made a narrow channel all through the centre of the pot, uncovered the seeds in its path, all of which grew and none other but these exposed ones. Many would have said it was the rain water, but as all in the pot was saturated, it could only have been the uncovering.

The lesson is clear. To grow seeds well, they must have air and moisture in regular amounts,—and the only way to secure this is to sow on the surface to secure the air; and to cover the surface after sowing with some thin non-conductor, which will preserve a regularity of moisture and temperature.

BOSTON HORTICULTURE.

We had no thought of leaving home so late in the season when our gardening operations demanded all our attention,—but the invitation from our Boston friends, and especially from Hon. M. P. Wilder, to come on during their exhibition and see what they were doing, was so pressing, and yet so kind, that without great violence to our feelings, we could not decline; and we are glad we went,—not alone for the pleasure we experienced in meeting so many good friends of horticulture, and in receiving everywhere so warm and cordial a welcome, but for the many interesting facts and thoughts we collected together, which will serve to interest our readers for many months to come. As our first call in Boston was on Mr. Wilder we will first say a few words on what we found there.

Mr. Wilder himself we found hale and hearty,—and though now near his seventieth year, as full of zeal and energy in behalf of horticulture and all the kindred arts and sciences, that have tended so much to the eminence of his town and State, and to the prosperity of the whole Union, as he must have been from his record forty years or more ago. Everywhere in Boston we found institutions and public works with which his name was honorably

connected, and while we were there Gov. Bullock, in a public address, said that Mr. Wilder's name would be inseparably connected with the history of the State as one who had devoted a long life, and a large fortune amassed in one of the most prominent business firms in Boston, and successfully devoted them to the interest of horticulture and agriculture in the State and in the Union. It is a history to be proud of, and our sincere wish is that it may yet be continued for as many years as the best of his friends dare to hope for.

To our readers Mr. Wilder is best known as a Pomologist. One of the founders, in fact, of the National Pomological Society, and for many years past its re-elected President. It would, therefore, be supposed that his garden would show much of his love of fruit culture,—and so it was. The Pear particularly occupying the post of honor. One part of the grounds was an experimental Pear garden, in which was gathered nearly all the known kinds of Europe and America, and are added as they appear all the new ones of note. This plan enables the proprietor to keep up his knowledge of varieties so essential to the successful pomologist,—while he really loses little should any variety prove unsuited to his climate, as these are all regrafted with kinds which have proved worthy, and in a couple or three years produce as many fruit as if the original variety had remained. Mr. Wilder accelerates this by using very strong and very long grafts. Some of the scions used last year we saw were over a foot long, and had made shoots of remarkable strength and vigor of five and six feet in length. Another part of his grounds was devoted to the purposes of the Pear orchard proper, namely, *fruit* for the sake of fruit,—and these found the benefit of the experimental garden, for when any kind gave out, as by cracking, blight or other unexplained cause, as some varieties at times will, they are at once regrafted with new kinds from the experimental grounds that have proved themselves worthy of the honor. The best and most profitable Pears here seemed to us to be *Beurre d'Anjou* and *Bartlett*,—but it was very evident that the generally prevalent idea that there are “not more than a dozen Pears out of all the list worthy of general culture” is not a correct one. Some Pears are liable to accidents some seasons that others are not,—and these again, in their season, suffer when the others go free. Then again the differences of taste, of climate, of soil, of season, of maturity and of uses are so various that the man who depends on a large, but yet carefully selected list, does not do very wrong. One of the prettiest sights in the

orchard was a Buffum Pear tree. The habit, as is well known, is very erect when young,—but this, which had been some years in bearing, had beautifully arched branches, and no more than it wanted. It is evidently a mistake to thin out a Buffum too much when young. It will want all its branches when the fruiting age comes on.

The vineyard was particularly interesting to us, from the fact that the fruit was generally about ripe, —and with all the leading popular varieties together afforded an opportunity of testing the comparative merits of many disputed kinds.

The neighborhood of Boston is evidently more favorable to the Grape than with us, for we saw Sweetwaters very healthy, and filled with mature and good fruit, in the garden of the Misses Bartletts, in Dorchester; so that the fact of a Grape doing well here will be no rule that it will do well everywhere. There are peculiarities of climate and soil that affect the vital principle, and when the vital principle is weakened fruit may not ripen, no matter in what part of the world the plant may be growing.

A feature of Col. Wilder's vineyard was the Rogers' Hybrids. The fact that these varieties are real hybrids, and not accidental variations of the wild Fox Grape is now generally conceded,—but were there yet any doubters, a visit to this vineyard would satisfy them. The vines do not look like the class of Fox Grapes, nor have they the appearance of foreign varieties. The "mulish" mixture is apparent, sometimes a "feature" of each parent will be strongly prominent. No. 2, for instance, has bunches weighing *one pound*, precisely in appearance like Black Hamburg, and similar in quality,—so much so that we have heard of persons "not particular" who have made up deficiency of weight with these, without any one noticing the addition; this is rather a late Grape. No. 3 is the earliest of the lot, *quite equal to Catawba* in quality, which, as the Catawba is too late for Boston season is high praise. No. 4 was another variety with about pound bunches, ripening however late. No. 1 ripens late, but with enormous bunches and berries, comparing in this respect with Cannon Hall Muscats. No. 9 is so much like Delaware in appearance and quality that small berries gathered from each and mixed together are used to confound those with whom a Rose by another name does not smell as sweet. Those who think the Rogers' Grapes very poor eating, smack their lips over No. 9, when supposing they are eating Delawares. No. 15 is well known and esteemed, but to us here it seemed rather sharp. No. 19 is another large

Black somewhat well known,—but here though good, not equal to what we have had before. No. 22 is a fine bronze colored one, with a Diana flavor exactly. No. 28 very large bunch, dark brown color of berry, with sweet, tender pulp. No. 30 is one with large bronze berries of a peculiar winey flavor and a first-class Grape. No. 33 is one of the earliest, but not equal to others in some points. No. 39 excites admiration for size, but was rather too pulpy. No. 44 was very much like Concord in bunch, but the berry like Black Hamburg in quality,—but has the remarkable property of getting better after gathering. It keeps easily a month, and is then, Mr. Wilder informed us, very superior in quality. We have repeatedly given accounts of these Grapes to our readers, but the opportunity to make comparative notes of old vines, and so many together, had not been afforded us before, and will be interesting.

Col. Wilder's collection of Camellias was once the finest in the United States—and indeed, for that matter, is not much behind the best yet,—some magnificent specimens of double white, Imbricate, Floyii and double white, which, years ago, were purchased for several hundred dollars each, were yet in perfect health and vigor. Here also where the two originals of "Abbey Wilder" and "Wilderi," yet two of the best known Camellias.

It is an interesting circumstance connected with these two plants, that when they were young seedlings, quite young, Mr. Wilder had a very large number of such plants with which he was experimenting when his houses burned down. These two were the only ones saved from the conflagration; and it is remarkable that the only ones saved should have been two such fine ones, when usually so many hundreds have to be raised to get one good thing amongst all.

Col. Wilder is fortunate in having the services of Mr. Dillon as gardener, in whom seems to be united good management, industrial habits and courteous and gentlemanly instincts, which make gardening a pleasure to both employer and employed.

Mr. Wilder's collection of Japan Lilies were in splendid condition. Large number of seedlings of all shades between pure white and dark crimson, showed that they would vary from seed as much as the Gladiolus.

We have some interesting recollections of Mr. Hovey's Nursery, the Cambridge Botanic Garden, Captain Austen's Fruit Garden and the Horticultural Exhibition, which we will write out for future numbers.

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.

THUJA JAPONICA—*West Philadelphia*.—"Will you please inform a subscriber of your *Monthly* the correct name of the enclosed piece of Arborvitæ. It came from Washington named Japan Arborvitæ, it is an open spiral growth, and appears to be dwarf but handsome; broad base, open and conical. The marking on the back is peculiar.

[We have never been able to get any seed vessels of this plant, without which it is not possible to name unknown Coniferæ,—this one is believed to be a Retinospora. If any of our readers should get plants to bear seed vessels we should be glad of a specimen.]

ROSES ON MANETTI STOCKS—An "*Anxious Inquirer*," *New Haven, Conn.*, writes:—"I am making a selection of Roses for training on the rafters of a greenhouse, and also for pot and for garden culture.

"I find much difference of opinion as to the utility of culture on the *Manetti Stock*, particularly for greenhouse climbers. Mr. Saul, of Washington, in articles in your magazine, appears strongly in favor of it. Mr. Parkman in his '*Book of Roses*,' p. 73, (the latest authority) says, '*many kinds of Roses budded on the Manetti stock will grow with a vigor and bloom and a splendor which they do not reach on their own roots; some Roses, however, will not grow well on the Manetti stock, others can scarcely be grown in any other way. The finest Cloth of Gold, Lamark, Gloire de Dijon, Lord Raglan and Souvenir de Malmaison I have seen, were planted in the free soil of a greenhouse, and I was assured, by the gardener, they were all on Manetti, but I was not quite sure of his accuracy.*'

"Can you inform the readers of the *Monthly* what is the experience of the best growers, and what Roses are found to be best on Manetti, referring to *established plants* and not the mere facility of rooting?"

[For general garden purposes we have not thought the advantages of the Manetti stock counterbalanced by its disadvantages. But there is no question but that Roses will grow stronger and bloom finer on it than on their own roots.

We should be very glad if Mr. Saul or Mr. Park-

man would give us a list of kinds they have found to be particularly improved by using this stock.]

HISTORY OF THE BARTLETT PEAR.—Since the remarks in another column have been set up, we have a note from Mr. Barry in reply to some inquiries we made, from which we make an extract. Mr. Barry's reference to the Clapp's Favorite suggests how near one variety may be like another in every respect and yet be different. As we have said the Bartlett and W.s' B. Chretien are possibly the same, but the historical circumstances are curious:

"Many years ago we imported Pear trees largely from England and France. The Bartletts always came from England under the name of 'Williams' Bon Chretien,' and from France as 'Williams,' and we have now growing in our specimen grounds part of a row of Bartletts that were imported from England.

"It never occurred to us to look for any difference and we never observed any. The Bartlett varies a good deal in form even on the same tree. Some have a much more strongly defined neck than others, some are almost without a neck, tapering quite regularly from the eye to the stalk. I think Kenrick was the first American author who described it.

"In his edition of 1833 it is classed among the new Pears. It is said to have been imported in 1799, 29 years after it originated. It was noticed in 1816 by the London Horticultural Society.

"I think there is but one Pear for the two names.

"There are a great many which bear, in tree and fruit, a family resemblance to it, none so strongly as Clapp's Favorite. The edition of Manning, which I have is Ives, of 1844. In it the Williams' Bon Chretien is given as a frontispiece and the Bartlett is given as a Syn. Every author in Europe and America I think make them identical."

ADVERTISEMENT OF LEE & SHEPARD.—In regard to a "questionable" advertisement of this firm in relation to Baker's Book, we desire to say that if any reference is intended to the *Gardener's Monthly*, the insinuations are entirely without foundation. As the facts could not possibly warrant them in intending the public to suppose they referred to us, we should not feel justified in suspecting their aim; but when they advertise in circulars, as we have seen they do, that Mr. Wilder assisted in the work, and when the book itself asserts that he had nothing to do with it, as every horticulturist knows now he had not, we have reason to feel uncertain as to the real intention of this advertisement.

THE "PARLOR GARDENER," NOT "FLOWERS FOR THE PARLOR AND GARDEN."—Excuse us for calling attention to your notice of "Garden Flowers" in last month's magazine, you say by the author of "The Parlor Gardener" when it should be "Flowers for the Parlor and Garden," an entirely different work although both are published by us.

We have in press a new book by Mr. Rand on the Culture of Hardy and Tender Bulbs and Tubers, it will be published early in October, when we will be glad to send you a copy.

J. E. TILTON & Co., Boston, Mass.

NAME OF APPLES—*L. K., Iowa City.*—Of your four Apples the only one we are certain of is No. 1, Chenango Strawberry. Not feeling sure of the others we handed them to three different experts in Apple knowledge,—they all differ from each other and from us in their opinion. so we hesitate to name them. Perhaps they are local seedlings.

"A. BORNEMAN & Co."—We continue to receive letters in reference to this "firm" confirming what former correspondents have said to us, that "mistakes" of this concern have been more numerous than agreeable to them. On the other hand no one has written to us that they are doing a legitimate business. We wish to injure no man, but it is our duty to protect the public from imposters. If any one, on whom we can rely, have any thing to say in their favor we shall be glad to have it.

A GRAPE FROM CATAWISSA—*F. F. M., Catawissa, Pa.*—"I send you a few bunches of a native seedling from a vine five years old, I took from it seventy-five bunches, such as I send you, yesterday. It colors with Creveling though not ripe as early, is as hardy as Hartford, and holds its fruit finely."

[These were as sweet as the sweetest Grapes we ever ate,—but we suppose the strong aroma which would be a recommendation with some, would be against the variety with those of a more cultivated class.]

GRAPE STEMS OUTSIDE THE VINERY—*Amateur, Detroit, Mich.*—"I have a span roofed greenhouse thirty feet long, eight feet wide. I think of planting some vines, as the leaves will help to shade the plants in Summer, as well as yield some fruit; but the hotwater pipes are too near the front and back wall to allow me to plant them inside. Do you think they would do well to plant them outside and bring the vines in through a hole in the front

wall just under the sash. In Winter I could cover the border up level with the top of the hole with leaves, stable manure, &c., so as to keep frost out of the roots and bottom of stem."

[Many have their stems in this way, and some even prefer them so. The stems can be boxed up in Winter to protect them from frost, taking care to wrap them first in tarred paper to keep mice from gnawing them.]

THE LAST SEASON IN SOUTH CAROLINA—*A Correspondent at Chester, S. C.,* writes:—"The past Summer has been one of the driest I have experienced for fourteen years in South Carolina, not enough rain to wet the ground two inches deep, from the 20th of May to the last week in September; and even now (October 9th) the ground is so dry that it is impossible to dig or do any thing."

GRAPES FROM T. T. SOUTHWICK, DANSVILLE.—"I send by mail a box of Grapes. They are of a seedling from the Delaware. Two hundred and fifty seeds of the Delaware were planted, and the vine that bore this fruit was the product.

"The vine is nearly as thrifty as the Concord, leaves like the Delaware, only larger; it is about as prolific as the Concord; ripens same time as Delaware. Is planted on common soil and manured.

"I send you two bunches, they are not selected, but just the common average. I want your opinion on them. Are they worthy?"

"The far greater thrift of the vine, and its prolificness, and almost equal quality with the Delaware, seems to me to render it worthy of trial.

"I shall be pleased to hear your opinion."

[These are exactly like Delaware in the form of the bunch, even to the little shoulder. The color is dark cinnamon brown, and the berries rather larger. They have a strong native odor, but not at all disagreeable,—no more so than Concord,—and if they have the strong growth of this variety we think will be a good introduction to our list of hardy Grapes.]

THE BOTANIC GARDEN AT ST. LOUIS.—Extract from a private letter from Mr. Shaw:—"Our Botanical Garden looks well; have not yet commenced the new plant houses, material and glass being so high in price. We had fine Pine-apples and the largest kind of Muscat of Alexandria Grapes, which, undoubtedly, are the best of all when well grown and ripened. The fruit of the *Philodendron pertusum* is large and fine flavor, but takes two seasons to ripen. For the decoration of the flower

borders we have had the double and improved Portulaceas, Petunias, Zinnias. The variegated Japan Maize lasts but a short time, the variegated *Arundo donax* is more durable and ornamental for fine foliage. The Cannas and *Wigandia* have a good effect. An improved *Bignonia*, probably a hardy hybrid of the Chinese *B. grandiflora*, is much admired. Your *Glycine magnifica* is so nearly like what we previously had, as to be scarcely perceptible.

The experimental Fruit Garden has not produced successful results in Plums and Cherries, neither soil (a strong calcareous loam) or climate is here suited for them. The wild Plums are well flavored, and may be improved, and are the only ones to be depended on. Of Grapes we have all the usual kinds; Catawba and Concord appear the most productive, and may be depended on as a crop for wine; we have tile drained the Grape borders, and lay down the stems and cover over in Winter. Pears are very productive; Duchesse d'Angouleme, Belle Lucrative, Beurre Diel and Bonne Louise are the finest here. As usual we are much troubled with blight. Our best Strawberries are *Triomphe de Gand* and *Russell's Prolific*, which bear abundantly and of full size. Figs under a ten foot wall and laid down in winter, produce well late in the season. Brunswick and Brown Smyrna are the surest. The Arboretum progresses finely. The *Quercetum* will soon be a grove of oaks, and the *Pinetum* is divided into compartments by gravel walks. We have nearly all the Pines that will grow here, *P. Banksii* and *P. Australis*, and a few more pungens and tæda are wanting."

NATIVE FERNS—*J. F., Dayton, Ohio.*—"Can you let your readers know where they can procure our native Ferns, *Lygodium palmatum*, a climbing Fern, and the *Schizæa*?"

[The *Schizæa* grows sparingly about twenty miles from Philadelphia, at Quaker Bridge, New Jersey. The *Lygodium* we have seen abundantly at Brown's Mills, near Mount Holly, New Jersey. Probably William Southwood, Sixth Street near Market, Philadelphia, could get them.]

GRAPES IN CENTRAL NEW YORK—*J. M.*, says, and we hope he will do it:—"If it will be agreeable I will, some future time, give you a description of what they are doing on the borders of our lake in growing Grapes."

FINE GRAPES FROM MIFFLIN, PA.—*G., Mifflin, Pa.*—"I sent you to-day, per express, one box

containing two bunches of Grapes taken from a vine in my garden. The vine was planted out one year ago last March, two years old when planted, bought of Mr. Knox, of Pittsburg, for a Delaware. The product of the vine being so greatly at variance with all the published descriptions of Delaware that I would like to know what it really is.

"On the 5th of August I noticed my bunches commencing to rot, cut off twenty-one bunches weighing thirteen pounds and three-quarters, not a bunch less than eight inches in length, most of them between ten and eleven inches of Grapes *not stems*. Berries from five-eighths to seven-eighths of an inch in diameter (measured by rule and compass). Applied flour of sulphur and saved the balance as per sample."

[This is the Grape we noticed in our last as from Lewistown, and which came by express *two weeks* before the letter by mail. We then supposed it was the Brinckle, and this note confirms it.]

SOWING PLUM PITS—*J. M. M.*, says.—"I am, to-day, sowing my Plum pits in drills one inch and half deep, eighteen inches apart, intend covering the ground with fine manure. I have, heretofore, mixed my pits with moist sand, put them in boxes and then buried box and pits under the earth, and let them lay until Spring with good results. Is there any better plan?"

RIPPAWAN STRAWBERRY—*P. B. Mead* says:—"In your September No. Mr. Prince, in correcting Mr. Carpenter, has fallen into a slight mistake himself, which I will take the trouble to correct. The 'Strawberry Show of the American Institute' was held last June a year ago. The committee of judges consisted of Charles Downing, Prof. Huntsman and myself. A prize was offered for the two heaviest berries, and was awarded to the Rippawan. The prize being simply for *weight*, the quality of the fruit was not tested."

[We have also a note from Mr. Prince acknowledging his mistake, through not understanding that "a year ago" was meant. He supposed last year was referred to, which he knew must be wrong.]

NAMES OF PLANTS—*E. K. Pepar.*—1. Do not remember the leaf, we may find its name if you send a flower and a piece of the shoot. 2. *Agave Virginica*; we should like seeds or a plant of this. 3. Send a piece in flower. 4. *Tillæa Muscosa*. 5. *Adiantum curvatum*. 6. *Camptosorus Rhizophyllus*.

MOUNTAIN ASH SEED—*J. M. M.*, asks:—"Will some one, who has had the experience, give their mode of washing and saving Mountain Ash seed?"

OBITUARY.

DEATHS OF PHILADELPHIA HORTICULTURISTS.

During the past month death has made sad inroads amongst our home-circle of Horticultural friends. First *M. W. Baldwin*, scarcely above three score, and one of the most magnificent patrons of gardening Philadelphia has ever had. His country place on the Delaware excelled in every branch of gardening, and of late years many of the charms of our exhibitions have been owing to his liberality, and the skill of his excellent gardener, *Mr. Joyce*.

