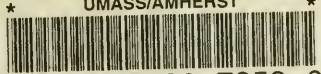


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CHAPEL



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Calabrian Raisin Grape.

DRAWN EXPRESSLY FOR "GARDENER'S MONTHLY," FROM BUNCH GROWN BY DR. G. P. FORBES.



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EDWIN S. BROWN

VOLUME V. 5

THE CHAPEL
OF THE
METHODIST EPISCOPAL CHURCH
IN THE CITY OF NEW YORK

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

JANUARY, 1863.

VOL. V.—NO. 1.

Hints for January.



GREENHOUSE.

The season of the year has arrived when this department of gardening is more attractive than any other. It is one that calls for a great part of a gardener's skill—indeed intelligent gardeners can seldom be found willing to accept a situation where there is "no glass."

Glass houses of late years have become so popular since their economical building has been better understood, that it is rare indeed that we do not find in most gardens, however small, the owners of which have any pretention to taste or elegance, a plant cabinet of some kind—whether it be a conservatory or greenhouse, large enough to demand the constant care of an intelligent gardener; or a small case of a few dozen plants, under the management of some lady of the family. The methods of culture of plants too are better understood than they were formerly. At one time specific directions were thought essential for nearly every variety of plant. Now a few general rules, varied to suit circumstances when once understood, render the culture of plants in a general sense, easy. Whereas, at one time as many variety of soils as there are drugs in an apothecary's store, and a prescription giving the exact proportions in weight or measure of each simple material was the rule for success; now any light rich porous loam answers for most purposes; and only those who seek great perfection in their par-

ticular fancies, pay particular attention to any great minutiae of soils.

The surface soil, containing the spongy mass of surface roots, from a wood; the first two inches of an old pasture-field; the turfy spongy mass called peat from sandy bogs or swamps; a little well decayed hot-bed manure; some sharp sand; are now about the only "elements" that the most skillful gardener cares to have beside him; and many a good gardener has to find himself minus of some of these, and be satisfied.

The soil for potting should be used rather dry; that is it should be in such a condition that it will rather crumble when pressed, than adhere closer together. Large pots—those over four inches should have a drainage. This is made by breaking up broken pots to the size of beans, putting them in the bottom a quarter or half an inch deep, and putting about an eighth of an inch of old moss or any similar rough material over the mass of "crocks" to keep out the earth from amongst it. Little benefit arises from draining pots below four inch, the moisture filtering through the porous pots quite fast enough; and the few pieces of "drainage" often thrown in with soil placed right over, is of little or no use.

In managing plants, treatment depends on what we want of them. If we want them to bloom as soon as possible we keep a high and moist temperature; if we wish to keep them back, we keep the temperature as low and dry as the plants will bear. In the *Camellia* for instance those we want to flower now, or soon, should have a temperature of 45° to 50°, and if the house be not naturally moist, should be often syringed with clear water, soft water when to be had, and always made, by adding warm water, of the same temperature as the house. If the flowers are not wanted till March or April, 38° or just above freezing, and the atmosphere as dry as possible at that degree, should be the rule. When *Camellias* are in bloom, if the house be kept moist, the temperature should not be allowed to fall suddenly, or moisture will condense on the

petals. For forcing we have generally found the strong growing kinds most successful: those of the Anemone-flowered section for instance. *Azaleas* require much the same treatment as *Camellias*. The best time for repotting these, as it is of almost every plant that requires but one yearly repotting, is just before the new buds start into growth. It is not well to have pots removed into larger ones, unless they are very full of roots; nor into a much larger one than the plant was in before. When too large a pot is employed much of the beneficial elements the soil contains is carried away by daily waterings before the roots get the benefit of it. Occasional repottings of fresh soil are advantageous to plants for the same reason.

This is the proper time to trim *camellias*, *azaleas* or any other strong-growing greenhouse plant, that may be desirable to bring into a good shape. Those shoots that are required to grow the fastest should be pruned in the most severely—those that are already strong and vigorous if in their right positions should be let alone. Sometimes a strong shoot is growing where it is not wanted, and cutting away might make the matter worse, as the young bud near the cut will push all the stronger for the pruning; but these are to be pinched right out after they push. Sometimes *Camellia* buds drop—most generally from injury to the root—the fibres either withering for want of water, or rotting from too much. An atmosphere in which the soil does not require frequent watering is the best security against this trouble. There is no sweeter pot plant than the *Daphne*. They like a cool and damp place. *Epacris*, *Acacius*, and most of these hard-wooded greenhouse plants, frequently suffer from too much heat at this season; 40° to 50° is quite enough for them. In England where these plants are grown to perfection, they never apply fire heat except when mats are insufficient to keep out frost. *Cinerarias*, *Fuchsias*, *Calceolarias*, *Pelargoniums*, and such soft wooded greenhouse plants, of which fine specimens are desired, should have their final shift now, their branches tied out a little so that every leaf has room to develop itself, and get all the light possible.