Isaac B. Baxter, as an amateur fruit grower, has a reputation all over the United States. His fondness for his chosen part was only equalled by his great success. His garden occupied nearly a square of most valuable grounds in the city, but no money could buy it from him, at the expense of his petted Pear trees. His lot was once a "hole," but had been filled up with bricks and rubbish, giving a depth of soil, which, no doubt, had more to do with his success than the iron pots, hoops and nails which he had hanging all over his trees, and to which he thought he owed his good luck. He was a very worthy man, and his loss is great, especially to the Horticultural world.

Mrs. Mary Wright, wife of *James Wright, Esq.*, we also regard as a great loss to Philadelphia Horticulture. The beautiful grounds attached to the family residence, on the township line, between Germantown and Philadelphia, with the forcing-houses, vineries, greenhouses, &c., owed their existence and success chiefly to the personal interest taken in our pursuits by this estimable lady.

It is hard to part with our Horticultural associates, even after they have filled the full measure of life; and by so much the more so when, as in the case of *Mrs. Wright*, they do not reach the meridian, and seem comparatively but on the threshold of usefulness.

New and Rare Plants.

AUBRIETIA CAMPBELLI (syn. *A. Hendersoni*).—This beautiful variety is one of the most desirable hardy Spring flowering perennial herbaceous plants for the decoration of the flower garden yet introduced.

It forms a neat, dwarf and compact growth, resembling the well-known *A. deltoidea* or *A. purpurea*, equally tuft-like, 2 to 3 inches in height; its ovately-deltoid-formed leaves are arranged like its kindred species in close erect terminal leaf-tufts, of a sub-rosulate outline, from the axils of which are produced a profusion of rich violet-purple salver-like blossoms, so densely covered that in established growth the plants, when grouped, appear like violet-blue flower mounds, couched in lowly but attractive beauty upon the ground-surface. Its period of bloom extends from March until July, and, without the aid of secondary colors, it forms effective groups at a period when continuous-flowering plants are not plentiful.

It is strikingly adapted for forming select riband rows, parterres, or flower belts during the period alluded to; and, by superior culture in pots, is valuable as portable specimens for placing in vase groups or baskets on terraces, or in cool conservatory promenades, and appears to great advantage when seen skirting the front ground-level of select rockwork, or fringing the borders of terrace slopes.

It thrives in all ordinary garden soils, either upon the declivities of raised grounds or in the open borders, in miniature flower groups, or in extensive riband lines, being unequalled in its rich color and unique effect by any other known plant of similar growth and season of bloom.—*Gard. Chronicle*.

SCILLA SIBIRICA.—A beautiful little hardy bulbous plant, 2 to 4 inches in height, blooming in the early Spring months, thriving in ordinary soil, and blooming profusely, with pendent azure-blue bell-shaped blossoms, quite unequalled for marginal effect in flower gardens, or for front effect in baskets, vases or belts.—*Gardener's Chronicle*.

VERONICA FRUTICOSA GLAUCA.—A very neat and distinct new species introduced from New Zealand. It forms a compact, densely-branched, dwarf, half-hardy shrub, with small glaucous ovately oblong leaves, squarously decussate, in outline, and numerous terminal heads of white flowers in the Spring and early Summer months.

Its very glaucous white foliage constitutes a striking feature in itself, and would produce a marked contrast if grouped or planted out in flower beds or on rockwork.—*Gardener's Chronicle*.

SCHIZOSTYLIS COCCINEA.—This charming plant, sent out two years ago by Messrs. Backhouse, of York, is so thoroughly hardy that it may be planted with safety any where out of doors in the three

kingdoms. A fine patch of it here has been flowering beautifully since the 15th of October last, the showy red flowers having a most cheerful appearance in the rockery, where it is quite a conspicuous feature. A very small scrap of the plant is enough to begin with, as it "tillers" like wheat. My first scrap was planted in a handful of peat, "to give it a start," a wrinkle I learnt originally from your pages. It is now, however, freely rooted into the common soil of the place, which is a good loam, so I suppose I may fairly say that peat is not indispensable to its existence or prosperity. How much we owe the Messrs. Backhouse for the introduction of first-class hardy plants.

[At Stoke Newington, this plant has been out two Winters. It is now blooming freely, and is as green and fresh as in July.]—W. W. STRATFORD, in *Gardener's Weekly*.

FUCHSIA BEAUTY (BANKS).—A beautiful exhibition variety, with broad bright carmine scarlet sepals, gracefully recurved; the corolla pure lavender color, cup-shaped, of a model outline; growth free and vigorous, adapted for pyramid or bush specimen.

Domestic Intelligence.

HEAT IN VEGETATION.—To form some sort of judgment of what is required by vegetation, let us take Asparagus. According to some records by James Winthrop, Esq., Fellow of the American Academy of Arts and Sciences, &c., Asparagus was fit for the table at Cambridge, Massachusetts, in the year 1793, on the 15th of April; in the year 1794, on the 20th of April; in the year 1795, on the 26th of April; and in the year 1796, on the 24th of April. In the year 1803 Asparagus was offered in Boston market on the 27th of April. In the year 1813, according to the Hon. John Lowell, of Roxbury, Massachusetts, Asparagus fit for table use came on the 14th of May; in the year 1815, on the 6th of May; in the year 1816, on the 5th of May; in the year of 1818, on the 15th of May; in the year 1820, on the 1st of May; and on the same day of May in the year 1822. The town of Roxbury, the residence of Mr. Lowell, is about four miles southward of Boston.

According to the best authorities in gardening, to force Asparagus, in order to have it in use at an unusual time of the year, the soil of the forcing frames must never be lower than 50° Fahr. at night, and by day the maximum heat may be 62°

Fahr. The minimum of required warmth in the soil is at least 25° less than is usually employed in the ordinary hotbed used for germination and growth of some kinds of plants. Let it be understood that these fifty degrees of heat must be uniformly maintained in order to push forward the stalk and force it into growth above ground. Was there, then, all that difference between those springs when Asparagus was a month earlier—between 1793 and 1818, or between 1804 and 1813—a difference of actual heat of the ground out of doors; and, if so, to what causes can it be traced? What affected the power of heating by the sun the months of March, April and May? It is a commonly received opinion that cold Summers follow severe and cold Winters, and in some instances such is the case. Thus, the Summers of 1836 and 1837 were so cold that "Indian Corn did not ripen in Massachusetts, and the Winter of 1835-'36 was said to have been the coldest since that of 1780. Long Island Sound was closed about six weeks, and in the county of Berkshire, Massachusetts, large numbers of our native forest trees were destroyed."

If I rightly comprehend this subject, however, I do not think that it is the amount of cold or its intensity that injuriously effects the coming Spring or Summer, but the condition in which the Winter's snows find the earth. If the ground is slightly frozen, or which is possible, is free from frost when it is covered by the first snows, and the cold prevents these snows from melting away before other and successive snow-storms succeed, the soil, on the return of Spring, will rapidly absorb all the ice and snow, and an early Spring may be the result. In this case the earth will be ready to become warm much sooner than when a hard frozen soil receives scanty snows throughout the Winter. Something of this sort we find in the Arctic regions, where the warm and cellular snows at the end of Summer bury the earth in a light porous envelope, which, by and by, is protected by the denser and drifting snows of the Winter-time. The present Winter, 1864-'65 is one of unusual continued cold: does it follow that our coming Summer will be unpropitious? Conjecture can be, I fear, of little value, and time can only tell. Still if there is anything to be gained by such "signs," and no expectation of certain crops can be predicted, it is well worth the knowing beforehand that we labor not in vain.

There is another point to be considered, viz.:—whether in sections of country unvisited by deep snows and severe freezings, and where the bare ground is exposed to the sun's rays early in the

year, the Springs are always proportionally more forward, or this precocity, if it exists, can be depended on? In other words, will a more southern latitude of two or three degrees help the soil, so that it may be sooner fit for cultivation in consequence of its facility of being sooner warmed?

From notes on vegetation, made at the United States Naval Observatory, at Washington, D. C., latitude 38° 53' N., during the year 1864, kindly furnished me by the late Capt. J. N. Gillis, through James S. Grinnell, Esq., I find that Asparagus is fit for the table on the 28th of April, which, as it will be perceived, is not so early as at Cambridge, Massachusetts, in the years 1793—'95, nor in Boston in the years 1803—'04, and about a fortnight sooner than in Roxbury, Massachusetts, in the years 1813—'22. The Winter of 1863—'64 was mild, with much rain, and cold weather did not visit us until February, and then for a few days only. The middle of March had a few cold days; but the average of Winter was that of open and mild weather. Taking for granted what I have unfortunately no means of proving, that the Asparagus season or the time for cutting it is the average one at Washington, as denoted in 1864, then the occasional precocity of more northern and eastern climates, like that of Boston and Cambridge, must be due to some extraordinary causes, which must be taken into account in the general scope of our subject.

Should one still further estimate the degree of warmth, and even heat, to which the ground is raised by the sunshine, we should find it far greater than is ordinarily suspected. The range favorable to vegetation is from 34° Fahr. to 140°, as already intimated; in like manner, too, the very germination or first vital action of the seed must have between 34° and 40°, so that there be no danger of decomposition, and sufficient warmth to maintain circulation. The common Pea, to which I have alluded as being sometimes early sown, requires at least 40°, and when it is forced for early use the temperature is from 45° to 52°; that of the air to keep it growing healthily is at 66°, and after it has flowered, from 52° to 70° is necessary to mature its pods. An ordinary greenhouse, which contains a miscellaneous collection of hardy plants and shrubs flowering in the Winter months, may be regulated to advantage, if its temperature be not lower than 40°, but by the sun's rays in the day time it may rise to 60°, or even higher, to fall again to 40°, or a little below. The cooler temperature of the night time is favorable to all plants, inviting them to repose by diminishing their excitability.—JOHN L. RUSSELL, Salem, Mass., in *Agricultural Report*.

Foreign Intelligence.

APPLE JAM is delicious, and the most wholesome of any that can be made. It is very simple to make, as follows:

Take the Apples, do not peel them, cut into quarters, take out the core, then fill an earthen jar with the Apples, tie paper over it, and put it in an oven not too hot; when quite soft and cool, with a wooden spoon pulp them through a sieve; to each pound of fruit, which should be weighed after pulping, add three-quarters of crushed sugar; boil it gently until it forms a jelly, and put in jars. It will keep for years in a cool dry place.

CROQUET GROUNDS IN GARDENS. We recently said a few words in the *Gardener's Monthly* on Croquet grounds, for the benefit of our young readers. The following, from the pen of a clergyman, appears in the *London Journal of Horticulture*:—

"Croquet is to us in the country a necessity. Londoners talk of their Crystal palace, and say they could not do without it, and cannot imagine a time in London's history when there was not such a building, so available for all purposes and all weathers. Nay, it is said some Londoners aver that there always was a Crystal Palace, that it is all nonsense to say otherwise; at any rate that the first was not built in 1851, but rather in 1581, if not earlier. Now, I say, I cannot imagine the country without croquet—it must have always been played or how could there have been any summer sociality? Besides, we know there have always been weddings going on, and how, without croquet, could the young people have met, and we know they must have met before they were married? Hence it follows there always was croquet. Two bachelors, each of forty-five years, fell before croquet. "Poor fellows!" exclaimed another bachelor, the last left of the set, "they played each once too often at that foolish game." Even supposing the bachelor correct in charging croquet with spreading the fatal snare, still, perhaps, his friends did right in choosing wives at croquet, surely it is a better plan than the old and somewhat vulgar cheese-paring one. Watch a lady at croquet—if she be persevering, if she play steadily, if she play perfectly fair, not trailing her dress across her ball, of course quite accidentally, but somehow the ball is put into a better position—if she play in perfect good humor, not losing her temper whatever happens, not stamping her pretty foot, and this, above all, if she be obedient to her captain,

it is only fair to presume that she will make a good wife. In a too artificial age, croquet brings out the natural character: this surely is well; besides, it affords exercise without fatigue, and all can play, from seven years old to seventy. One only fault is to be guarded against; croquet is apt to become a ruinous runner-away of time. This I endeavor to avoid by never allowing a mallet to be touched in the morning. Time for exercise, time for amusement, (all the better if both are to be had together), there must be, but a game must not take the place of the serious, earnest business of life. Permit, fair young friends, this word of caution, and do not play morning, noon, afternoon, and even by moonlight. If the Great Master asked you "What hast thou been doing?" and the only answer you could truthfully give, was, "I have been playing croquet," that would be a poor reply indeed.

Some of our readers, perhaps, occasionally give or wish to give "a croquet;" that is the ladies' short for a croquet party; but as all such things are not equally well managed let me describe one, at which I was, happily for myself, present a short time since. Suppose a lawn on which were placed hoops for three games to be played at the same time; the mallets and balls were tastefully arranged at each starting point. In order to know one ground from another, and to prevent any dispute in the games, each ground had been clearly marked out by a narrow line of scattered bran run round the edge. On a table were laid the prizes; these are frequently flower-vases, photographic albums, or anything elegant and durable. The party had been planned for some weeks; there were to be players and lookers-on. Three sets of eight had been chosen by one well knowing the play of all. Each captain of a side was presented with a paper, upon which the names of his party and their opponents were written. A little time is consumed in getting the players together; at last, a dilatory gentleman, who comes panting in at half past three, instead of three, has arrived, and then the lawn is alive with players. Gay silks and black coats are intermingled—happily those odious dress coats are not required to be worn; dress coats, the horrors! making clergymen look like footmen in mourning.

To return, the game proceeds merrily. I thought I noticed a little flirting, and somebody looking across at another set and wishing somebody had been playing in her set. Still all went on pretty well, and as each game nears its end, and that end is often long in coming, spectators gather around the stick almost as eager and as excited as the players themselves. The glorious uncertainty of croquet is

now seen, for the skill that had been behind all the time now makes a spurt. A good hit follows, by which the best player of the hitherto successful side is knocked out of the game. All is excitement, and lo! the lately desponding ones win. So the eight are reduced to four. But just at this juncture dinner is announced, and here a croquet party is again seen to advantage. It is a cold dinner, and what so suitable in summer time? Long, narrow tables, extemporized for the day by the carpenter, run along the sides of the room, leaving a hollow square in the centre, and making a small dining-room a large one, or at least capable of containing a great number of guests, which is just the same. Brightly glisten the viands, being for the most part glazed marvelously; there are the substantial viands, there are the lighter viands, with dishes of juicy fruit interspersed,—semi-transparent Grapes, blooming Plums and downy Peaches. But commend me (after I have dined) to the flower decorations,—shapely Ferns in rustic-looking pots, Fuchsias with Chinese lantern-like flowers, with the earth hidden by many a rare device; then the cut flowers, to arrange which employed the morning of the young ladies; care and time well spent, for the result was giving happiness to all who beheld them. Oh, the exquisite taste shown in arranging the colors, and the dainty sprays of Variegated Ivy made to climb the narrow stems! Man! man! thou art a very bungler in such matters. I could only look on and wonder at what the slender fingers had wrought. "What would any entertainment be without flowers?" Granted; but what would the flowers be without woman's arranging hand? The dinner is over,—that portly old gentleman has finished at last. How some old gentlemen do enjoy their dinners! Back to croquet; the games of four, two on each side, are soon over; then comes the duels, when the two firm friends all through, who have advised each other in soft accents, now become deadly enemies. Now they are at it; the lady is croqueted, but she does not despair. Up she comes again; the gentleman bumbles at the first stick; the lady advances, he is after her. Another miss—ah? but she has artfully wired herself. "He will win." "No, she will." "Hurrah, the lady has it." The other games are advancing to their end. Mammals sip their tea and hope the grass is not damp; the daughters say, "Oh dear, no," but it is, though the young ladies are incredulous. The last game is over, the heroes of the day are congratulated, and advance for their prizes. They draw lots for the best, and receive them in order, with a heightened cheek and a tremulous hand. Evening is now advancing rapidly, and

all praise to health-giving croquet, its parties end when others begin. Croquet causes no late hours, and brings no headaches. The groups are thinning, and soon the last carriage wheels out of the gate.

One final remark. I think it is a mistake to give prizes at croquet parties. Like chess, croquet should stand as a game on its own merits. The pleasant gathering, the kind hospitality, the good game are enough. Prizes make feelings too keen, and, a little, mar the general pleasure. Human nature is human nature, even when dressed in erinelines or black frock coats. Dear me! how I have run away from my text, which, on turning back, I see, for I had forgotten it, is, "How to make a croquet ground a garden ornament." Well, I am not the first clergyman who has run away from his text, that's a comfort. Besides, does not Miss Augusta Cushington declare that such run-off sermons, (I have not run off the *line*, I hope,) are freer, more natural, more inartistic, &c.

But now to my text in all earnestness. A croquet ground with the earth at the edges running any way, is ugly—it is no ornament, that is certain. The prettiest I know is oval—this shape suits the game; it opens out beyond a small geometric garden, and has a grass bank all round, save at the entrance and exit. This bank varies in height, but the average is 2 feet. Then on either bank is a flower-border planted with standard Roses, Geraniums, Asters, &c.; the side near the road has, at the back, a thick row of *Convolvulus major*, neatly trained as a screen.

Some one asked, a few weeks since, "How to make a croquet-ground," but I purposely did not read the reply, and so speak simply my own ideas. The bank around is a great feature, the oval shape meets the eye pleasantly. Besides, the bank prevents the balls rolling too far, and as ground has usually to be leveled, the spare earth is used on the spot. If flowers are not thought advisable there are flowering shrubs in abundance, for choice, or have old-fashioned border plants; why not? Croquet cannot be allowed to become a garden-destroyer, and little square fields with nothing around them are very objectionable.—WILTSHIRE RECTOR.

HISTORY OF THE RADISH.—The original of our Radishes seem to have come from China at an early date, for they were known in Queen Elizabeth's time, and are described by Gerarde; but evidently had been grown in other parts of Europe at a much earlier period. The Greeks, according to Theophrastus, Dioscorides and Galen, highly esteemed

them, so much so that the votaries of Apollo offered a dish of Radishes of beaten gold; whereas Turnips were imitated and presented in lead, and Beet-root in silver.

Whilst speaking of the ancients I must not omit to state the superiority of their culture over us moderns; for Tragus tells of Radishes of 40 lbs. weight; Amatus had seen some 60 lbs., and Matthioli assures us that he had seen them 100 lbs. each. Thus a single root would be enough for the requirement of a whole army; but I believe that our modern gourmards would much prefer to tickle their appetites with our quickly grown Radishes, though of puny dimensions, and in weight not exceeding one quarter to half an ounce, than with a slice of such monsters! To return to Gerarde, who, speaking of the virtues of the Radish, says, "They are eaten raw with bread instead of other food; but being eaten after that maner, they yeeld verie little nourishment, and that faultie and ill; but for the most part they are used as a sawce with meate to procure appetite; and in that sort engender blood less faultie than eaten alone with bread only; but seeing that they be harder of digestion than meates, they are also many times troublesome to the stomacke; nevertheless, they serve to distribute and disperse the nourishment, especially being taken after meate; and taken before meate they cause belchings and overthrowe of the stomacke." Gerarde mentions and figures four kinds of Radish. The first is evidently the stock from which our fusiform sorts have been obtained. The second that he calls the small garden Radish, is so very like a variety of white Turnip Radish, that by its leaves as well as its root one would believe that the same kind has been in our gardens for nearly three centuries. The third is a Turnip-rooted kind of a larger character, but not quite identical with any now grown; whereas the fourth sort is, undoubtedly, our black Spanish Radish of the present time. It is from variation of this latter that those from India undoubtedly have sprung; and here I may say, that from whatever source the *R. sativus* sprang, they and many others are clearly traceable to the same stock, whilst as certainly as any distinction is made between species and varieties, the *R. caudatus* is one and distinct, and in no way specifically connected with those in ordinary cultivation.

Before leaving the subject, I may be pardoned for introducing these Radishes as subjects for the fine arts. The reader may smile; but take my word for it, I have seen a picture by Fitte, in which a bunch of these self-same, white-skinned Black Radishes were introduced with marvelous effect to light up

the left-hand corner of the picture; just as in another picture, by the same artist, the white belly of a duck is shown at the same place, and for a similar purpose, and with a similar intent.—WILLIAM MASTERS, Canterbury, in *Cottage Gardener*.

ROOTS AND LEAVES OF GRAPES.—Where Vines grow in carrion-borders, which are one mass of putridity, little beyond fleshy root-extension takes place. Very few fibres indeed appear at any time; the stems require less heat to cause the buds to swell and break; the growth appears small, but gross and long-jointed; and the leaves, though small at first, become something like a Rhubarb leaf. At this stage, if we examine the roots, we shall find little or no fibres, active or inactive; but the plant appears as if it depended on the humus absorbed by the root-stems for its nourishment, or is indebted for its nutriment to the atmosphere by which it is surrounded. Whether the plant owes its development to the nutriment collected by the roots without fibres, or to that collected by the leaves from the atmosphere, the leaves will flag when the moisture in the atmosphere is dissipated by the sun's influence rendering the parts about the leaves drier, and causing the leaves to perspire, or the water in them to be evaporated more freely than in cloudy weather. If the leaves flag under a bright sun it is an evidence of deficient root-action, or a want of moisture in the atmosphere; but flagging is chiefly caused by the leaves evaporating more water than the roots afford them. If there be a quantity of fibres the case will be different. Instead of the plant having one mouth it will have fifty; and it is only reasonable to conclude that a plant with fifty mouths would absorb more nutriment, and supply the wants of the leaves better, in a case of emergency, when extra food is needed, than a plant having only one.

Fibres, then, are necessary to a Vine's healthy development, and the extension of the main roots essential to the formation of fibres. There cannot be healthy development in a Vine, or any plant with a fibrous root, without fibres; hence the immense importance of their preservation, and the necessity of promoting their production. Rich soils hinder the production of fibres: poor soils increase their number. Plants grown in rich soil have more foliage and less fruit than the same species in poorer soil.

I am led to infer from this, that fibres are the chief agents in the production of fruit-buds; and although I am but partially prepared to prove it, I am persuaded that they are the sole agents em-

ployed by the roots in their production. But we were considering the annual reproduction of fibres. I contend that all plants do, partially, lose the old fibres annually, some plants oftener. Superficial evidence alone is forthcoming in abundance to prove the fact, without calling to our aid any internal evidence at all. We give warmth or bottom heat to plants at the commencement of forcing, keeping the atmosphere comparatively cool to induce root-action before leaf-development commences. What necessity is there for this extra stimulant to the roots if their extremities are prepared to absorb nutriment on the expansion of the buds? Nature gives no such stimulant. It is a point, in fact, that proves the roots have not the requisite elements, lying dormant and only needing the expansion of the foliage to call them into activity. In all cases of repotting the cultivator finds a quantity of dead fibres, in addition to the growing, and attributes the presence of the dead fibres to an unhealthy root-action; whereas, such is not the case; for if there is a quantity of live fibres, in addition to the dead, it is evident that what suits them would suit others. Sour soil very often causes the destruction of all the fibres of a plant; but that has nothing to do with the periodical decay of the fibres, being simply a medium in which the fibres cannot extend themselves.—*Cottage Gardener*.

HUNGARIAN GARDENING.—What, however, strikes an English eye the most is the entire absence, in most Hungarian gardens, of anything like evergreens, for there are no Yews, no Cedars, no Firs, no Holly trees, nor anything that is green in winter; in consequence of which there is a comparative want of contrast in summer, and an appearance of utter desolation in winter. In summer, the foliage is afforded chiefly by Acacias, Gleditschias, Poplars, and occasionally oaks.

The garden is cultivated by peasant girls, under the superintendence of the gardener, who are paid 2d. a day. They always go about without shoes or stockings, as the only time when the Hungarian peasants wear shoes, which are considered a luxury, is when they are at church or when the snow is on the ground. As was formerly the case almost universally in Scotland, the boots or shoes are carried in the hand, and put on only when they arrive at the church door.

The tools generally used in a Hungarian garden are very large heart-shaped hoes and wooden rakes. A spade is very seldom seen. The wheelbarrow holds no more than a bushel, and is made entirely without iron, the wheel consisting of a disc of board, and the spindle of a piece of Juniper or other tough wood.

The most prominent feature on entering a Hungarian gentleman's garden is the hothouses, which, though not as magnificent as they are frequently in our own gardens, are on an extensive scale, adapted to the exigencies of the climate. They are of three different kinds: 1, the Szaporito Haz, (the slip or propagating house); 2, the Hajto Haz, (the forcing house); 3, the Hideg Haz, (or cool house, answering to our greenhouse or orangery).—Correspondent of *Gardeners' Chronicle*.

MIGNONETTE.—This may be sown in the pots it is intended to flower in; and when the plants are large enough to handle, they may be thinned to one or three in each pot, according to the time of year it is sown; if sown in May, for tree or pyramidal specimens, then one plant in a pot will be sufficient, and may be trained in the form desired by pinching off all flowers as they appear, and such shoots as are not wanted for the form desired. These will flower in autumn and winter. Those sown in August, may have three plants left in each pot, the blossoms to be pinched off during autumn to form dwarf flowering masses in Spring. Mignonette may be grown throughout in a light situation in the greenhouse. In giving water avoid as much as possible wetting the stem and leaves, as this plant is impatient of moisture about its stem and leaves, although its roots must not be stinted, and liquid manure may be given when once it has attained to a flowering state.

BEST SIZE FOR POTATO SETS.—What I now wish to establish is, that the produce of the crop depends, much more than ordinary practice would seem to admit, on the size and vigor of the individual sets. Small Potatoes are diminutive in all their parts; the eyes are proportionately small, and cannot produce such strong shoots as full-sized tubers. All the 8 oz. sets I planted appeared above ground with remarkably strong and vigorous shoots, which maintained their superiority over those from the smaller sets throughout the whole period of growth, and no one who saw their splendid tops—nearly double the height of the others—could for a moment doubt what the result would be at the harvest.

I believe the mere question of inherited character has much to do with the extremely various weights produced from the different sized sets. Mr. Darwin has shown how almost any quality can be established by the selection of individuals tending in a particular direction, and Mr. Hallett has actually produced a race of long-eared Wheat, by the

simple process of selecting the longest ears and largest grains for three or four generations.

In almost any field or garden crop we all know how much, under precisely identical circumstances the plants vary, but are apt to forget that this must be solely attributable to differences in the constitutional vigor of the individuals.—*English Paper*.

THE STORY OF MY FIRST ORCHID.—I had a *Dendrobium nobile* given me once—I think it was in the May or June of 186—. I must confess I did not know what to do with it; its thick, white, waxy roots were bare of soil. I had grown many things, but never an Orchid—the name sounded very terrible to me.

To ask our gardener would have been useless, for he would not grow Orchids—"didn't like them."

After a great deal of thinking I potted my plant after the directions given by some learned man, and yet with a vague idea that I only half understood him; but then, I fancy, gardeners' descriptions are like the cook's receipt—the most essential ingredient left out.

The *Dendrobium* grew and flourished. In the following year, as the young shoots grew, the leaves fell off from the old stem. I became very uneasy, and sought professional advice. "Oh, the thing is dead, clean dead, sure enough," said one; "You have pinched it of water; the young ones may live, though, if you can winter them; but they are seratehy things to manage." "Your plant is not dead," said number three gardener, whose opinion I sought, "it is in first-rate condition; will flower next spring; never does flower until the leaves fall off, and the stem is well dried-in."

"Will those dried bits of stick ever flower again," I asked. "Yes," said one. "No," said another; "and, whatever you do, never let a drop of water touch your *Dendrobium*; that is the secret of Orchid-growing."

"Another said, "Water it overhead many times a day; it will not do without moisture."

Now, I did not do as the old man in the story did with his ass—if I had been a man probably I should—then my poor plant would have gone to the rubbish heap; but being a girl—a woman—I did not take all for gospel. So I watered my Orchid when it needed it, which was very often during the hot summer weather. I kept it very clean, and think that is a secret of Orchid-growing; and when the autumn came, and the heat lessened, I gave it less and less, sometimes sponging the leaves, and often dusting them with a clean handkerchief. Whether

the treatment was right or wrong the plant grew and flourished.

In the autumn of that year there came a time of grief, and it was left unattended for days, pushed out of sight behind a large Crenate Cactus—left, indeed, to its fate. Never shall I forget its appearance when pulled into the light—it was covered all over with the red spider: there needed no glass to find the insects out, they were plain enough even to the naked eye. Up and down the poor leaves they hurried in ceaseless crowds—hundreds, nay, thousands of them. Never was Rotten Row busier or gayer than those leaves as they stood in the full glare of the sunshine,—red and yellow, and white and yellow-green. There were fathers and grandfathers, and little ones, meeting and passing and going on their way, as if each one had a special mission to perform, something to do besides life's sustenance to provide,—and all this with an apparent enjoyment.

I watched them for a few minutes, then the syringe and cold soft water thinned their numbers—cut them down like the plague or rinderpest. The few left appeared to become larger and fatter, as if rejoicing in the rich pasturage; they were not left there long—no mercy was shown. In a week my Dendrobium was clean. The red spiders never came to it again; if they ever thought to do so, they were scared by some patriarch hermit telling the sad tale of the terrible destruction of their "nobile" city, and the almost total annihilation of the red tribe. Yes, the flood and storm and tempest had indeed swept over them, and the wonder where they had gone to could only be answered by the greater wonder where they had come from.

So far a short time the poor Orchid was at peace. It was no favorite, save with its owner, and one thing must be said of it—it was like an ungainly child, attracting attention but never admiration. "I do not know what the thing is grown for," said the master, "a mere piece of stick—rubbish!" "It will never flower," said the gardener, "but be always just as it is now." "It is very crooked, let me straighten and tie it up for you," said cousin Walter, (just home from school, where he had taken the first prize for botany, and of course he was very proud,) "and allow me to rub off those strange protuberances." I screamed out "Stop, will you!" but it was all in vain, for suiting the action to the word away went clusters of would-be buds. "Don't get into a passion, Maud. You will never make me believe the flowers come before the leaves; it is against Nature. Why, child, the leaves come to feed the flower!" "You are a dunce, cousin Wal-

ter, with all your book learning. It never will have leaves on again; I am not sure it will ever flower after what you have done. I have cared for it, watered it, and kept it clean, and loved it for nearly two years, all for your great rough hands to knock off." "Nonsense, child, it never meant to flower there; or, if it did, why there are lots of buds left. But see, I will show you where the flowers come from—out of the pseudo-bulb down here, and there is not the least appearance of growth;" and cousin Walter pushed it close to a damp wall, and I tried hard to forget it, not even going to look at it for more than a week. When I did go, to my great surprise, I found it standing in a warm, sunny place in a forcinginery. The flower-buds, unmistakable, were swelling on the old stems, and the leaves on the resting shoots were green, and thick and leathery. Two or three weeks more and then out it burst into marvelous beauty, seeming to do all its work one moonlight night. There were five, seven—twelve blooms, all opening as if by magic to the May sun. And then the household flocked out to see the new flower, and the master said, "Who would have thought it!" and the gardener, I "could not have believed it; but then I never had much to do with such things." And cousin Walter lifted his hat to the fair lady flower, and said softly, "Oh, Maud! I am so sorry I knocked off the buds." And I looked at it and loved it more, and said, "I will never part with it, for it was a gift," and the giver had gone "far away." So the troubles of the Dendrobium nobile were at an end.—MAUD, in *Cottage Gardener*.

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The monthly meeting of the Pennsylvania Horticultural Society was held on the 26th of September. No annual display was held—the building of the New Hall, now in progress, kept back attention to gorgeous display for the season. The exhibition was, however, the best monthly meeting of the year.

The best general Display of Plants was awarded to E. Hibbert, gardener to Mr. Fairman Rogers. These were all old and well known species, such as Lantanas, Justicia, Russelia, variegated Yucca, Heliotropes, and a half dozen pretty Anætochilus had rarity if not novelty. Donald McQueen, gardener to Mr. Joshua Longstreth, had the second premium—similar plants to the first—Jasmines, Callas, Cupheas, Marantas, &c.

Best Table Design to Donald McQueen. There was strong and close competition in Baskets; the best was awarded to C. Fox, gardener to J. V. Merrick, Esq.; second to J. Huster, gardener to C. H. Duhring, Esq. Second best Bouquet to D. McQueen. Best Ornamental Foliage Plants to Mr. R. Buist, grown by R. Chinnick; as usual from this collection the plants were mostly very choice. The list contained *Dracœna odorata*, *D. Ferrœa*, *D. tricolor*, *D. marginata*, *Allocasia metallica*, *Ananas variegata*, *Philodendron pertuosum*, *Pandanus gracilis*, *Croton discolor*, *C. variegatum*, *C. rubra*, *C. pictum*, all good, and two new ones.—*Cissus Amazonia* and *Gymnostachyum Verschaffeltii*. Of the second premium there appears to be no list sent to the Secretary.

E. Hibbert, gardener to Mr. Fairman Rogers, had the premium for the best Ferns and the best *Anæctochilus*. Among the former were *Blechnum braziliensis*, *Gymnogramma Herminieii*, *Adiantum cuneatum*, *Platyceerium aleicorne*, *Asplenium Belangerii*, *Nephrolepis pectinata*, *Cibotium barometz*, *Asplenium nidus*, *Pteris cretica alba lineata*, *Pteris tremula*, *Aspidium felix mas*, *Dicksonia orbilantum antarctica*.

The Best Dahlias, by Mr. Buist, were Amazon, Coronet, Donald Beaton, Eclat, Conqueror of Whites, Lady Popham, Lady Pannier, Lord Palmerston, Maria Louise, Miss Hallam, Mirande, Mentor, Nora Creina, Maggie Lander, Princess Rosella, Queen Mab, Regularity, Surety, Vesta.

Of the second best no list, and of the best 12 no list. First and second best *Caladiums* no list.

The Best Roses, 20 varieties, Mr. R. Buist, Henry IV, Charles Wood, Sydonie, La Reine, Pauline Boudier, Count de Eves, Belliotte, Hippolyte, Plantier, Homer, Louis Philippe, Mount Carmel, Mons. Alfred Delmas, Jules Margottin, General Tartas, Hermosa, Vesuvius, Bressa, Madame Williams.

Mr. Henry A. Dreer had a special premium for *Gl. diolus*.—*Reine Victoria*, *La Poussin*, *Máthilde Landevaisini*, *Daphne*, *Imperatrice*, *Rembrandt*, *Theresa*, *Madame Haquin*, *Edith*, *Madame Duval*, *Curranti fulgens*, *Premice de Montrouge*, *Canair*, *Don Juan*, *Ceres*, *Hebe*, *Calypso*, *Victor Verdier*, *Aristote*, *Mazepa*, *Rebecca*, *Laelia*, *Diana*, *Emma*, *Brenchlyensis*.

Miss Harris a special premium for a Basket of Flowers dried by hand, in their natural colors.

Best market growers' collection of Vegetables to A. L. Felten. Best amateurs' to Jacob Huster, gardener to Mr. H. Duhring. The best Cabbage to A. L. Felten,—Drumhead Savoy.

In Fruits, R. Bevis, gardener to Dr. Camac, had the best light Grapes, (Cannon Hall.) A. Bellet, gardener to Mr. A. J. Buckner, (Black Hamburg.) Special premium to John Brooks, gardener to J. D. Cameron, for Gros Colman—a fine new Black—and large bunches of White Nice. Also special premium to James Astley, gardener to Eden Hall Convent, for large and well-grown Chasselas and Black Hamburg.

For Muscat of Alexandria and Black Prince, to G. Huster, gardener to Governor Cummings, of Colorado. For 6 bunches of very fine Black Hamburg and Frankenthal, to J. Huster, gardener to H. Duhring, Esq.

David Curtin's (gardener to Mr. J. Leedom) collection of 12, were also worthy of the special premium—awarded. He had Black Prince, Victoria, Hamburg, Muscat of Alexandria, Palestine, Black Ferrar, Prince Albert.

Wm. Fowler, gardener to John S. Hopkins of Baltimore, had a special premium for extra fine Black Morocco and Muscat of Alexandria. Altogether the Foreign Grape collection was a good feature of the exhibition.

Among the Native Grapes, Mr. T. T. Walker had the premium for the best 12. They were Concord, Catawba, Ohio, Hartford Prolific, Diana, Clinton, Telegraph, Rogers' No. 2, Isabella, Maxatawney, Rebecca, Bullitt, Williamsport, Elsinboro, Rogers' Nos. 19, 15, 42, Perkins' Hybrid Seedling.

Mr. Buist had on exhibition Muscat Hamburg, and Lorin Blodgett, Esq., had Diana and Concord Grapes from vines "only 2 years old," and bearing "twenty pounds each."

The best 12 Pears were awarded to J. McLaughlin, gardener to J. B. Baxter, Esq. White Doyenne, Hampton, Washington, Brown Beurre, Petre, Surpasse, Duchesse d'Angouleme, Passe Colmar, Louise Bonne de Jersey, Lawrence, Surpasse Virgalieu, Columbia, Bartlett.

Apples, best collection, to S. W. Noble. White Doctor, Smokehouse, Smith's Cider, Cornell's Fancy, Baldwin, Fall Pippin, Rhode Island Greening, Fall Pearmain, Maiden Blush, Cheltenham or Calf Pasture, Porter, Cumberland Spice, Gate or Belmont, Princely, Northern Spy, McLellan, Gravenstein.

In conclusion, the Fruit Committee say, the display of Fruits was very large and of superior quality, but were so crowded for want of dishes and space to properly exhibit them that they could not be appreciated, our Hall being entirely too small, either

to display the Fruits or accommodate the public who desire to visit these exhibitions with comfort, showing the necessity for the speedy completion of our New Hall.

We have to regret passing over the names of many of the successful exhibitors, through finding *no lists of the varieties* among the papers kindly loaned us by the Secretary. Our object in publishing these reports is to furnish some guide to the public as to the most valuable things for them to procure which the awards of premiums show, as well as to give honor to the exhibitor. Without these lists the reports have no value to the general reader.

PENNSYLVANIA STATE AGRICULTURAL SOCIETY.

BY "OUR SPECIAL REPORTER."

The annual fair of this Society was held at Easton on the 25th, 26th, 27th and 28th ult. Owing to the unfavorable state of the weather, the opening was very inauspicious, and the attendance of visitors necessarily small.

The Horticultural Department was exhibited in a large tent with every convenience for a fine display, and as far as the contributions were concerned, they reflected great credit on the growers; although we have seen them surpassed in quantity at previous fairs of this Society.

In the centre of the tent was erected a beautiful rustic structure, composed of mossy rocks and gnarled roots of trees, tastefully interspersed with Ferns, Rhododendrons and other native plants, with the *Antelopeopsis* in its gorgeous Autumnal dress, and loaded with purple berries, charmingly interspersed, and clambering over the green verdure. Numerous small streams of water sprang out at different points, whilst the whole was surmounted by an ingenious fountain with revolving jets, which greatly added to the interest of the scene. In the basin below were several minor fountains and water plants, amongst which floated, quite naturally, several "imitation ducks."

At one end of the enclosure were two tastefully arranged arbors of Evergreens and Moss, with cornucopias of fruits and flowers, and containing Aquariums, Hanging Baskets, &c.

The display of flowers was not very extensive, but well grown. We hurriedly made a few notes as we passed along, and only record such as appeared most creditable. William Johnson, of Easton, deposited a beautiful assortment of Bouquets, and numerous Greenhouse plants. Also, fine specimens in pots by F. Seitz, Esq., of the same place.

In the department allotted to fruits, James A. Nelson & Sons, of Mercer County, exhibited as fine a collection of Apples as we have ever had the pleasure of examining. This display numbered 150 varieties, and embraced several new seedlings of merit. We noticed especially a large showy red variety, known as "*Flake's Fall*," now becoming quite popular in some sections of Western Pennsylvania. D. McCrea, of Bloomsburg, N. J.; C. L. Eck, of Allenton, Pa.; A. H. Wind and D. B. Lorah, had also fine collections of Apples, the latter showing 43 varieties. The Apples were all remarkably fine, and, in view of the present unfavorable season, deserving of praise.