Many who have but the one house, manage to keep pretty well over winter things that are usually considered hot-house plants, by having one end of the greenhouse warmer than the other. Thus *Begonias*, *Allmandas*, *Melastomas* and such like have become almost greenhouse plants: besides the extra heat required, there is no difference to be made in their culture beyond what a *pelargonium* or *cineraria* would receive. The variegated begon-

nias as well as all the plants known as variegated or leaf plants, indeed require more shade than other perfect plants. Hot sun not only injures the foliage but checks the growth. Ferns and selaginellas, also like shade, particularly the latter, which are the most at home in shady situations.

Basket plants often suffer from want of water. If in a sunny spot they should be soaked twice, and if in shady rooms once a week.

The *Auricula* is getting popular as a spring flower now that its culture is understood, which is simply keeping it cool—frost does not hurt it if under glass. The only difficulty is in summer—our dry suns hurt it; but this is avoided by keeping sash over them all the time. *Pansies*, *Polyanthus* and *Daisies* require much the same treatment as *Auriculas*.

Much is said in books about admitting fresh air to plants: but take care to do so only on warm days. Fresh air is good when warm, but cold air is worse than none—there are always some crevices through which fresh air enters unless the house is very tight indeed, enough in fact to keep vegetation healthy.

In watering plants chose the morning. Watering almost always cools the soil, and it has the sun through the day to get up the temperature again. If cooled off at night, it remains so till morning, and the check is great. In summer we water in the evening for different results required.

Insects of course will be looked after at their very first appearance. The thrip, a very small lively long black insect,—the red spider, a minute red fellow that spins a very delicate web,—the green or black fly or aphid well known to every one,—the brown and white scale insect like miniature oysters,—and the mealy bug, are the most common, and most destructive. Where they are taken in time they may be kept down by any occasional crushing: where only a few plants have them, and these badly, hot-water at 130° dipping the plants a few times for a few seconds, is the best; for thrip and aphid, tobacco smoke is effectual, but should be given in small doses, several nights in succession, instead of only one full dose, which is liable to injure the foliage of many plants.

Those who grow Japan Lilies in pots, should plant them the end of this month. They do much the best in the open ground as they are perfectly hardy.

FRUIT AND FORCING DEPARTMENT.

In our last we gave general hints for the preparation of fruits for vinery and orchard house

management. Some few fast gardeners have started their fruits before this, and a portion of them should have their fruits in flower before this. These friends to our cause will require no hints from us. Those who come after in the second course, are now making preparations.

As the grapes get cleared away from the late vines prune them. Take off the old loose bark, and wash with a mixture of lime, soot and sulphur—also white wash, scrub and clean every part of the house. It is wonderful how many eggs of noxious insects are destroyed in this way. In starting vines 45° to 55° is high enough, increasing to 60° as the buds burst. Rub out all superfluous buds, as soon as practicable.

Be particular to keep the atmosphere of the house moist as possible at the starting. This is all important. As soon as the fruit-bunches appear, pinch off the shoot one bud above the bunch for the stronger shoots, and two buds above for the weaker; suffering very weak shoots to grow several points larger, if in a point where a shoot will be wanted next year. Do not pinch off the shoots all in one day. Pinch the strong ones first, and the weaker ones several days after; give air a very little, say half hour or so on every warm sunny day. If top ventilators are open too long the moisture will escape from the house, and thus the "fresh air" does not compensate, for light and moisture are the main thing. Fresh air will find its way through crevices in a great measure.

It is difficult to grow peaches, nectarines, apricots, plums, or cherries, with early vines; because when they are in flower the air must be rather dry, or the flowers do not set well—not too dry by any means, for that is as bad. The proper regulation of moisture in the atmosphere while these fruits are in flower is one of the secrets of success with them. A slight syringing however on the morning of a sunny day, when air can be put on and the house quickly dried, is of great benefit to them. As soon as the flowers fade, and the fruit appears set, the leaves usually begin to develop themselves. Then the house may be kept as moist as recommended for the grape vine, and with the same good results. These fruits however will not bear as high a temperature as the grape at first. As the fruit is fairly set, the temperature may be raised as high as we wish, according as very early fruit is desired, without much risk of failure.

Strawberries are easily forced—they do not require a temperature of over 55°. The pots should be kept as near the glass as they can be got—rather dry than moist, and always watered with warm

water—warmer than the house if possible, and if a few teaspoonfuls of guano are put to each gallon of water, they will be all the better for it. Red spider is very troublesome on early forced strawberries, and its first appearance should demand from the cultivator a warm reception.