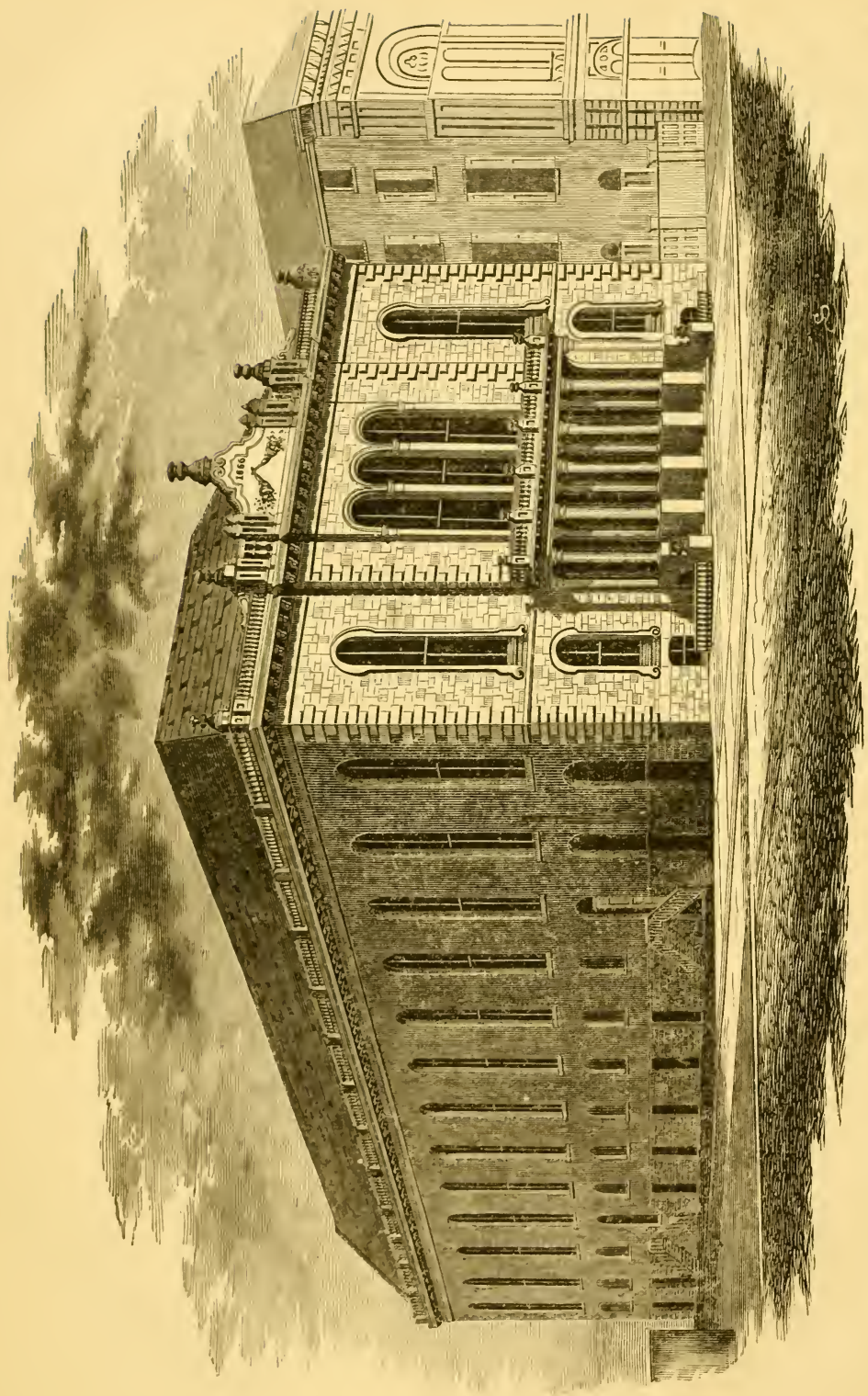
In Pears, Daniel B. Lorah exhibited 40 varieties well grown and handsome. There were also several smaller collections by other exhibitors. A large plate of well-ripened Flemish Beauty, shown by Henry Richards, attracted much attention.

In Grapes the display was rather meagre, although very fine bunches of Concord and Delaware were on exhibition by J. Brown, Esq., of Mauch Chunk, and a splendid plate of *Iona*, by Messrs. Holton, of New York, with smaller bunches of the same variety from the originator, Dr. Grant.

The Horticultural display of F. Seitz, Esq., was the crowning feature, and was universally admired.

It consisted of 12 varieties of foreign Grapes, (cut bunches) beautifully colored and of fine size; also, several specimens in fruit, growing in pots; a collection of 10 varieties of Peaches in pots, which could not very readily be excelled for fruitfulness, size and appearance. In this display we noticed, particularly, the "*Crockett's Late White*," a medium sized variety, but which were placed on the branches almost like "ropes of Onions." The same gentleman exhibited 21 varieties of Pears, as well as excellent vegetables of many kinds. From the market gardens of Wm. Johnson, of Easton, were excellent Celery, Cabbage, &c., with as fine heads of Cauliflowers as we have ever seen. Numerous other exhibitors made the usual display of mammoth Pumpkins and Cabbages that were real "Drumheads;" as well as glorious large Potatoes, the Goodrich varieties being in the ascendancy.

Altogether we think those in charge may be well satisfied with the many excellent contributions, for certainly such displays are well calculated to exert a highly beneficial influence upon the surrounding community; and it should be the pride of every gardener to endeavor to make each fair superior to its predecessor, and thus show to the world at large that we are truly a progressive class.



Horticultural Hall, Philadelphia.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

THOMAS MEEHAN, EDITOR.
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Hints for December.



FLOWER-GARDEN AND PLEASURE-GROUND.

When preparing our last December Calendar, we alluded to the remarkable fact, that the heat given out by Evergreen trees was so great, as to keep flowers near them in full bloom, fresh and summer-like, up to a late period of the year. As we now write, all bedding plants have been killed a month ago by frost two or three degrees below the freezing point; while, a few hundred yards off, even such tender things as Scarlet Sage, protected a little by belts of Evergreens, are blooming gaily, and will, most probably, remain so till the first week in December. It often astonishes us to find people complaining of the severity of the winter on themselves, their cattle, and their fruits and flowers, when planting belts of Evergreens on the cold quarters would do so much to make all things comfortable.

The time to appreciate the force of our remarks is now approaching. 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 kinds 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 a commanding claim on every one's 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 Procrustean 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.

Where Evergreens have been planted late, they will suffer from keen, cold winds. Any loose brush thrown around and over them will help them much.

Our readers will do well to remember that it is not so much severe frost that hurts vegetation in winter, as it is severe thawings following the freezings. Every thing, therefore, no matter how hardy they may be, will be benefited by having something thrown over them, to prevent *early thawing*. Small things, such as hardy herbaceous plants, can be protected by a little earth, and there is nothing

better. Seed-beds are also improved by this covering; but if earth is used for them, it should be very sandy, because it cannot well be removed, and seeds cannot come through stiff soil.

It would be well, at this season of leisure, to examine and decide on the course of improvements for the ensuing year.

"Night brings out stars, as sorrow shows us truths," and winter reveals to us defects in gardening taste and arrangements we should else have had no conception of. Let us note well every point capable of improvement, every alteration that can be made without prejudice to the original design, every novelty that can be consistently with propriety introduced, and every change that would commend itself to our notions of good taste and elegance; so that when Flora shall return to roll away the stone from the sepulchral heart of winter, we shall be ready to go earnestly to work to prepare a place where she may feel proud to "sit therein an angel," and guide us to the enjoyment of one of the purest pleasures earth can bestow—a beautiful and well conducted garden.

It does not, in very many cases, require much time or money so to alter the appearance of a place as to make it bear a very different look to what it did in the past year. A new clump of cheap shrubbery may be planted, or an old one taken away to admit a new view that may have grown up since the original planting. A strip of grass may be laid down on what was once bare gravel. Here a small rockery may be put together; there a nest of roots thrown up, and ferns and trailing plants freely interspersed between them. In this corner you may place a stump, and entice Ivy or some climbing vines to grow over it—a rustic arbor may be formed in some inviting nook, and in another shade-enticing spot, a rustic chair or bench be fixed. Even the outlines of the flower-beds may be changed, or of the walks themselves, or even the contour of the surface in some instances, and all, in many cases, at the expense of a very small expenditure of time and money.

In all these undertakings, money, time and vexation will be saved by consulting with men who make it their business to study such matters.—Every one can, of course, design and lay out his own garden, just as well as he could make his own coat, or design the pattern of his own chandelier; but he will find, in the end, that his landscape-gardener, his tailor, or his manufacturer of lamps, would have done the work much more satisfactorily for him. Many suffer from ill-fitting garments and and ignorant pretenders; but the man who has not

tact enough to discriminate in this respect, through employing botches, deserves to suffer by badly designed gardens.

PLANT HOUSES.

The great effort of plant-growers seems now to be to have the greatest amount of flowers possible during the winter months. To have plants bloom freely at this season, heat, moisture and fresh air are essential. 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, Hermania 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 villainously 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.

Pelargoniums become "drawn," spindly, and worthless, if they are not allowed to occupy the lightest and most airy part of the house. If fine specimens are desired, the shoots should now be tied down to the surface of the pots and pinched off so as to induce them to shoot freely; but a too frequent use of "finger and thumb" is bad,—nothing renders a *Pelargonium* weaker; rather encourage them to grow bushy, by the free use of light, air and manure-water.

A good supply of young *Fuchsias* should be coming on now. Re-pot as their roots fill each pot; let them not want for moisture or light; do not pinch off their tops, but let them grow rapidly. The temperature in which they are grown should not exceed 55°. A turfy loam, moderately enriched

with well-decayed manure, and well drained with charcoal, suits them admirably.

The *Mimulus* is receiving more attention than it has been. Where they are grown, they are much improved by having pans of water kept under their pots.

Epiphyllums, as they continue to flower, will require the warmest part of the house, and a fair supply of moisture.

The most interesting tribe of plants at this season of the year is, undoubtedly, the *Camellia*. The buds frequently drop off before flowering; this may spring from three causes—from the plants being kept too dry, or from the drainage being bad, whereby the soil becomes sodden, or from the house being kept too warm by insufficient ventilation. As the leaf-buds burst, the plants are benefited by occasional syringings; and, indeed, an increased supply of water altogether, in order to accommodate the demands of the young growth.

Cinerarias will soon be the chief attraction. The least frost kills them, yet they will not do well if kept in a high temperature. They love moisture, yet are very impatient of damp. No plant is more improved by the use of charcoal in potting than this.

The *Calceolaria* will require the same conditions as the *Cineraria*.

Hyacinths that have been out of doors, or in any reserve place for protection, may be brought in a few weeks before wanted; they should not have much heat, light or moisture for a few days, and then only gradually.

Carnations and *Pinks* are much admired when grown in pots and flowered there early. They do not flower well if too much warmth be given, but the usual temperature of the greenhouse will bring them forward a month before they can be had out of doors. Whenever the roots make their appearance through the bottoms of the pots, they should be shifted into a size larger. They require very little water, and love the light, and whatever manures are used to enrich the soil should be thoroughly rotten. The *Pansy*, on the other hand, delights in half-rotten, strawy manure and turfy loam. If a quantity of seedlings have been raised in the fall, they will require potting this month. They do not flower well here when the weather becomes warm; but when grown in pots, and forwarded slightly by the aid of a cool frame, they do very well.

Cacti, and *succulent* plants generally, will scarcely require water at all, unless in very dry situations, and then receive but a slight sprinkling with a syringe. The rule "When you water a plant at all,

let it soak right through," does not, by any means, hold good with these plants, if there be not some other good exceptions.

Oranges and *Lemons* will require the coolest part of the house, and to receive no more water than will just keep them fresh.

Communications.

GRAPE-CULTURE.

BY A. S. FULLER, RIDGEWOOD, N. J.

Read before the Pennsylvania Horticultural Society,
November 6th, 1866.

It was suggested that this essay should be confined to the history of Grape-culture in the United States; but that appears to me to be a worn-out subject, as nearly every author, who has written on Grape-culture in this country during the last twenty years, has gone over the whole field, picking up every word and line on the subject, whether true or untrue.

A recent writer has gone back to the year 1000, and there starts with an old Dutch legend, to prove that America was, by a certain Teutonic explorer, named Vineland, or Wineland, at that period. I might quote authorities still farther back to prove that our land was producing its thousands of bushels of Grapes long before the Christian era; and that, while Pharaoh was holding his cup for the expressed juice in his own land, America was teeming with ripe Grapes, but skillful vintners came not to gather them.

Believing that the present and future are of more importance to us than the past, I beg to leave the history of Grape-culture with those who prefer talking about what *has* been, without endeavoring to show what *may* be done.

LOCATION OF VINEYARDS.

That the location of a vineyard is often the cause of success or failure, no one who has investigated the subject will deny; but that every location which is pronounced to be favorable, even by those who are supposed to be good judges, is so, in fact, is not equally true; for there are many things which cannot be learned, except from experience.

There are often destructive currents of air, of which no one can be aware until taught by experience. These currents may be cold ones from low, wet soils or shady valleys, or hot and dry ones from sandy plains. In one location, a protection from the winds prevailing from some particular direction

is all-important; in others, a similar protection would be sure destruction.

In confined positions, where the wind cannot freely reach the vineyard, there is more or less danger of late Spring frosts, unless there are large bodies of water near, which may affect the atmosphere sufficiently to prevent sudden changes.

In a level country, that which is generally termed a protection, such as hedges and high board fences, will be found to be more injurious than beneficial, because vines thus protected will start into growth earlier than those exposed, consequently more liable to be injured by cold.

An elevation of only a few feet will often be the means of saving the entire crop. All these conditions and circumstances must be taken into consideration by those selecting a location for a vineyard.

Elevated positions, with a free circulation of air, for warm climates, and elevated, protected ones for cold latitudes, are to be preferred. There is more danger from frosts in the latitude of Philadelphia than that of Albany. There is also more danger from mildew, sun-scald, and insects in the former than in the latter. But in one the late Grapes may be successfully grown, while in the other none but the earliest are valuable.

Therefore, it is apparent to every observer that specific, experimental knowledge is required more than that which is speculative or theoretical. I do not wish by these remarks to convey the idea that Grape-culture must be confined to certain prescribed limits, nor that particular towns, counties or States are the only locations where vine-culture can be made profitable; but that there are certain locations in every section of the country, which are better adapted to it than others.

To determine these locations requires observation and some little experience.

I now refer only to sections where Grape-growing is to be made a specialty, and prosecuted on a large scale.

Declivities of hills and mountains have been, in all ages, chosen as the best sites for vineyards; and probably, all things considered, they are better adapted for the purpose than plains.

In such situations, a more perfect circulation of air is secured; besides, in sections where an increased temperature is desirable, it can be obtained by planting on hill-sides inclining to the south.

In the Northern States such situations are preferable, but are not always absolutely necessary for success. We suspect that the time is not far distant when every one who owns a rod of ground will grow his own Grapes, whether his location is fa-

vorable or unfavorable. If the soil is unsuited, he will remedy the defect, and overcome other obstacles by skill and perseverance.

The question of soils is another which is open for debate, and is likely to be for some time to come; for all the theories and speculations of wisecracks are so often set at naught, that one often doubts if there be any really practical rules or facts which may be guides to the novice in selecting a soil for a vineyard.

In one section we find vineyards planted in a stiff clay, producing abundant crops; in other sections similar soils are found to be utterly worthless for Grape-growing. Just so it is with all other kinds of soils,—sandy, gravelly or loamy,—in each of which we find vineyards that are successful, and others that are failures. We have, therefore, to judge from the majority, and this, I believe, is on the side of a calcareous, gravelly or stony soil. The most successful vineyards in our country are in the limestone regions, although there are a few that do finely in soils of an opposite character.

The Grape requires a firm soil, not too heavy or too light. Many sandy soils are so light, that too much air penetrates, and not sufficient resistance is offered to the growth of the roots to keep them healthy.

One ancient author says, that vine-roots require labor to strengthen, and doubtless it is true.

If the soil is not deep, make it so by plowing or trenching, for there is no one operation that will add so much to the healthy growth of the vine as a deep and thoroughly pulverized soil.

There are but few locations where it will be necessary to trench the soil four feet deep, as is sometimes recommended; but there are few soils that do not require deepening to twelve or eighteen inches.

If the soil is not naturally rich, it should be made so before planting; for we cannot expect a growth of wood or fruit, unless the material to produce them is in the soil.

Over-manuring is nearly as great an abomination as the want of a proper amount.

The application of a large amount of fresh manure will often cause disease and feebleness in the vine to as great an extent as a poor and unfertile soil. To produce fine, healthy vines and fruit of good quality, a deep but only moderately rich soil is required.

I am quite certain that many vineyards have been ruined by a too liberal application of manure, while many others have failed for want of a proper amount.

When vines grow rapidly, say six to ten feet per year where they are allowed to grow unchecked, it is all that is necessary. I have often seen three year old Delawares making fifteen to twenty feet of growth in one season; but such wood is seldom, if ever, as well ripened or healthy as when one-half this amount of growth is produced.

It is, therefore, important that those who are new beginners in vine-culture should use largely their own judgment, instead of following implicitly the directions of any one who is not on the ground to examine and ascertain by experience how much or how little manure is required.

One writer will tell you that five hundred or one thousand two-horse wagon-loads of compost is required per acre, and all this may be true with him and on his particular soil (if so, we pity him); but upon your own, one-half this amount might be ruinous.

Again, there must be discrimination made between varieties. One will require (in fact, demand) a very rich soil, while another would be almost uncontrollable under the same conditions. Delaware will starve where a Concord will thrive, and Taylor will take what the Concord rejects and flourish splendidly. Therefore, I have long since come to the conclusion that there was very little positive knowledge connected with Grape-culture, and what there is, was and is obtained by local experience.

MANURES.

What kind of manure is the best? is the ever-recurring question. The only general answer which I am able to give is, the kind which you can get. I prefer, for general use, barnyard-manure, composted with two parts muck to one of manure. This compost, for sandy soils, is as good a manure as has ever been invented. For a heavy loam or clay soil, the order might be reversed, and two parts of manure to one of muck, always adding one to two quarts of bone-dust to each vine at the time of planting.

There are many kinds of concentrated manures that are good, and I have experimented with most of them, but, so far, with the single exception of bone, I prefer the barnyard compost, ton for ton.

Others think differently, and practice accordingly, which only proves the truth of my previous remarks, that only local experience can be depended upon.

CULTIVATION OF VINEYARDS.

Clean cultivation, frequent stirring of the surface of the soil, or, in very light, sandy or gravelly soils, applying a liberal mulch.

My personal experience or knowledge will not

warrant me in advising any thing additional, except as a warning, or what not to do. Do not grow any vegetables or fruit-bearing plants among your vines, no matter who may advise you to do so. If you cannot afford to give up the soil to the vines, you had better not plant them.

PROPAGATION.

The best method of propagating the vine is that one which produces the best plants. The disseminators of the new unexcelled varieties tell us that really good vines can only be produced by a peculiar process, known only to themselves (and the rest of the world), and with the aid of artificial heat. If they do grow better vines under glass than others can grow in the open air, then we will believe the assertion; but is it a fact that they do? We know that larger vines may be grown by forcing than otherwise; but is the simple increasing in size a real benefit? It has been my fortune, or misfortune, to handle many vines grown in both ways, and I have not yet decided which is best. Good, well-ripened healthy vines are produced both under glass and in the open air. Some men will produce first-class vines in either manner, while others appear to have (to use their own words) no luck.

The principal cause for complaint against a large portion of the vines produced under glass is, that they are *made*, not grown; for, if the variety is scarce, and the demand large, they are put through on the *double sweat*, with no time to cool off. Good, strong, healthy vines are produced under glass, but at the present time I fear that such are the exception, and not the rule. Vine-growers have sacrificed quality to quantity.

With scarce varieties, and with those which are now quite common, the process of *manufacturing* is really ahead of the days of wooden nutmegs. A few vines are put into the forcing-house, and as soon as they have made a few inches of growth, it is taken off for cuttings, and this is placed in the sweating-box until they, in turn, produce roots. Then cuttings are taken from these, and so on interminably. If there should be a lull towards the close of the season, perhaps a few inches of half-ripened wood is formed; but when the plants are sold, this is carefully reserved for future use. Every one who has bought any of the newer varieties, understands this clipping process, for it has become notorious that many of our propagators send *roots* to their customers, but never a vine.

We may confidently expect, as an improvement on this plan, that, so soon as these propagators learn that root-cuttings will grow, they will only

send us, in return for our money, their bill and a finely got up *carte de visite* of an imaginary Grape-vine.

Purchasers of vines should demand good, strong, healthy vines, and the grower should be allowed to produce them in any manner he may choose. Any vine that has not made six inches of ripe wood in a season is not a strong, healthy vine.

If you do not get the six inches of wood, you can only guess whether that which has been taken off (if there has been any) was ripe or green when the vine was sent. There are only a very few varieties which will not grow readily in the open ground with ordinary care. I have found only two in two hundred varieties, and these are Delaware and Norton's Virginia. These require extra care in the vicinity of New York, to make good vines from cuttings.

All cuttings should be made in the Fall, so soon as the wood is ripe, and then put them in, out in the open ground, and cover sufficiently to keep them from freezing. Two to three bud-cuttings are the most convenient to handle, and make as good plants as more or less wood. I have often tried single-eye cuttings in the open ground, but have never been so successful as when two or more were used. The main points to be observed in propagating vines, either in the house or in the open air, are: First. Use none but good, well-ripened wood. Second. Have your soil deep, fine and rich. Third. Plant early, carefully, and when the vines begin to grow, keep them growing through the Summer. The Autumn will take care of itself.

PLANTING.

When the soil is properly prepared, planting a vine is a very simple process, as it consists in removing sufficient soil to allow the vine to be placed in position to grow, and then putting it back into place. If the roots are long, shorten them to within a reasonable distance of the stem. The roots on a one year old vine may be shortened to one foot, or two year old, eighteen inches to two feet.

DEPTH TO PLANT.

There are two systems of planting in vogue. One is called shallow planting, covering the upper tier of roots four to six inches deep. The other is deep planting, allowing no roots within eight to twelve inches of the surface, and if any should start above this point, they are removed. The latter plan is the old Roman system continued, not revived, because it has always had its advocates. Both of

these systems have distinct merits to recommend them.

I presume every Grape-grower is familiar with the points of excellence claimed by the advocates of each system. For my own part, I prefer the shallow planting.

PRUNING AND TRAINING.

Of all the disputed points in Grape-culture, this one is, probably, the most persistently contested. No practical man will dispute the necessity and beneficial results of judiciously pruning the vine. Then the question to be decided is, How far shall we go? Shall we take off one-half or nine-tenths of the young wood at the annual pruning? This, in a few cases, will mainly depend upon the variety. Some are very strong growers, and comparatively unprotected. With such as these we can leave more wood than with those that are less vigorous and more productive. Delaware, Hartford, Concord, and similar varieties, if left unpruned, will set more fruit than the vine can mature. No matter how vigorous and healthy the vine, if allowed to overbear, it will be weakened, if not entirely destroyed. Therefore, is it not far better to over-prune than not to prune at all? I am well aware that we have men among us, who decry close pruning, and assert that it weakens a vine to keep it within any particular limits, or to prune it what they please to term severely.

To strip vines of their leaves at any time, is certainly injurious, and I have yet to find any practical vineyardist who ever recommended it, although such a system has often been accredited to authors on Grape-culture, but without the least foundation.

Pinching off the terminal or side shoots is not denuding the vine of its foliage. It is merely a process which has for its aim the concentration of the vine into a less space than if the shoots were allowed to grow unchecked.

A leaf on a shoot that has been checked by pinching off its terminal bud, will be much larger, thicker, with more capacity for performing its functions, than two or three on a shoot unchecked.

We all know that a large and healthy Grape-leaf is less liable to mildew than a small one. This concentration and full development of leaves, wood and fruit, is what we gain by Summer-pruning.

I believe that the results have always been satisfactory when properly performed, and, if experience is worth any thing, then we may claim that Summer-pruning has been fully proved to be a beneficial operation; for there is no country, where Grape-growing is at all noteworthy, in which the practice

is not considered important. There is no reliable work on Grape-culture, from Columella to the present time, that does not acknowledge the value of Summer-pruning, pinching, weeding, pampinating (for it is known by all these names), the growing vine.

Neither do any of our authors, who write from experience, advocate the stripping off the leaves of the vine, which many uninformed persons assert.

Another point in pruning is, whether vines should be allowed a large space in which to ramble at will, or be confined within certain prescribed limits.

A few horticulturists contend that our native vine should be allowed to ramble, and that no check should be put upon its growth. The advocates of this expansive system claim that it is contrary to nature, and that vines confined in a space of four to six feet, will be proportionally short-lived. The theory is all very well, but the man is yet unborn who will live as long as a Grape-vine will, even if grown in one-half the space allotted it by those who advocate close planting. The Grape is governed by the same physiological laws in America that it is in Europe, and there some are to be found, from fifty to one hundred years old, that are not two feet high, and not occupying more than three feet square of soil.

Every vineyardist is at liberty to choose his own system, and those who prefer to plant their vines sixteen feet apart, and wait for the vines to fill up the space, can do so; but there are others, who think differently, and they prefer to plant more vines and get greater returns in less time.

There is no necessity for going to either extreme. We have plenty of land, but none to waste.

With nearly all of our best varieties, I think that six feet by eight is room enough; and with many, four by eight would be more profitable.

Men who are anxious to count their acres of vineyards, instead of the results, always advocate a large space between their vines.

In training, all the systems aim at one thing; that is, the best and most fully developed fruit. Those who do not advocate any system, generally go in for the largest quantity, the quality not being one of the considerations.

One grower believes he obtains the best results by the upright cane, with lateral bearing branches, while another follows the Ohio Bow system, and when he gets a good crop, he will proclaim that it is the very best way to train vines. I prefer the horizontal arm system and spur-pruning, because it can be reduced to almost an exact science, or the nearest to it of any mode now known.

Training vines horizontally is the correct method to obtain fruit, and this principle is now being applied to all vines, whether it be Grapes, Hops, or flowering vines. Any one can soon prove, by a few experiments, that it is the true principle for the development of fruit or flowers.

I offer no theory upon the subject, for they are unnecessary, but suggest that any one who doubts the assertion, can try it, and learn the fact for himself. Another recommendation for the horizontal arm system is, that it is the most simple, every vine being pruned the same, no deviation, no guesswork, but a straightforward, simple plan. It is certainly not a system that will give the greatest quantity on a given space; still, so far as quality is concerned, it is not excelled.

There may be a few varieties, like the Taylor, Clinton, and others of similar character, that will not give a remunerative crop when pruned to a two or three bud spur. For such varieties, the *Flem* system is better suited. With this system a longer spur is allowed, and, if still more fruit is wanted, add the box, as recommended by Mr. Hussman.

Within these two systems may be found all the excellencies of all others, without the difficulties so often encountered in the Ohio Bow, alternate renewal, long rod, and a host of other systems, which have been advocated by writers on Grape-culture.

A neglect of proper pruning has been the cause of many failures, and one cannot travel in any direction where vines are grown, without seeing vineyards going to decay because they have been allowed to produce an over-crop, in consequence of improper pruning or no pruning at all.

This is not so often the case with old vineyards of Catawba and Isabella, as with new ones of Concord, Delaware, and similar varieties. The young vines were allowed to produce fruit the first season, probably because the owner bought vines for *immediate* bearing, as advertised in catalogues, and they probably fulfilled their mission the first year. Canes that should have been cut back to six inches, have been left two feet; consequently, an abundant, imperfect crop with vines nearly destroyed. We see other vineyards, that have not been allowed to bear while young, the owner having patience to wait until the vines were strong; but when he pruned for the first crop of fruit, he failed to shorten the canes sufficiently to cause the lower buds to push. The consequence was, that only the upper ones pushed into growth and produced fruit. The next year, canes two or three feet long are again left, and the final results are, that, after the third or fourth

year, Mr. Vineyardist has to gather all his fruit from the top of a very high trellis, while, if he had been more severe in his pruning, he would have received just the same amount of fruit, and of better quality, and his vines would still have been within reach. I presume there are just such Grape-trellises about Philadelphia. I am certain there are in other sections of Pennsylvania, and quite a number near New York. If you ask the owners of these vineyards why they follow such a system of pruning, they will tell you that the American Grape cannot be restricted. It will not bear to be confined, for, like the American eagle, it soars aloft. To such men I would respectfully recommend the *Sequoia gigantea* of California as suitable trellis-posts; for with this delicate help, they could indulge in lofty climbing in gathering the eggs of their imaginary bird.

PROFITS OF GRAPE-CULTURE.

This is certainly a very interesting part of the subject, for it is the great motive power that keeps the huge car in motion. The great question of the day appears to be, Is Grape-culture profitable?

Vine-propagators say that it is exceedingly so, while other horticulturists reply, that it is under some circumstances, but not generally. We have known men to become wealthy from the profits of Cabbage-culture, others in Potato-culture, and a few in Grape-culture. Some have always been successful in grape-growing, while many others have failed. The causes of these failures are innumerable. Sometimes it is unfavorable situations, soils or varieties; but it is my belief that nine-tenths of all the failures can be traced to neglect or ignorance on the part of the vineyardist. This may be a pretty broad assertion; still, I believe it can be verified by facts.

The one great error of our cultivators appears to be in their greediness for large results. Therefore, they plant more vines than they can manage. The cost of preparing the ground, vines and planting, is a small item in the cultivation of the Grape. The vines require care after this. Stakes or trellises must be procured, weeds must be kept down, vines must be pruned, and no cessation in their attention allowed.

Fruit-boxes for marketing the crop, or casks and cellars must be provided before the profits are realized.

In foreign countries Grape-culture is made profitable, because the requisite care is bestowed on the vine, and growers do not undertake their fifty

or one hundred acres without first knowing what it will cost to perfect the enterprise.

A man that owns the vines, even of five acres of vineyard in the best wine districts of Europe, gives them proper culture, and is rich. But here one that owns five acres, land and all, is miserable because it is not ten, twenty, or fifty. American cultivators are too grasping, or they seem to prize the name of being the proprietor of a large plantation more than that of a profitable one. They start off nobly, but often fail signally and disastrously, simply because they undertake more than they have the ability or care to accomplish.

There are plenty of men who can manage successfully five or ten acres, that would fail if they undertook fifty or a hundred, simply because it requires a different combination of talent and more head-work for a large vineyard than it does for a small one. Some men can do well themselves, but do not possess the ability of properly directing others to do the same thing; consequently, they get themselves into difficulty.

A small vineyard can be under the careful and daily supervision of the proprietor; but when the area is extended beyond certain limits, then it is out of the reach of one man, and hired overseers must be substituted, and difficulties begin. The fact is apparent to every experienced cultivator, that bone and sinew is far more plentiful than brains. The relative positions of the capitalist and laborer in this country are quite different from that of the Old World. Here every man is his own lord and master, and the poorest can compete with the richest, if he chooses to do so. The laborer, who has become however slightly informed in a certain business, reasons thus: "If my employer can make a profit on my labor, why should I give it to him?—why not keep it myself?" And, as there is no obstacle, except, perhaps, a small capital he starts for himself. If any one doubts that this has been the case in horticulture, I refer him to the forty-eight pages of advertisements in the *Gardener's Monthly* for October, 1866. How profitable is Grape-culture? Ask those who have tried it and failed. They will tell you that the balances are all on the wrong side. Ask those who are successful, and they will tell you that from two hundred to one thousand dollars per acre is a fair return. Never ask the man who has vines for sale, or take his experience as a guide, for he will invariably over-estimate, not intentionally by any means, but the peculiar circumstances which surround him favor his vision so that he often sees double. He usually reasons from figures, instead of facts.

If a man is growing vines for sale, that is one thing; but Grape-vine growing and Grape-culture are two very distinct branches of business, if we consider them in the light of profits.

When we take all the successes and failures and balance the account, we shall find very small profits. Doubtless there has been causes of failure, such as unsuitable varieties, want of experience, &c., which do not at the present time exist, still we have much to learn before we shall make Grape-culture universally successful.

Locally it is a success, especially with those who grow some of the most productive and hardy varieties.

I do not wish to discourage persons from engaging in this branch of horticulture, yet I would not advise any one to start in the business until he has investigated the subject sufficiently to know what will be required to carry the enterprise to a successful termination. Not half way through, or to the first hundred pounds of Grapes, or to the first cask of wine, but to that point where cost has been fully returned and profits are accumulating.

When a man has made up his mind to do this, then he may commence looking for a location and examine the different varieties. There is one thing more required to become a successful cultivator, and that is a confidence in your own abilities and perseverance, with a willingness to adopt any improvement that your co-laborers have shown to be valuable. Watch and work and wait, never be discouraged, and success is then certain, even in Grape-culture.

VARIETIES.

In selecting varieties, we find ourselves deficient in that positive knowledge which is derived only by local experience. In one section the old Catawba and Isabella have undisputed sway, and the vineyardist finds them very profitable, probably as much so as any other varieties. When these varieties do succeed, they are scarcely excelled for market purposes, and we have very few varieties that equal in quality a well-ripened Catawba.

If we call up the recently introduced varieties, we find that we want more experience to enable us to determine their true character. There is, however, one Grape that may be termed a universal Grape, and that is the Concord. From Maine to Georgia, New York to Missouri, the verdict is composed of one word—success. In quality it is not best; but in productiveness, hardiness and beauty, it is without a rival. I have often thought we should strive for better quality, but the people say

it is a good Grape, and they are satisfied with the Concord. The Greeley prize, about which there has been so much contention, has lately been awarded to the Concord. It is, therefore, champion of America. Its rivals at present are the Hartford Prolific, which has the habit of dropping its fruit; Creveling, which is of excellent quality, but with too loose bunches; Adirondac, not yet sufficiently tried, but, so far, only successful in regions where the Isabella succeeds.

Israella is in the same list with the Adirondac,—new and untried, and of Isabella origin. Some of Rogers' Hybrids promise well, but subject to mildew in many locations. Iona has been on the anxious-seat for the past two years, but the Concord has robbed it of the bloom. It is a splendid Grape, and in locations where it will succeed, it will, no doubt, be one of the very best and most profitable. For amateurs I would name Concord, Delaware, Iona, Creveling, Israella, Adirondac, and Catawba, where the season is long enough to ripen it. There are a dozen more in which there is very little choice. For market, Concord, and any other variety that will succeed. Try a few vines of each, and when you find one or more varieties which suit your location, soil and pocket, plant them in preference to those which you have not tried.

The success or failure of the experiments of your neighbors may be of value to you, so that it is not always necessary for one to personally repeat an experiment to learn a truth. Grape-culture in America has become a fact. The people have learned that good Grapes can be grown, and they are not likely to forget nor to neglect so good a fruit which is so great a blessing.

Capitalists have taken hold of it with a will, and when the Yankee nation says in its heart a thing *shall* be done, it is as sure as the immutable laws of nature that govern their being.

The people have decided that Grape-culture shall become one of the great features of American horticulture. It is already accomplished. Science, art, and the great Archimedean lever, money, are contributing their aid in advancing the cause. There may be a little humbug, which occasionally puts out a light or two, but the candle is soon relighted and blazing away as though it never had been darkened.

Plant a few or many, but no more than you can attend to. Do it well; get the best you can, but plant a Grape-vine. It will grow when you sleep, and work when you rest.

FERTILIZING IMPERFECT FLOWERING GRAPES.

BY MR. J. M. MATTISON, TOMPKINSVILLE, N. Y.

On seeing, a few years ago, some To-Kalon Grapes growing near other varieties, loaded with fine, perfect bunches, I made up my mind that the To-Kalon had been fertilized by the other varieties, knowing that the To-Kalon generally had loose and scattering berries.

Dr. Campbell, a well-known horticulturist near here, and I, decided from this, that if the To-Kalon could be placed near some variety that had strong stamens, and that would fertilize it well, the bunches would be perfect. The Doctor took a Concord and a To-Kalon and let them run together, by having one vine above another on a trellis; and I took ten vines of Concord and ten of To-Kalon and placed them a few feet apart, in rows running parallel with one another, and the result is, the To-Kalon is loaded with fine, perfect bunches.

We are both satisfied, from these experiments, that the To-Kalon Grape can be grown with great satisfaction if treated in this manner.

MY SEEDLING GRAPES.

BY HORTICOLA.

Soon after I had planted my first grape-vine, it occurred to me that our American kinds might be very much improved by sowing the seeds and growing seedlings. My hopes were strengthened by the experience of others, although I had only a very limited knowledge of them. Acquainted with Van Mons' as well as Knight's experiments, I had no choice; the season was far advanced, and crossing or hybridizing was out of the question, especially as I had no vines to begin with. I resorted, therefore, to Van Mons' plan, and collected, in the month of September, a small basketful of unripe berries of old Isabella, which had dropped from a number of vines in the garden of an acquaintance of mine. They had just commenced coloring, being only red, not blue or black. To carry out Van Mons' views, I rotted them in a tin vessel; then I washed out the seeds and planted them, in December, in a box filled with common garden soil, which I kept in the cellar during the winter, moistening the soil occasionally with a little water. In the spring following, the seeds germinated, so that I planted out about five hundred seedlings into the garden.

Some of them were sickly and tender, others vigorous and strong; no two of them were alike in regard to the shape and form of their leaves. Some came into bearing the third, others the fourth, fifth

or sixth year. There were very many male plants among them.

The first one that came into bearing produced a most beautiful bunch of blue berries, lighter than those of the Isabella, but rather larger. I watched it with intense interest, and resisted the temptation to taste it during the process of ripening; but when I judged that it was fully ripe, all the members of my family went to the vine in solemn procession to taste the fruit of my first-born; the fruit looked so beautiful and promising. I cut the bunch with dignity, anticipating the profound satisfaction it seemed destined to give us. I distributed the berries equally among the bystanders, and was about to put one into my mouth, when I was struck with the contortions of the faces of those who had tried to eat their berries; still I bravely attempted to chew mine. Alas! my hopes were cruelly blasted; for the berry was so bitter, so sour and foxy, that it seemed to be a combination of every thing abominable.

Another vine bore, in the following year, a large, handsomely shaped bunch of delicately colored berries. It was of a beautiful very light flesh-color, a little darker on one side. But it was foxy and insipid. I could give a long list of failures, but I will confine myself to my successes.

I have *three* very good seedlings. The *first* of them is similar, in growth and leaf, to the Isabella. It is an abundant bearer. The bunch is as large as that of the Isabella, also the berry, but of darker color. The pulp is very soft, and *perfectly sweet to the very centre*. It ripens in the middle of September, but the berries hang so firmly on the peduncle, that not a single one has dropped yet from the bunches which I suffered to remain on the vine. It is a decided improvement on the Isabella, so that I shall preserve and propagate it. The vine is vigorous and healthy.

The second is, botanically considered, perhaps the most remarkable seedling ever raised from an American variety. While the pulp of the continental varieties *adheres* to the skin, the pulp of the American varieties *separates* from it. In my seedling the pulp *adheres to the skin*, as it is the case in the continental kinds. Last year it bore a single bunch; this year, several. As I had lost all confidence in my seedlings, I neglected those remaining very much; but I shall now take good care of them. My friend, Dr. Thurber, of the *American Agriculturist*, takes, as a botanist, the greatest interest in that seedling. He tasted it in two successive seasons, and can never get away from it when he is among my vines. A few weeks ago, he tasted it again, critically. It surprised him to such a de-

gree, that he asked me whether the mother vine was growing far enough from any graperly to prevent bees or other insects carrying the pollen of European grapes to it. I told him that the nearest graperly is a mile and a half from it. The bunch is smaller than that of the Isabella, also the berry, which is of a bluish-red color. The skin is thin; the flesh is sweet, vinous, and so crisp that it resembles the Chasselas Croquet, a most delicious grape of the Continent.

A German friend of mine, who has much knowledge of grapes, thinks so much of it, that he most urgently requested me to bestow the utmost care upon it. The vine is very healthy and a strong grower. The lobation of the leaf is peculiar, and different from that of any one variety I am acquainted with. I shall also propagate it.

Of the *third* I can say but little, as the original vine was injured by one of the workmen last spring, so that it died. Fortunately, I have about a dozen young plants. The vine bore, last year, but one bunch of middling size. The berries were enormously large, thin-skinned, very sweet and vinous.

The *white grape*, of which I gave a detailed description in the October number of this Magazine, is, of course, my favorite seedling. Only a few days ago, Mr. Caywood, of Poughkeepsie, and, a little later, Mr. White, the foreman of Mr. Henderson, called on me. I showed them the vine, and requested them to examine it critically in every respect, and then to tell me frankly what they thought of it. They did so, and corroborated my own opinion of it in the most emphatical manner.