The forcing of fruits is one of the most beautiful operations of gardening, and it well repays both in pleasure and profit any attention given to it.

Communications.

NOTES ON GRAPES.

BY MR. A. HUIDEKOPER, MEADVILLE, PA.

I SEND the result of my experience this season with some varieties of grapes in a cold vinery.

Golden Hamburg. A fine grower—bunches large, fruit very large, ripens early, and hangs well. Fruit very sweet and fine flavored. After the damaging remarks of Fox Meadow on this grape in the *Horticulturist*, I was agreeably disappointed in it, and do not share in his belief that it will be forgotten; but, on the contrary, believe that it will displace some of the Chasselas and Frontignac varieties heretofore cultivated.

Bowood Muscat. Large, fair, and ripens better than the Muscat of Alexandria, nay, possibly not quite equal to it in the flavor, but is altogether more desirable in its habit of setting fruit, &c.

Rose Chasselas. Sweet, early, pretty, but not high flavored.

Child's Superb. A showy, very white grape, ripens early, and hangs well; but not high flavored.

Bowker and Green Madeira. Two vines so labelled, from Mr. Prince proved exactly alike; vines made a rapid growth, fruit large, oval, green becoming yellow at maturity, showy, sweet, and insipid—vines rejected as soon as fruit cut.

Canadian Chief. Disposed to reject this in September, but by last of October the fruit was quite amber colored, very sweet and about as good as the Chasselas varieties to which it probably belongs—with the new larger varieties it is worth at best but a subordinate place in a nursery.

Delaware. I put a vine of this under glass to hurry up its growth, which is nothing extra out of doors. Fruit and berries very small, and seeds large. Burke makes smallness an element of beauty: which holds true in this instance. The fruit under glass is very beautiful, as well as sweet and fine flavored. It ripened its first cluster on the last week of July, two or three weeks ahead of any

thing else in the vinery. An amateur should grow a vine of it in a pot or interior place in a vinery for its earliness and beauty.

I say nothing of some of the the older varieties of exotic grapes fruited also, because they are too well known to justify comment.

I quite sympathise with some of your correspondents who mourn over nursery blunders, having lost five years in experimenting to get the Black Prince, the first time proving to be the Muscat Blanc hatif, which I had rejected on account of its habits, and the second the Black Hamburg, of which I had a superabundance.

The evil is without a remedy but a reference to it may prevent beginners from multiplying stock until the tree is proved by its fruit.

AMERICAN WINES.

BY MR. G. HUSMANN, HERMANN, MO.

In the November No. of your valuable journal, I find a report on American Wines, by Dr. Houghton, made at the request of the Fruit Growers Association of Eastern Pennsylvania, in which, among many good and sensible views, I find some which appear to me so one-sided, that I cannot, in justice to many wine growing districts forbear to make a few remarks about the Dr's. views on those points.

Points No. 1, 2, 3, of the Dr's. reports, are certainly, in every respect, well taken, and every true wine grower must heartily concur in them. It must disgust every true lover of the grape, to hear of, and taste the vile concoctions, made by adding sugar and alcohol, and other vile ingredients, and which are so generally consumed, and misnamed wine. Every grape, the juice of which will not make drinkable wine, without these additions, should be stricken from the list for wine-making at once.

So far, so good. But now comes No. 4, of the Dr's. points, where I must essentially differ from his views. I contest, that the Catawba is, at present, the leading wine grape of the Atlantic portion of the United States, although, perhaps, the most wine may be made from it. The Catawba has seen its day, and is daily sinking from the pre-eminence it once had, as the best American wine grape; as the merits of Norton's Virginia, Herbemont and Concord become more known. In this neighborhood, certainly one of the leading wine-growing locations of our Union, wine of the Norton's Virginia is already made by thousands of gallons, which is fully equal to the best Burgundy, if not superior; and the Concord will, doubtless, take the place of the Catawba, as a good still wine; whereas the

the Herbemont will make an excellent Madeira; or at least, a wine much resembling Madeira. The Cunningham and other grapes, have already produced wine, in small quantities, which will keep sweet for years; and I have no doubt the Clinton will make an excellent red wine in this locality.