The remarks which the editor of the *Monthly* appended to my article inserted in the October number, are certainly fair. They apply, however, with equal force and truth to our native American varieties. Long ago, the *Catawba*, as well as the *Isabella*, which yielded annually certain crops, ripening them perfectly, commenced failing. The *Catawba*, but especially the *Isabella*, suffer more from mildew than any other kinds. The *Delaware*, which was represented as being so hardy that it would stand the rigor of a Canadian winter, is losing its ground more from day to day. I need not refer the reader to the many and oft-repeated complaints, scattered through the public prints; here I will only state that just twenty-five out of fifty Delaware vines, presented to me by Dr. Grant, are either dead now, or so sickly, that I have to destroy them. They were, several years ago, so beautiful, that I was really proud of them. *Red Bank*, in the State of New Jersey, has a warm, sandy soil, and an abundance of marl eminently adapted to the

cultivation of the vine. Still, the Delaware is failing there just as rapidly as in my own grounds. The *Iona*, though raised "*with a view to hardiness*," is a feeble grower with me, and mildewed in spite of the assertion to the contrary, made by Mr. Mead, that I had little hope. Mr. Knox, I learn, plowed recently several acres, planted to the *Iona*, under, as he is unable to do any thing with it. A strong *Israella*, which I had covered, as I cover all my vines, was destroyed last winter; yet some *Allen's Hybrids*, growing near it, survived, and are unimpaired and healthy. Even the *Concord* is tender in some localities, and that, perhaps, only the *Clinton* and a few others may be believed to be perfectly hardy. From an experience of eight years, during which period my white grape has continued steadily improving, I know that its power of resistance against the extremes of our changeable climate is much greater than that of any varieties mentioned in the above, except the *Clinton*; for it has not been, in the least, affected by them. At present its wood is ripe within a few inches from the top; still, it was neither pinched nor broken to hasten the maturing of the wood. *A vine that can stand a winter as well as a summer like the last, gives, in my opinion, promise to do as well in the future.*

As this article is already longer than I intended, I would only remark here, that I firmly believe the main fault of the tenderness of our vines lies in the root. *The wood does not suffer*, in the majority of cases; for in the spring, young shoots appear and make a growth of a few inches, or even feet, *in proportion as new roots are forming*. Could we grow our tender vines on the roots of the *Clinton*, and prevent them from making roots of their own, which would weaken them, I have not the slightest doubt that we could convert our tender kinds into hardy ones.

But how can this be done? Grafting is too uncertain an operation; the union of the two kinds is, besides, very imperfect in general. Grafting succulent roots alleviates, it is true, the difficulties arising from the facts mentioned; still, the scion will emit roots of its own, which will, in their turn, weaken the vine, so that it does not differ from one grown on its own roots. Some of my vines, grafted on pieces of succulent roots, require an annual cutting of the roots, in order to protect them against the weakening influence of them.

An intimate friend of mine, a gentleman of large experience and of original thinking, suggested to me and carried out a plan on my grounds, with so much success, that there was not a single failure.

I feel justified in asserting, that any of our native vines can be grown where the *Clinton* thrives. It may, perhaps, apply to foreigners also.

INSECTS IN THE ORCHARD.

BY DR. J. S. HOUGHTON, PHILADELPHIA.



I am by no means a scientific entomologist, but I study the nature and habits of insects injurious to fruit trees, to some extent, with the hope of devising some means of protection against their ravages.

The curculio, the borer and the codling moth have been discussed so freely that there is little to be said, which is not already well known, respecting these insects. The bark louse or scale, is also pretty generally known, as well as the remedies for it.

My attention has lately been directed to a new enemy to fruit, the *cantharis* fly or beetle, an insect similar to the Spanish fly of which the well known blistering ointment is made. This is a very large beetle, of a ravenous character, which feeds upon the young Pears as soon as they are formed, eating large holes into their sides, and gnawing the skin in a most destructive manner. I think they also devour the germs of the fruit in the opening blossoms,—but of this I am not quite sure.

The cantharides are not very numerous as yet, but should they increase with great rapidity, a crop of fruit would seem almost hopeless. This insect may be readily caught, as they are quite large, and make no attempt to escape. In size they are three times as large as the common click-beetle, which they resemble. I trust there is some friendly parasite to keep this voracious rascal in check.

The relation of evergreens and evergreen hedges to the production of insects presents some grave questions. My orchard is surrounded by evergreen hedges or screens, as a protection against north-west gales. And now that these hedges are well grown, ten to fifteen feet high and very handsome, I am led to inquire if this is not a mistake? Is not the effect of the evergreens, as a harbor for injurious insects, worse than the effects of the gales?

It really seems to me that I have more than my share of curculios, apple moths, borers, bark lice,

cantharides, spiders, wasps, hornets, "bumble-bees" (big ones), yellow jackets, click-beetles, aphides, slugs and every sort of insect enemies except caterpillars, of which last I have very few.

Now, why I don't have caterpillars I can't tell, unless it is because I have so many of the other breeds above named that they leave no room for the caterpillars.

Wasps, hornets and spiders my place abounds in, more remarkably wasps and hornets, I know, form nests in the evergreens. So do spiders. I think I can beat the State on a show of big spiders, of all colors and styles of conformation. I put up houses for the birds, but find them occupied by wasps and spiders—a bird's nest below and a wasp's clay tenement above, in the same apartment. I think the wasps drive the birds out. Then I have the curious hump-back spider, with a shield and horns, which the entomologists tell me is a carnivorous, useful insect, but that its bite is very painful and dangerous.

Birds, we are told, are highly useful to destroy our insect enemies; but the birds, it is to be feared, will devour the young fruit buds for want of other green food in Spring.

To encourage birds I abolish cats, and then the house and barn is nearly destroyed by rats, which are too shrewd to eat arsenic when presented in the most palatable dishes. I know of nothing more striking in nature than the heroic self-denial of a hungry old rat, which, when tempted to partake of a nice buttered French roll, sprinkled with sugar, grated cheese and corn meal, and sweetly scented with fragrant oil of rhodium or anise (and only just a little pure, white, tasteless, odorless arsenic scattered over the butter), say to himself, instinctively and sagaciously:—"No! such food is not good for me! I am very fond of it, but I will govern my appetite and my desire for food. I will not partake of this delicate, fragrant and tempting dish!"

How many human beings, with delicate stomachs, even while cholera is about, can so govern their appetites and their wills, when tempting dishes of cucumbers, which they happen to love (full of colicoly colocynth) are set before their eyes? In this respect, at least, the instinct of an old rat is far superior to the average degree of human reason.

Do Cherries breed the curculio? Mr. E. Satterthwait once stated in his fruit catalogue that they do, especially the black Mazzard Cherries. I am inclined to think that the Cherry does not exist long enough, after the curculio has deposited its egg in the fruit, to perfect the larva of the curculio. If the Cherry does breed the curculio we

had better destroy our trees, for we seldom get any good Cherries, and the crop of curculio must be very large, every year, from this source.

All these are interesting questions. I should be pleased to learn the experience of other cultivators on these topics.

IRON STAKES FOR GRAPE-VINES.

BY JAMES LAMONT, GARDENER TO C. ZUG, ESQ.,
PITTSBURG, PA.

I have always been a lover of Grape culture, and I have been often grieved, going, after a great thunder storm, into the vineyard to see so many of the vines laid low and the stakes broken off by the ground, the vine and the Grapes almost destroyed by the fall, and in some cases the sap vessels strained in such a manner that the sap will not flow so freely as before, and this besides involves a great deal of time in getting new stakes and making things as they were before the storm.

For this reason I have adopted iron instead of wood; and I am sure that an iron stake can be had nearly as cheap as a wooden one.

The stake that I would recommend for small growing vines, such as Delaware, Diana, &c., would be of half inch iron, eight feet long,—three feet in and five feet out of the ground.

To make the stakes,—eighteen inches from the ground put a cross piece, two feet long, where, at that point you have punched a hole one-sixteenth of an inch in diameter with which pass the two feet piece in through the stake far enough to fasten the piece in; when that is done turn each end of your cross piece up, say three inches, and that will keep the shoots from blowing over with the winds. The second piece, eighteen inches up, have punched for your next piece, only cross the direction. The third piece the same way and in the same direction as the first piece, and give each piece the turn on the ends; by this measurement you will see that you have eight inches above your last cross piece, and that will just answer for tying the vine to the stake, three ties will be enough,—one just above each cross piece, and that will keep the vines from slipping down, as it often happens on wooden stakes.

To fasten the stake in the ground, dig out the ground as is done in putting in any stake or posts; when that is done take bricks ordered at the brickyard to be made with a hole through the centre of each brick to suit the size of your stake. It will take three for each stake. The one at the lower

end of the post hole I think ought to be only holed half way through, so as to make a good, sturdy foundation to stand on, then put on two bricks holed through upon the stake, and set the stake with the end in the socket of the lower brick. Fill in the ground till you come up half way and then let your second brick fall into its place, and the third within three inches of the ground's level, and I think this will hold all strong and secure, and you will have a stake that will give satisfaction.

I would recommend two coats of paint all over the stake, both under and above the ground.

A friend of mine told me that he had his best Grapes on wire trellises. He assured me that his favorite Grape, the Catawba, ripened better on that trellis than on a wooden one; so if this proves true in all cases we may soon have a rolling mill in Pittsburg making iron for that purpose, and I am sure I would rather see a mill making iron for supporting Grape-vines than making plate to build gun-boats or iron-clads.

Mr. Editor, I hope next Summer to see this stake tried in numerous vineyards. I am sure they would favor such a stake instead of wood trellises. I think the vine likes to grow in a round head,—such as on a tree, and in that shape the sun has more beneficial influence on the foliage, and the great point is to keep the main cane, and the fruit likewise, well covered from the sun by the foliage. Strong growing vines, such as Concord, Catawba, &c., will require stronger iron,—three-quarters of an inch I think will be strong enough in all cases, and it might be six feet high above the ground, and four cross pieces. Every man can be his own stake maker, painter and stake setter.

This is a point for your Pomological Societies to discuss; for any thing that supports the vines which give us *the Grapes*, the noblest of all fruits, I think will be worth discussion.

Iron is often recommended to be put about trees to keep off blight, and it is, I have no doubt, just as good to keep off mildew from the vines; mildew is the greatest evil that follows the Grape-vine.

[This is an excellent practical idea for making iron Grape trellises. The trouble with iron stakes has always been that without much labor they would not stand up. The idea of brick bottom may be carried to iron fences, and iron posts of every description. Thousands of "patents" have been paid for by millions of people, of much less value than this idea of Mr. Lamont's, which he gives our readers for nothing.—ED.]

HORTICULTURAL PATENTS AND DISCOVERIES.

BY PETER HENDERSON, SOUTH BERGEN, N. J.

It seems we are to be annually treated to some wonderful discovery in horticulture. Hardly had Hooker's patent tank sunk into oblivion, before the Grape excitement develops another discovery, (?) claimed by Mr. Perry, which he hastens to secure by a patent in case any one should profit by his ingenuity, and rob him of the profits.

He might have saved himself all anxiety and expense on that head. It is not at all likely that he will have much trouble in defending his rights, for few indeed will be likely to trench on this patent any more than there were on that of Mr. Hooker's.

But aside from all question of whether Mr. Perry had any right to a patent for simply converting a practice (which has been in use for probably a century) from one class of plants to another. Let us examine where there is any benefit to be had from it when applied to the propagation of the Grape.

According to the photographs and explanatory note sent me by Mr. Perry, by this "patent" system the cuttings or eyes are set in the boxes at the distance of one inch by six, or twenty-four cuttings to the square foot,—thus from the moment they are set in the propagating house, occupying from four to six times the space that cuttings set in the usual way should do; for in rooting Grape eyes there is no use for setting less than one hundred in a square foot, and in eyes that have been taken from the slender wood raised under glass one hundred and fifty is none too many. Mr. Perry may reply that cuttings or eyes set thus thick must be potted off or otherwise planted as soon as they are rooted, while by his patent process they may remain until they can be planted out doors. This is all true enough; but by the close setting system we can root 50,000 eyes at once with one fire in one house; while by the new patent Mr. Perry uses from 4 to 6 houses of the same size, and 4 to 6 fires to produce his 50,000. It is also true that our 50,000 *when rooted* will occupy the same space (or more) as Mr. Perry's style we save the firing, airing, watering &c., for this purpose. In all that space for four or six weeks, (the time of rooting), a saving in growing 50,000 vines, of not less, certainly, than \$500; this is what the mere saving of labor would be. But these houses need not be idle during the rooting of the Grape eyes. In the neighborhood of all large cities they can be advantageously used in growing cucumbers, lettuce, radishes, &c., or in cut-flowers, which are sold off in time to receive their vine crop.

Mr. Perry lays great stress on the fact that vines

grown by his system receive no check in transplanting to the open ground,—neither do they from pots;—yet it is an open question if this non-disturbance of the root is of much importance if the soil is in the proper condition that it should be to receive them, for the moiety of the root that the vine has when planted from the propagating house has got but little to do with its Summer growth.

Now as regards the originality of the discovery, even as applied to Grape-vines. I adopted the very same practice (for want of pots), nearly twenty years ago, when in charge of the Graperies of C. F. Spang, of Pittsburg, Pa., but as I was not fortunate enough to patent my "invention," I have allowed Mr. Perry to get the inside track, to which he is most heartily welcome.

I consider the man peculiarly unfortunate who asks a patent for what he thinks to be a discovery in horticulture, for there is a free-masonry about the craft that begets a generous exchange of information, and he that holds a secret to himself or entrenches his "discovery" behind a patent-right, is not usually benefited thereby.

But Mr. Perry's is not the only discovery in vine culture this season that has been brought to light. He must look out for his laurels. There is "another Richard in the field." A worthy from "the land of steady habits,"—the land of Barnum, and of wooden nutmegs,—rather suggestive, perhaps, but no matter. Discoverer No. 2 is destined to knock discoverer No. 1 all to "smithereens," inasmuch as he tells us in advance (in a printed circular just received), that he will not "taint this brilliant discovery,"—this "gift of God to man,"—with any such "mercenary appendage" as a patent. He is far too liberal and magnanimous for that. It is still, however, "a secret," which he will give to the admiring, grateful public all in good time. At present he has a few of the productions of this wonderful discovery, for sale at prices so inviting that he is obliged to warn us in advance that his "supply for next Spring is limited to one million," to console those unfortunates whose tardiness places them last on the roll of succession.

I know it is not fair to tell tales out of school,—and the gentleman may consider me very unkind if I forestall him in giving the secret of this "wonderful discovery" to the world through the medium of the *Gardener's Monthly* before the "proper time,"—but it can't be helped. I never was good at keeping a secret,—and this one is no breach of confidence, for it is, at yet, locked in the bosom of the mighty discoverer. Therefore, should the momentous intelligence electrify the vine growing

world,—should Iona Island be sunk with the shock, —or the crystal cities of Flushing or Rochester be shivered to atoms,—the secret, like murder, “must out.”

In this printed circular is a cut of a vine cutting, about three inches long, from the base of which is shown a few roots of about a half an inch in length. This is the result of this wonderful advance in horticultural science. But how produced? The great man tells us “not by the beaten track trod for centuries and detailed by a galaxy of high names known to horticultural fame,”—“not by being steamed by the sickly heat of a glass-pen,”—but is the “result of the immutable, organic laws of physiology and chemistry.”

The plain English of all this nonsense is that it had so happened that some bunches of vine cuttings placed in sand, moss or soil, in a close box or cellar of the old gentleman, had emitted roots exactly as they had done from the days of Adam,—under the same conditions.

It possibly was new to the old gentleman, and surprised and pleased him to think that such minds as he says as “Liebig, Lindley, Loudon or Meehan,” were unable to take a practical advantage of this “immutable law,” and that for him was reserved the honor, the glory and the *gain* of the discovery.

I need not tell your practical readers that cuttings of Grape-vines or any thing else rooted in this way are all but worthless,—worthless at least, to take from their dark enclosure and plant at once in the open ground, which is what the gentleman recommended. True, he does not say where they are taken from, or how they are rooted, for it is not yet the “proper time” to tell the secret; but if he can get roots on a Grape-vine cutting, in the manner he shows, without starting the eyes, otherwise than by excluding the light,—then it must be that the “immutable organic laws of physiology and chemistry” are beginning to change.

This “skillful discoverer” as he styles himself, is horrified at the system of growing the vine in propagating houses and “glass pens;” which he tells us is the sole cause of paralyzing vines seen all over the country, and that his discovery will ensure universal health and vigor.

It is hard to say whether this man's ignorance or presumption most predominates; for ignorant he must be of the nature of the vine if he thinks it can be injured by being started under glass,—and presumptuous indeed to set up his few year's experience in a one-horse town, against the universal practice of hundreds of the best talent of the country. All practical gardeners know that the hue and

ery against vines or other plants propagated or grown under glass, is only confined to men of but a few years' experience like our discoverer, whose early experiences probably were confined to the lap-board or lapstone,—and to which for the honor of trade they had better remained.

This gentleman heads his card “To the Public,” and requests it to be posted up. I could think of no better place to post him than the *Monthly*.

[Mr. Henderson favors us with a sight of this interesting document. Enterprise is evidently profitable. There is yet plenty more chances for fortunes, which, from time to time, we shall offer as premiums to the subscribers to the *Gardener's Monthly*,—on the present occasion we shall offer only two.

1st. He who will furnish the publisher with the largest list of subscribers, at \$2 each, before the first of January we will allow to patent the exclusive right to use salt for the growth of Asparagus.

2d. That unsuccessful labor may not go altogether unrewarded, he who produces the next largest list shall have the right to use soap suds for growing celery.

Neither of these useful recipes have yet been patented;—and as priority of claim before the patent genii seems to be the only rule of action with them,—we hope our friends will work with a will. As every one who grows these delicious vegetables, will give “any thing” for the “patent-right;” and the right will, therefore, be worth “millions” we shall hope for at least a thousand subscribers from the one who applies for the highest premium.—ED.]

WHAT IS THE ETYMOLOGY OF GARDENER?

BY WALTER ELDER, PHILADELPHIA.

Lexicographers say, “One who cultivates gardens,” but the literal meaning is, *One who is skilled in all the branches of horticulture*: which requires a score of years of practice, study and keen observation to attain.

A lad of sixteen goes to learn gardening, and is forty years old when he is a proficient gardener. He first goes to the vegetable garden, and learns how and when to apply manure, the quantity and quality most suitable for the various soils and crops; and, in digging, to turn the earth upside-down, to make a new soil for every new crop, and breaking it fine, that the atmospheric air may penetrate every particle and enhance its fertility; how to improve poor soils by draining, tillage, and how and when to sow all kinds of seeds, and to know them

by sight; how deep and distant apart the drills for the seeds of the different genera, and how long a time it is for each genus to show its young plants above ground after the seeds are sown, and how long after that until they are mature for use; when they are fit for use, and when they become too stale, to be removed to give place to succeeding crops; to know those that perfect themselves as they are sown; those that need thinning out and those that need to be transplanted; when and how to thin out and transplant, and the proper distances apart the plants should stand; to know weeds from the crops, and how to destroy them; the value of stirring the soil to accelerate the growth of the crops; a proper system of rotative cropping, so as to get the greatest amount of produce from the soil with the least labor and expense, and without exhausting the soil; when to harvest the late crops, and how to store and preserve them through the winter, so as to have a supply all the year round; how to nurse tender exotics in hotbeds, pits and cold frames, to get them early; how to read the organs of reproduction and understand the laws of reproduction; to manage aright the crops whose seeds and fruits are only fit to use; the habits and depredations of insects that prey upon his crops, and how to prevent their ravages; to know that allowing crops to ripen seeds for sowing next year is a loss of his own time, a loss of the use of the soil, and a loss of second crops; how to make plantations of perennial crops, and how long they should occupy the same ground. After having acquired all the above knowledge, he is styled a *Vegetable Gardener*.

He next goes to the fruit garden, and finds himself well advanced in this by the knowledge he gained in the vegetable garden. But transplanting is different, and many of the plants are set far apart, and require some years of nursing before they yield fruits. The causes and cures of diseases and failures are to be learned. Pruning and training of the various kinds of trees, shrubs and vines, are very intricate, and the proper times for their performance and the arts of performing require many years of experience and deep study. A higher knowledge of Botany and Entomology is needed to insure fruitfulness, and prevent the ravages of insects. As toads devour thousands of insects in the vegetable garden, so birds devour millions in the fruit garden. The proper kinds of soil, localities, exposures and aspects for the various fruiting plants have all to be learned, and also the time of ripening of all the different genera; when to gather in the late fruits, and how to preserve them from decay until new

fruits ripen again; how many years the plant should occupy the same ground; the forcing of fruits in glass houses during winter, and the care and temperature they require, is all to be learned. The great multiplicity of names and the similarity of varieties sorely tax the brain, but they must be learned. When and how to graft and bud, so as to get new varieties early into a fruiting state upon old trees; heading down trees of poor kinds, and re-heading them with better varieties. After having obtained all the above knowledge and much more, he is a *Fruit Gardener*.

He next goes to the flower garden, where the great multitude of genera, species and varieties are almost incomprehensible; yet their names, natures, where they came from, what class and order they belong to, and how to grow them, have all to be learned by sore taxation of the brain. This is the real gem of gardening, and a man feels high to be styled a *Flower Gardener*.

He next goes to landscape-gardening, which requires the greatest expansion of mind and comprehension of ideas. Instead of acres in vegetable and fruit gardens, and peaches, glass-houses and flower-pots in flower gardens, he now requires hundreds of acres; and instead of Cabbages, berry bushes and Tulips in the other gardens, he now grapples with great trees of the forest. He must learn the sizes and forms they attain at maturity, their different shades and sizes of foliage, how long they are annually clothed with foliage, their time of blooming, and the colors and sizes of their blooms; where they should be set, and what effect they will impart to the grounds; the proper preparation of the soil and times of transplanting, and the effect they will have in after years; grading of the grounds, making roads and paths, and the purpose of making them; the best spots for the entrances to the grounds, and whether straight avenues or winding are most in unison with good taste upon differently situated grounds; the best locations for vegetable garden, fruit garden, flower garden, glass-houses, and the best modes of constructing glass-houses and the most economical system of artificially heating them in winter; the different styles of embellishing the grounds with trees, flowers, &c., so that harmony of style will prevail in all parts of the grounds; the preserving of fine views, and shutting out of sight all unsightly objects; the various modes of fencing and enclosures for the different departments; how to lay down a lasting lawn, and the best kinds of grasses to sow. This is the master-piece of gardening, and it requires a master mind to conduct it.

Although the nurseryman and the seedsman are the

suppliers of the materials of the garden, their business is set apart from other gardening; so no gardener should waste his time in propagating and saving seeds in a small way. Rather strive to keep the establishment in good order, and keep up a supply of blooms and eatables all the year round. That will give satisfaction.

[We fear some of our young gardeners may suppose our correspondent's idea is that age alone will make a good gardener, which we are sure he does not mean. Thousands of men—gardeners, and of other trades and professions—"work at the business" for a whole life-time, and know nothing at all about their trade. Too many, we fear, depend on their age for their reputation, when a young man of judgment and talent will frequently be worth a score of them. The object of our correspondent is rather to show how varied are the requirements of a skilled gardener.—ED.]

FRUIT NOTES FROM LONG ISLAND.

BY J. H., NORTH HEMPSTEAD.

We are making fine progress in pomology, but there remains much yet to be done. Two things yet we are deficient in; one is the kinds of fruit adapted to each locality and soil, for some varieties of Apples and Pears will often succeed well in even one part of the field and not in another, one portion may be of the proper degree of moisture for a certain fruit and too wet for another, and vice versa. The other subject is the influence of the stock on the graft. Many orchardists have inferior varieties of fruit, and desire to renew them with better. We have found it is useless to undertake to graft some varieties over, as the graft will not take, and there are some kinds of scions that grow so slowly when set on old trees as to be unprofitable. Let any one try the difference with the Winter Nelis, Lawrence and other small twig kinds, and contrast with the Bartlett, Buffam, Meriam and other strong, upright growing varieties.

We had several fine trees of the Heathcot; and after bearing a few times we condemned them, and grafted many better varieties on them. The consequence is, several have died and the others probably will soon follow. The like success attends the Louise Bonne de Jersey. The Madeilene has not succeeded well, and several varieties of Apples we have tried appear not to be congenial to other kinds grafted on them.

This subject, no doubt, will claim the attention of pomologists more after they have settled what varieties are adapted to certain localities. Had we

known this twenty years ago, we would not have had trees planted at that time which have not borne a peck of good fruit, while others, with the same care, have borne many barrels.

A CHAPTER ON TOMATOES.

BY CHRONICLER.

The *Extra Early*—Bears large crops of good fruit, of medium size and scarlet crimson color, which ripens a fortnight in advance of all others; hence, it is prized in private families, and brings a higher price in market than any other variety. We have grown acres of it, and sold the fruit for \$12 per bushel, and by the time the later varieties ripened, the price was down to \$1 per bushel. But when the soil and air gets moist in Fall the fruit mildews and rots badly, therefore, later and more solid varieties are necessary to keep up a supply through the Autumn, until frost cuts them off.

The best late varieties are the *Favorite* and *Tilden*, their fruits are more round, solid and full of flesh than any others; of uniform, medium size, and scarlet crimson color; free of hard core and hollow heart, and less subject to rot than any other; and of the best quality. Both crack in hot, dry weather; the *Tilden* more so. But that does not cause rot, nor injure the quality. The flesh of the *Favorite* is of crimson color, buttery and sweet; the juice is sweet and elastic, like syrup. The flesh of the *Tilden* is pale red and the core buff color; the inner flesh is buttery and pleasant. There is a solid rind of flesh inside of the skin, a quarter of an inch thick, of an agreeable flavor; that rind is a safeguard against injury in transporting the fruit to market. The juice is sprightly and pleasant, and contains more vital essence than that of any other variety; in short, the *Tilden* is the *best* and the *Favorite* stands *next best*; yet each has peculiar virtues of itself, which the other has not, therefore both should be grown to make a good whole.

The varieties should be grown as remote from each other as the extent of the grounds will admit of, for the reason that their fructifying influences, when they are in bloom, injure each other, and make the varieties impure, just as Cucumbers and Muskmelons destroy each other's flavor when growing close together. Cucumbers will taste of Melons and Melons taste of Cucumbers.

The following varieties of Tomatoes were formerly considered good:—

Large Smooth Red, Mammoth Red, Pear-shaped Red, Cherry Red, Fejee, Buff, Large Yellow, Plum Yellow and Cherry Yellow.

The Gardener's Monthly.

PHILADELPHIA, DECEMBER, 1866.

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

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INFLUENCE OF THE GRAFT ON THE STOCK.

It has been a mooted question for years, whether the graft exerts any influence on the stock, and if so, how much? The judgment of observers is not unanimous,—the most part, urging that there is no influence whatever.

The stock has an influence on the graft however, as the process of dwarfing demonstrates. A fast grower does not develop itself with near as much vigor on a weak growing stock as on a fast one. This, indeed, is the philosophy of dwarf fruit culture. Now, as it is a pretty well known fact that in almost all the active forces of nature two forces can scarcely combine without mutual influence on each other, we might almost expect some difference in the stock by the influence of the graft, as well as to find the graft influenced by the stock.

Experiments have often been made to test this matter, but little evidence has been collected in favor of the graft's influence. Muscat Grapes grafted on Hamburgs still produce Muscat Grapes,—and the upper half of a white Beet has been grafted on a red one when young, and the line of red and white has been preserved through the whole life of the Beet; and we believe a great many similar experiments with other things have resulted the same.

Yet we see things sometimes that scarcely admits of explanation in our present state of knowledge, that would indicate that some mutual influence is probable as well as possible.

If we take two Quince stocks of equal strength and vigor, and grow them as near as may be in similar circumstances; and graft on one a strong growing variety of Pear, and on the other a weak variety, we find the Quince stock on the fast growing Pear growing faster than the stock of the weak growing Pear,—and, indeed, we can get wood of a Quince on which a Pear has been grafted, much thicker than any quince would ever grow in the same time. So far as growth is concerned then the Pear graft has an influence,—and if there is an in-

fluence in one point why may there not be in some others?

We have noticed another instance where an influence on the stock was perceptible. A tree of *White Doyenne* Pear, which had borne nothing but worthless cracked fruit for years, had, three years ago, all its upper branches grafted with Bartletts, and the lower branches of the *White Doyenne* were suffered to remain. The growth of the Bartletts has been very strong, and their strength has been evidently communicated to the stock for several inches below the point of union. On one of these branches a sprout of the *Butter Pear*, growing just below the point of union, had been overlooked in the grafting, and the shoot bore last year clean perfect fruit,—all the rest of the tree being cracked and worthless as heretofore. The most probable influence in accounting for this is that this shoot had received its conditions of health from the Bartlett shoot above it.

That there is really a downward influence of some kind in plants is shown by occasional circumstances which vegetable physiologists stow away in their cabinets of curiosities. Some years ago the late Mr. William Reid, of Elizabeth, New Jersey, showed us some variegated Willows which he had grafted on some plain leaved varieties, and the variegations were pushing out all down the sides of the stock below the grafts. We do not remember whether the stem variegations were of the same varieties as the stem or the stock, which would be very interesting to know,—but we have an interesting note before us from a very intelligent Illinois correspondent, Mr. J. Stough, which shows that the influence downwards does carry with it the identity of the graft. He has a Mountain Ash on which is grafted, three feet from the ground, a Bartlett Pear; last year, *six inches below* the graft, a Pear sprout came out which is now seven inches long, and there are Mountain Ash sprouts above and below this Pear sprout. Mr. Stough takes great pride in preserving this curiosity, as well he may.

He informs us that he once had a Rose acacia, (*Robinia hispida*) grafted on the Black Locust (*R. pseudacacia*) which pushed out Rose acacia sprouts from the stem which tried to bear Rose acacia flowers, in every respect the shoots being as the grafts above it.

These are all very interesting facts, and have considerable bearing on the influence of the graft on the stock, and we should be very glad if our readers would be particularly on the look-out for similar freaks and report them to us.

BOSTON HORTICULTURE.—NO. 2.

At Dorchester Captain Austin has a very fine garden, in which the Pears are quite celebrated. Most of them are trained in vase form,—that is, the branches form a single circle, diverging a little at the top, or bending outward from the weight of fruit. The laterals from these leading branches are kept spurred in, and large clusters of very large fruit clothe the lengths of the branches. The crop this year was not heavy,—not so heavy as on trees treated by more popular systems,—but we were told this season was an exception, and that usually they bore as much as trees treated in the usual way.

Captain Austin's grounds seem to be kept up with remarkable care and neatness, which after all is one of the chief pleasures of a garden, though unfortunately not so often appreciated as it might be.

Riding to Cambridge, we found the nurseries of Messrs. Hovey & Co. The firm consists of Mr. C. M. Hovey, the well known editor of *Hovey's Magazine*, and Mr. P. B. Hovey. The former conducts the nursery, and the latter chiefly the seed department. Mr. P. B. Hovey is not much known by the horticultural public out of Boston,—but we found him a very pleasant gentleman, and highly spoken of by those who know him. So far as we could judge, the Hoveys, like most of the chief American nurserymen, have had to “work their way” with but moderate means at their commencement; and their beautiful nursery and grounds is creditable to their skill and enterprise. The entrance to the nursery grounds is by a straight drive, several hundred yards long, bounded on each side by very handsome specimens of Norway Spruces and other Evergreens, probably 50 feet high. This drive terminates in a handsome show-house; which itself is a very pretty object seen along the whole approach. This house is heated by hot water, now being put in thorough repair, but usually filled with plants in bloom brought from the other houses. The house, besides serving the useful purpose of creating a good impression, cuts off all view of a beautifully laid out piece of ground behind, until the visitor is desired to see it, and the effect in landscape art is very good. A winding walk environs this piece of ground, adding, by rare trees, shrubs and flowers, interest with every step. One of the specimens, which attracted us, was a young and thriving tree, raised by Mr. Hovey himself from the Charter Oak, which was itself now filled with acorns. The species is *Quercus alba*, the common white Oak. A course through these

grounds brings us to the nursery proper, where we find Pears,—Pears, in every direction,—they are mostly dwarfs, and are planted, in many cases, so close as 6 feet apart. They averaged about 20 to 30 feet high, and had been planted about that many years. Most of them were bearing very well, and Mr. Hovey estimated his crop at about 1200 bushels. Many of course would be small and inferior, others extra fine,—but he expected the average price from them all to be about \$3 per bushel. Bartletts were then bringing \$6. We found opinion divided as to the merits of Mr. H.'s close growing plan, some arguing that “every other one ought to be cut out,” and that they never ought to be allowed to grow so thick. The trees would each, no doubt, have been better by such extra care, but looking on it as a question of mere profit and loss,—we do not know but what Mr. Hovey's plan is the best. It is like the argument with railroad horses, some companies run their animals only every other day. It saves them, and they last longer. Others work them till broken down, then sell and buy new ones, and hard as the fate is for the poor horses, the hard-hearted corporations say they make much larger profits by this course. The poor tree we suspect, go the same road. Most of Mr. Hovey's dwarf Pears have rooted from the Pear stock, and thus are not to be taken as illustrations of how long the Pear will produce profitably on the Quince stock. Mr. Hovey says some varieties root with remarkable freedom from the Pear stock, while others scarcely at all; though he thinks all will in time.

We think soil has much to do with this encouragement of rooting Pears,—we have never seen an instance of the Pear rooting out over the Quince in the heavy soils of Pennsylvania, while in New Jersey it is common. The soil of Mr. Hovey's nursery is just like Jersey soil,—a black sandy and gravelly peat. Amongst the varieties of Pears we noted none that struck us particularly by their novelty, but the Dana's Hovey, which was remarkably healthy, and an excellent little Pear. Mr. Hovey uses sea-weed largely as a mulch, and finds great benefit from its use.

The Strawberry plantation was interesting from the fact that we seldom saw so much trouble taken to get good plants for customers. The runners are pegged down into the sand as soon as they are long enough,—they then take root immediately, and are fine, strong plants by the time they are called for. The Hovey's Seedling as we found by questioning horticulturists we met, was still the chief favorite with growers here. They, however,

attribute their success to their "knowing the secret of its peculiar treatment,"—chiefly we believe to their using the Boston Pine as a fertilizer for it; they do not think any other hermaphrodite would do as well.

In growing hardy Grapes Mr. H. strikes them from eyes early in Spring, then plants them in good soil in the open air, with temporary glass frames over them,—as soon as they are well established the glass is gradually removed.

Pears, Grapes and Strawberries seem the main fruits of the Bostonians. We saw few Apples, Plums, Gooseberries, Currants or other fruits at Mr. Hovey's or any where,—though as it was raining the whole time of our visit, it may be our impression would be corrected had we been able to look about us more.

In the ornamental department Mr. Hovey's collection excelled in the Rhododendron. They were here by the hundred—magnificent plants, and growing with as much health and vigor as any thing Waterer & Godfrey ever showed.

The older plant-houses are scattered, and used for strong, larger specimens. Several ranges have more recently been erected, on the long, low, narrow principle, and all attached lengthwise, on the plan which, since Mr. Henderson brought them prominently before the American public in the *Gardener's Monthly*, is now known through the country as Henderson's system. Attention is chiefly given to raising bouquet flowers and bedding plants,—but the collection of rare hot and greenhouse plants is very good, and much enterprise shown in adding to it annually such novelties as may probably prove interesting. Just now one of the best introductions here is Fortune's new Saxifrage. This is allied, although evidently a different species to *S. sarmentosa*, and the leaves are variegated with pinkish white. The old *S. sarmentosa* is itself one of the very best basket plants,—and we predict for this new one a large popular demand.

A couple of miles still further forward above Hovey's nurseries, from Boston, is the Cambridge Botanic Garden, at once a source of pride and sorrow to Americans.

Here are the materials and the intelligence necessary to form a botanical establishment that would equal Kew or the most famous botanical gardens of the old world, and yet so crippled for funds, that we are sure it is nothing but the truth to say that Europe derives more benefit from the labors of Dr. Gray at Cambridge than Americans do. A great number of new plants that annually appear in Eng-

land are from seeds obtained from Cambridge. The great eminence of Dr. Gray induces collectors of new or doubtful plants to send them to Cambridge for determination, and thus it becomes a centre of much that is new or rare. By private liberality the Herbarium has been placed in a creditable condition,—but the garden remains to be cared for as well. If the citizens of Massachusetts could only be made to understand the real value of the materials here collected together, and the rare opportunities they have to make use of them, we are quite sure State aid would be invoked to place the garden on a basis which would be an honor to Massachusetts, and a source of pride to the whole United States.

NEW HORTICULTURAL HALL, PHILA.

We give as a Frontispiece, for the present volume of the *Gardener's Monthly*, a cut of the new Horticultural Hall.

It will be the largest public hall in Philadelphia, and, as representing Horticulture and its influence, will possess an interest to all our readers, especially as the good results of the Pennsylvania Horticultural Society by its lectures and free competition to all the country, members or not, renders the usefulness of the society more universal than is usual with such local institutions.

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.

"*THUJA JAPONICA*" OF THE AGRICULTURAL DEPARTMENT—*R. Buist, Rosedale Nurseries*.—"In the November No. of the *Gardener's Monthly*, page 340, you request a specimen with seed of the plant introduced into the Washington Agricultural Department as '*Thuja japonica*.' Herewith you have the specimen from the Washington stock, growing in our grounds. It is no doubt *Retinospora pisifera*, with us as hardy as an American Arborvitæ, and the greenest of the green in the Winter season, of rapid growth and easy culture; it is the only serviceable article sent by Mr. Fortune for his 8000 or 10,000 dollars of which the Agricultural Department made some capital, but ignored the *Retinospora*, and put the accent on the Tea seeds. The whole of the *Retinosporas* and *Thujopsis* recently received by private capital from Japan are surprisingly beautiful.

[We have had the specimens sent compared with wild specimens of *Retinospora pisifera* collected in Japan, and it is undoubtedly that plant. The fruit adds very much to the beauty of the plant, which is not often the case with allied plants. The name *pisifera* or "pea-bearing" is very appropriate, the plant being covered with peas when in fruit.]

LYGODIUM PALMATUM—*G. Such, South Amboy, N. J.*, says:—"If *J. F., Dayton, O.*, will send me his address, I will give him a plant of *Lygodium palmatum*. It grows in our woods."

WHITE OR BLACK GRAPES—"Young Reader" writes:—"It astonishes me to read pomological descriptions and note how vague are the terms employed where accuracy might be expected if anywhere. In the Grape for instance, many are described as *white*. Who ever saw a 'white' Grape? Why green colored Grapes are called 'white' is above my comprehension."

[We judge our young friend has just escaped from a logic chopping class at school, where he has been proving to his own satisfaction that a Chestnut Horse and a Horse Chestnut are one and the same thing.

If we were to speak of *green* Grapes it would be only confounding them with fruits unripe,—but the term *white* is used as the opposite of *black*, and rather in the sense of *light*, as against *dark*,—and seems as appropriate as any other term would be.

Our young friend never, of course, speaks of the *white* race of men. No doubt he calls them "pink men,"—or, when a little "toddied," they may be "rubicund specimens of the homo genus." Well all of us have our tastes.

ONE YEAR GRAPE VINES—*Mr. W. L. Nesbit, Lewisburg, Pa.*, sends us samples of Iona and Israella Grapes grown from eyes, and planted out in the open air. We never saw better one year old plants of any kind.

IVES' SEEDLING WINE—One of our friends who was at Cleveland, and who is a good judge of wine, writes:—"The exhibition of wine was large and the quality of some kinds very fine. The Ives' Seedling makes a red wine, superior to any thing of the kind in our country, and is destined to create a sensation at home and abroad. The Germans are now paying \$6 per gallon for it, fresh from the mill, that is, crop of 1866."

LARGE CATILLAC PEAR—*C. Crucknell, Pottsville, Pa.*—"I sold a Catillac Pear a few days since for fifty cents, which measured twelve inches in circumference and weighed nineteen and a half ounces. Can any of your readers beat it."

ROSE GRAFTING—*C. K. Pepan, Baltimore, Md.*, writes:—"Will you please inform me through the *Gardener's Monthly* what you think of the enclosed mode of grafting the Rose. I find it to grow very readily, and the smallest wood will answer best if it is ripe, or hard wood. Will it answer in bringing seedlings to perfection?"



[The specimens sent have grown very well, and it will, no doubt, often be found useful.

The sprout is cut thin and run under the bark as soon as it will rise in the Spring.

It is rather a method of Spring budding than grafting.]

STRAWBERRIES—*Wm. R. Prince, Flushing, N. Y.*—"I sent you two articles containing precise descriptions of the most estimable varieties of Strawberries which were published in your September and October numbers. They were, as I stated, the result of careful observation by Prof. Huntsman and myself. I now say that if any intelligent and honorable man can point out a single error I will render him thanks. As regards my seedlings then described, including the Welcome and Globose Scarlet, they are not in the possession of any one at Brooklyn or elsewhere on this island, and the most of them never left my grounds until the present Autumn.

"The man who has assailed the two above named *has never seen a plant of either*. He applied to purchase plants and was refused, and is not permitted to enter my premises. He is the same who described Napoleon III, Chili and the Austin to be the same, and who praised the Georgia Mammoth and other trash.

"The *Princesse Royale* and *Prince Imperial* are European varieties. The former is the great market berry of Paris, which I have correct, but which he has erroneously confused with a little trashy kind he calls *Haquin*.

"Not one of my new varieties has been sold except to special amateurs; and as I cultivate my collection for my own gratification, I shall restrict all sales to such only as do justice to its merits.

"You will see by Prof. Huntsman's recent communication to the American Institute, that he pronounces my collection superior to any other in existence.

"The Lady Finger and Monitor are almost unanimously rejected, and the Ida is the surest of all yet tested. The Welcome which I have only lately spared to four persons, has a marked character, distinct from every other cultivated variety.

"I communicate this point to you (privately) by which you can detect any one who falsely pretends to possess it. No one can have it, except as a favor, at any price."

[If we understand Mr. Prince right, the charge is that Mr. Cavanagh condemns varieties he has never tried. These are serious charges, and it is due to ourselves and readers that Mr. C. explain.]

OBITUARY.

COL. NELSON, of Macon, Georgia, a great nurseryman of middle Georgia, died very suddenly at the National Hotel, in Atlanta, on Sunday last.—*Daily Paper.*

Books, Catalogues, &c.

FOREST TREE CULTURIST.—By Andrew S. Fuller. New York:—Published by Messrs. Woodwards. A small octavo of 180 pages.

On looking carefully through this book of Mr. Fuller's we find much, both in the practical details of culture, and in matters more strictly scientific, which do not agree with our own observations,—but nevertheless there is so much that is really useful that we can cordially recommend it to all interested in the growth of forest trees, as a book which will fully repay a careful perusal and study.

WOODWARD'S ARCHITECTURE.—A Rural Annual, No. 1, 1867. By Geo. E. & F. W. Woodward, Editors of the *Horticulturist*.

A very pretty, small book filled with plans and designs for country seats, ice-houses, farm-cottages, fruit-drying-houses &c. A correspondent from Warrenton, Virginia, recently asked us to recommend some book with a good plan for a chicken-house,—but we know of none then to refer him to. This book supplies all such wants, and is one which the public will appreciate.

New and Rare Plants.

DAHLIA IMPERIALIS.—*Charles J. Power, South Framingham, Mass.*—"I send you this day, by mail, a flower of the 'Dahlia Imperialis.' The plant has been grown in a pot which was sunk in the ground till the approach of cold weather, when it was put in the greenhouse.

"The following, by a French horticulturist, gives a perfect description of the plant:

"This magnificent species of the genus Dahlia, planted in the open border in May last, has now (September) reached the prodigious height of ten feet. The majestic habit, graceful foliage, elegantly cut and large drooping white bell-shaped flowers, justly entitle it to the appellation of Dahlia Imperialis. Covered with a multitude of buds and full-blown flowers, it presented a most enchanting effect; these are large, and remind one of the Lily; they are of a transparent white, and each petal is shaded with delicate rose from the base to the point, producing a fine effect."

"I expect to be able to flower it next season, in September, as I have some fine young roots which I intend growing during the Winter so as to have strong plants to set out in May or June next."

[No doubt this can be improved as the old Dahlias have been and a new race originated. We are obliged for the specimen sent.]

New and Rare Fruits.

THE BRONX PEAR.—This fruit was first brought to our notice some years ago by the Rev. Wm. Clift, Comptroller of Woodlawn Cemetery.

It was raised by James P. Swain, Esq., of Bronxville, about the year 1850, the last year that the horticultural exhibition of the American Institute was held in Castle Garden. The parentage has not been definitely ascertained. A large quantity of seeds taken from Pears exhibited at the Institute that year were planted. The result of the last thing left only five hardy seedlings, and these were subsequently reduced by accident to three.

The first of these proved to be an early bearer, giving fruit in its ninth year, and was named by Mr. Swain, the Bronx, from the river of its birth place. The original tree is an upright grower, inclined to assume a pyramidal shape without the use of the knife. The limbs droop somewhat with age and full bearing. The wood is of a reddish-

brown color, and has never shown the least disposition to blight. The foliage is a bright glossy green, and is retained until the close of the season. It is a regular and abundant bearer, setting fruit three or four inches apart, and retaining it until ready for picking. It has borne regularly abundant crops for seven years.

Fruit medium, obovate pyriform. Skin dull greenish yellow, thickly sprinkled with russet dots, which frequently run together and form patches of russet, especially near the stem and calyx, where the skin is often completely russeted. Stem about 1½ inches long, moderately stout and enlarged at its insertion, which is usually in a well marked, uneven cavity, though in some specimens, where the form approaches to turbinate, the cavity is wanting. Calyx open, with short segments, set in a slight and obscurely furrowed basin. Flesh, yellowish white, slightly coarse grained, very juicy and melting—sweet and rich, and when well-ripened, with a delicate perfume. Season, from first to middle of September.—*American Agriculturist*.

SUFFOLK BEAUTY APPLE.—This is a new variety received by us from H. H. & E. L. Brown, Deer Park, Long Island. As our pomologists have given us no system for classifying Apples that enables us to describe them naturally, we can only say that it belongs to what we should call, if we were making a classification, the "Rambo family." The specimens before us are about 2½ inches wide by 2 deep, that is oblate, though tapering somewhat towards the apex. The basin is small and shallow, and the calyx small and mostly closed. The stem cavity is of medium depth; the stem an inch long and slender. The color is yellowish white, with a few dark green dots, and with a little russet near the stem. The delicate white flesh is of an agreeable subacid flavor. It is represented to us as a free grower, early and abundant bearer, and to be in season from 10th of August to first of October.

FINE PEACHES IN OCTOBER.—On the 15th of October, William Parry, of Cinnaminson, N. J., presented us with a very large white Peach with a handsome blush on one side; flesh white, sweet, juicy and delicious; measuring ten and a quarter inches in circumference, and weighing nine and a quarter ounces, which he had received from J. H. Ridgely, of Baltimore, with the following note:

"I send you a specimen of the Peaches grown on my tree in our city yard. I found a young shoot on the premises in August of 1861, removed it to a better spot and have nurtured it carefully; it is now

a large tree, has borne about 150 Peaches this season, one of which weighed 12 ounces, and measured over 11 inches in circumference.

"The specimen now sent is smaller. None matured earlier than the 25th of September, and some are now ripening. The Peach is probably a variety of the Heath, but has a fine blush, as you see. It is pronounced by fruit growers a very choice variety, worth special attention. The tree was closely trimmed last year and there is on it a fine growth of young shoots. I should like to have your opinion of its merits, &c."

The specimen shown here come fully up to the above description, and is probably a seedling as we cannot identify it with any known variety. It is certainly deserving of a more extended trial, and if it succeeds as well elsewhere, will be a valuable acquisition to our list of late Peaches.

MR. ARNOLD'S HYBRID GRAPES.—We have received from Mr. Charles Arnold four kinds of his seedling Clinton Grapes, and must confess that we consider them the most important additions made to Grape improvement since the appearance of the Concord Grape.

Many have believed that improvement in the Clinton direction is the proper course if we would have healthy Grapes,—we think so to. These are greater successes, however, than could have been anticipated.

Foreign Intelligence.

SOURCES OF VEGETABLE OILS.—A very large white pea is grown near Shanghai, in China, from which oil is extracted for burning. So extensively is this article used, that from Shanghai alone £2,000,000 worth is yearly distributed over China. This leguminous plant is called teuss. There is another Chinese production called the tea oil, said to be produced from the seeds of a species of the two genera, thea and Camellia, which oil is nearly unknown in Europe. When fresh it is quite free from smell, of a pale yellow tint and devoid of sediment. It resists a cold of 40 degrees, and its density is 227. It burns with a remarkably clear white flame. This oil might prove an important article of commerce in the East, because in its properties it is superior to cocoonut oil, and the other oils used for burning.

From the leaves of the Australian Eucalypt an oil can be prepared of equal utility to the cajeput

oil of the East. Among the various kinds of oils used in Northern Germany, especially in the kingdom of Hanover, that extracted from the nuts of the Beech is deserving of notice. Beech oil does not play a prominent part in commerce, nor is it likely to do so, owing to the fact that it cannot be obtained in large quantities. The country people who collect the nuts, or who cause them to be collected, use the greater part of the oil extracted from them in their household, and dispose only of the remaining fraction. About the beginning of November, the nuts are gathered either by picking up those which have fallen to the ground, or by spreading large sheets under the trees and beating the branches with poles, so as to cause the nuts to separate from them.

Twenty-five pounds of nuts yield about five lbs. of oil. The oil is of a pale yellow color, and has an extremely agreeable taste. It is often adulterated with walnut oil; the latter is even sold as Beech oil, and this may account for the difference of opinion respecting the quality of Beech oil. The towns people use it chiefly as salad oil, but the peasantry employ it as a substitute for butter, etc.; and only when there has been a good harvest of nuts, for burning in their lamps. The nuts are, after the oil has been expressed, made into cakes about nine inches square and an inch and a half thick; these are used for combustibles.—*Technologist.*

STRIKING CUTTINGS IN WATER. We like to see striking in water and sand and water, and it is a pretty amusement; but then the cuttings must be looked after as soon as the roots are formed, and transferred to nice, warm, sandy soil. When much is done it is as well to place the cuttings in material in which they will stand and flourish some time after they are struck, and hence we prefer, after good drainage, light sandy loam and a little leaf mould, with a slight coating of sand on the surface, which, if kept rather moist, will prevent air penetrating to and exhausting the base of the cutting. In proportion to the additional heat used in striking cuttings, so will greater care be required in hardening off the cuttings afterwards. Those with but few conveniences should do most of their propagating in summer and autumn. The sun will then give the heat which must now be supplied artificially by fire or fermenting material.—*Collage Gardener.*

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING.

Mr. Fuller's Essay. (See page 355.)

A large and appreciative audience was in attendance. The Corresponding Secretary stated that Mr. Fuller wished an apology to be made for his Essay, as he expected to be on personally, and to correct as he read it himself.

Mr. D. Rodney King expressed his great interest in Mr. Fuller's remarks. No greater evidence of the improved success of Grape culture could be afforded than the present fully supplied markets. A few years ago there were few to be seen; now they were abundant, and yet the prices had risen with the increased quantity, owing to the increased demand. The President said he would like to hear Mr. Meehan on Mr. Fuller's Essay.

Mr. Meehan said he agreed with most that Mr. Fuller had advanced, but did not think soil, aspect, winds, insects, or any of the reasons usually advanced to account for failures were satisfactory.—He attached very little importance to mere soil or situation. In every part of the United States, and in every soil,—even in almost impassable swamps, as well as on mountain sides,—wild Grapes grew vigorous and healthy, and bore fruit abundantly. The trouble, whatever it might be, must, therefore, be in some way connected with the treatment or management of the Vine.

Mr. J. E. Mitchell believed it essential to successful out-door culture that the air should be, to some extent, moist. Why could we not grow the foreign vine in the open air? Simply, because the moist air of the vinery, where they succeeded so well, was wanting in our dry climate. He considered the Grape-culture in the open air never could be satisfactorily depended on. A cold vinery, on the other hand, was almost certain to produce good returns. He had a vineyard 11 years old, from which he never had a satisfactory crop; while his 7 year old cold grapery never failed. Mr. Kern's vineyard on the Schuylkill, which, last year, was so famous for its enormous crop, was, this year, almost a failure.

Mr. Meehan said the fact that Mr. Kern had once got an enormous crop from his vines was sufficient to prove that there could not be any thing in soil, situation or aspect radically unfavorable to Grape culture. He had seen these vines, and though they were a bad failure, there were wild Grapes in the woods and on the trees close by,

models of health and productiveness. If the cultivated ones failed, and the wild ones succeeded, it seemed but logical to look to some error in cultivation, and not to any impossibility. There must be some reason why Grapes growing over trees should do better than those over trellises.

Mr. Mitchell said the shade afforded by the trees was no doubt beneficial to the Grape-vine.

Mr. A. W. Harrison said he had proved, experimentally, that Grapes under glass revelled in sunlight, provided the air was sufficiently moist. He thought that some unfavorable condition of the soil was the reason for many failures. Grapes usually thrive well in volcanic soils, and an absence of sulphur in the soil might weaken their vitality. A slight tint of sulphur in the soil and atmosphere might be a benefit; again, the Grape naturally preferred mountain slopes, indicating the value of under-draining.

Mr. Meehan hoped gentlemen would not lose sight of the fact that wild Grapes over trees and bushes did well where none of the supposed essentials of successful cultivation existed. The sulphurous air of Pittsburg did not prevent failures there: and as for under-draining he could take friends to the swamps in the State of Delaware and show them wild Grapes as large as Isabellas, and black as jet, rambling over trees in places so wet that one could hardly get to the vines.

Mr. Robert Kilvington said that Mr. Meehan's observations were undoubtedly correct. He knew of a Catawba Grape, trained on a trellis, which was always a failure; but a branch which had got away from the trellis over to a tree, and had partially covered it, always brought its fruit to fine perfection. He had eaten, this year, from it, as fine Catawbaws as he had ever tasted.

Mr. Meehan again begged the indulgence of the meeting to hope that they would give this fact of Mr. Kilvington's due weight, yet it was an observation which any one might repeat for himself anywhere. What could climate, or soil, or aspect do that one-half a vine should not do well, while the other half should succeed on the tree? Clearly it was owing to some circumstances connecting the vine and the tree which did not exist between the vine and the trellis. He then attempted to account for it on philosophical principles, in connection with the nature and office of tendrils, in some lengthened remarks, for which we have no room here.

Mr. Thos. P. James remarked that if Mr. Meehan's views were correct, the vine might be grown to great perfection by strewing brush-wood over the ground and letting the vine run over it. He thought

however, Mr. M.'s theory scarcely consistent with some of the facts he himself had brought up to sustain it.

Mr. Charles H. Miller had seen Grapes growing admirably when left to grow naturally over a palefence along a garden boundary. There were Delawares and other choice varieties,—but, last year, the vines fell into the hands of a skilful pruner, who cut away and trained according to the highest principles of the art, and the vines were, since, nearly worthless. With regard to Mr. Mitchell's remarks about the success of the Grape in cold vineries, he said it must not be forgotten that, however managers of vines under glass might disagree about other things, there was always great care taken to prevent *over-cropping*. In the open air this was very rarely cared for. In fact, the idea seemed to be to trim so as to get very vigorous wood, which, in turn, produced an enormous crop, which ruined the vitality of the vine, and rendered it liable to all sorts of disorders. He thought vines rambling wild over fences or trees were not so liable to overbear as those trimmed and trained to trellises in the usual way.

Mr. Mitchell thought shade very important.

Miss Percival remarked that a friend of hers, well versed in European vine culture, had expressed to her his surprise that we did not remove the leaves from the vines, while the fruit was ripening, more than we did. There was something in the decay of the leaf, he thought, injurious to the vine, and the leaves should be taken off before they got so far as decay.

Mr. Lorin Blodgett had made the climate of the United States a special study, and also, somewhat, with reference to its influence on the Grape-vine. He believed the failure of the Grape were chiefly owing to climatic causes. He had explained this some years ago in an Essay published by him, and subsequent observations had confirmed him in the views there expressed. The climate at the west end of Lake Erie he had found to be about the most favorable in the Union for the success of the Grape; yet, even here, success was by no means uniform. On an average, the general Grape crop of the United States was a success one year out of three, yet it had been found that one full crop in three was a very profitable investment. He was sure that the best results would ensue where the vines were frequently renewed—as young vines had more natural vigor to resist depressing influences than elder plants.

Mr. Charles H. Miller was also in favor of at least frequent renewals of young wood in the Grape-vine. On motion of Mr. J. E. Mitchell, a vote of thanks

was tendered to Mr. Fuller for his able and interesting essay.

MASSACHUSETTS HORT. SOCIETY.

ANNUAL EXHIBITION.

The Hall of the Horticultural Society is one of Boston's attractive features, and a beautiful building of which our friends there may well be proud. Its cost was over \$200,000, and as a "paying investment" yields a good profit to the Society; yet it is not adapted to large exhibitions. The halls, one above the other, are only, each, about 50 feet square, and large contributions of fruits and flowers, on the present occasion, had to be declined for want of space. Still, the investment of the Society is a wise one; they will save annual expenses by having their own hall, add to their capital by the profits of the hall, and thus accumulate a fund, which they, otherwise, never would have had, with which to do something still more worthy of the cause.

It was a pleasure to us to find so many of the principal nurserymen and florists sustaining the Society by their presence and contributions—so unlike meetings we have seen in *all* other places, where one or two have to take the whole horticultural credit of the town on their shoulders. We met here fully two-thirds of the Boston Horticulturists, at different times of the exhibition, all of whom seemed to take the warmest interest in the success of the fair. Probably, the care given to make the meetings socially pleasant and profitable has something to do with this success. On each day of the exhibition the members of the committees make a point to dine together at one of the principal hotels, at which any distinguished Horticulturists from other cities, who may be visting the exhibitions, are invited guests. From personal experience we can say that these re-unions are very happy occasions, and gratifying to the participants.

Of the exhibition, the vegetables and fruits were finer than we have seen in any other exhibition.—The vegetables, particularly, interested us. The Cabbages were enormous:—Drumheads from A. S. Merrill, of Danvers, were 35 lbs. each; some Marblehead Cabbages from Seth Hathaway, 40 lbs.—The Savoy's, also, were enormous. The Onions were in great variety and profusion—the Danvers being the largest and best looking variety.

There were many fine varieties of Carrots, with the names of which we were not familiar, but seemed not distinct from older kinds. "French Horn," for instance, is probably the same as the old Early Short Horn.

The Potatoes were extremely numerous, as to va-

rieties, but not near equal to our Philadelphia productions in average size. Judging from the frequency of kinds exhibited—the Early Sebec and the Early Goodrich are the most popular kinds. The former has deep eyes, and so far, would give much waste;—but it may have other superior merits of quality, or extra earliness to recommend it. It is a flat, broadly oval-shaped, large sized tuber, with the sprouting end pinkish. An unfamiliar face was the "Davis Seedling," with a blood red skin, and general good appearance. The "Jersey" Peach Blow was not the Peach Blow usually seen in New Jersey.

C. W. Gleason had a very large number of unnamed seedlings of the late Mr. Goodrich, some of which may yet prove of value.

But if the Bostonians were "Small Potatoes," they were, at any rate, "Some Pumpkins;" for in this and the Squash line they were inimitable,—Boston Marrows, Hubbard, and many others were perfect monsters. We had heard that the Bostonians use the hollowed-out shell for sentry-boxes; from these specimens the "joke" may be not all a joke.

We never saw so many varieties of Tomato together. Whether really distinct enough to be worthy of naming we cannot say. J. D. Wolf had Tilden, Cook's Favorite and "Early Frame" together, all different, and the first named, by a long way, the best looking; the "Early Frame" next. "Spinney's Golden Striped" was showy. Hay's Early Prolific was shown in bunches, 18 to a bunch. Lester's Perfected, as grown in these collections, seemed the same as the "Fejee" of the Middle States. Among the other varieties were—"Valencia Cluster," "Red Plum," "Mexican," "Smooth Red," all like other things we have seen, and we came to the conclusion that the Tomato subject is getting "awfully mixed up."

Celery was generally shorter and thicker than in the Middle States, but whether the result of climate or peculiar varieties we could not learn,—the quality was excellent. Hill's Solid was a good kind.

Turnip-rooted Parsnips are not commonly grown, but are said to be of a more delicate flavor than the long ones.

A large silver cup was offered for the best Cauliflower. Competition was therefore lively. The winner, James H. Smith, had them one foot over, and so close and firm as to be almost like a solid piece of ivory.

As our space this month is limited, we will defer some notes on the fruits and flowers to a future number.

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