So much for No. 4 and 5, and now we come to No. 6 of the Dr's. report. I emphatically deny, that, "the only wines that can probably be made in this country at present, are still, sour, hock wines, similar to the sour German and Hungarian wines, having barely sufficient grape sugar to keep them from becoming offensively sour, and a low per centage of alcohol. We have yet *no* grapes in general cultivation, *capable* of making wines having the rich saccharine alcohol, and highly flavored character, peculiar to the fine wines of France, Spain, and Madeira." So, so, are you there, Doctor? A fine character, indeed, you give to the young giant, so soon to become one of the leading interests of our Western States. But I can forgive you; taking it for granted, that you have never tasted, a glass of genuine Norton's Virginia, and Herbemont, as they are produced here. If you will take the trouble to cross the Alleghany Mountains and pay us a visit here, I think I can safely engage to send you back a converted man. I can well believe, that you cannot do better in Pennsylvania; but who would dream of looking for the wine district of America in the Eastern States? We *here, in the West*, have the country for wine-making; *good* wine, equal to the best of Europe; and were our sober, plodding German vintners as well up to advertising and puffs in the papers, as they are in Yankee-land; Norton's Virginia wine would already be known and appreciated throughout the civilized world. If you cannot come, drop me a line in February, and I will send you samples, not of the villainous compounds you so justly condemn, but of your grape juice, which will send a genial glow through your heart, and make you believe in American wines, made *our* side of the Alleghanies.

No. 7. As to the question of profit to be derived from the manufacture of light American wine, "it is believed that, as a branch of industry, it is rather more profitable where the grapes well ripen, than the cultivation of wheat or corn."

I should think it was, Doctor! Even the Catawba will average, in ten years a net return of \$250 per year per acre, which, taking it for granted, that a man will work and attend 3 acres per year, will make the return \$700. Deduct from this \$100, as interest from capital, etc., and you have a clear return for his labor of \$600 per year. When can a

man make this by raising wheat or corn? But plant Norton's Virginia, Concord and Herbemont, and this return will be doubled and trebled. They are with proper care, a *sure crop every year*. So I should think there was hope, even *strong* hope, for success in American wine making, *especially* in our own favored Missouri.

HARDY GRAPES.

BY DR. L. W. PUFFER, N. BRIDGEWATER, MASS.

HARTFORD Prolific ripens even and perfectly here. I do not notice the tendency to drop from the bunch, that is attributed by some to this variety. Diana with me, on the whole, is a failure. It ripens only about half or two thirds of the berries. The Concord is affected this year in the same manner. I did not notice it last year. Is it owing to our wet autumn? I should have considered it a fault of the border, but I know that it is composed of the right materials, well drained. All the vines treated alike. The Delaware, and how shall I speak in a proper manner of this beautiful grape. It ripens every berry, and such berries—perfection in small packages. I fruited it for the first time this fall, previous to which I thought Dr. Grant had exhausted the English language in furnishing adjectives to describe it. I beg his pardon for ever having supposed it could be too highly praised. Lenoir received from Dr. Grant grows profusely, bore three small bunches, a Concord next to it, same age, about half a bushel. The berries of the Lenoir are small, black, sour and late, not worth cultivating here, at least in my garden. The Roger's Hybrids are destined to make a noise in the Horticultural world. Another year I will report. I have them in cultivation, and am watching them with much interest.

INSIDE GRAPE BORDERS--CUTTING BACK CANES.

BY WM. BRIGHT, PHILADELPHIA.

DR. PUFFER'S article, on Inside Grape Borders, in the last number of the *Monthly*, reminds us of our promise to the public to give a full and faithful report, at the close of this season as to the success of our system of grape culture, inside borders, &c.

We now proceed to fulfil that promise. We have thought of heading this report as follows:—*"The Confession of William Bright, Grape-grower who humbly acknowledgeth his Errors."* We do in fact, candidly confess that in our zealous attempts to improve the culture of the grape, we have made some mistakes, which we ought to correct as speedily

as possible; and "here and now," as President Lincoln would say, we will endeavor to show what these mistakes were.

And first, as to cutting back canes after fruiting, on which our renewal system was based. We now find, after several years experience, that the cutting back to two eyes, which answers a good purpose in pot vine culture, and in the graperies when vines are young, will not answer at all when the vines are three or four years old, or more. The practice of cutting back, to get strong canes, has been almost universal among grape-growers, while vines are young, and it was not doubted, by any one, that the same practice would answer equally as well, at a later period of their growth. Among all the objections made to our plans, no question was even raised on the point. But where we least anticipated a defect in the system, a defect of the most serious and fatal nature has been discovered. It has positively been decided, by a great number of cultivators, in this country and in England, within the last year, that grape vines, more than two or three years old, cannot be cut back to two eyes, with a reasonable expectation of obtaining a strong cane from the new shoot. We believe there can no longer be any manner of doubt on this subject; we have tried it to our entire satisfaction, and so have many grape growers in our immediate vicinity. In the *London Florist and Pomologist*, for June, 1862, we found the practice condemned in the most emphatic terms; and we had before this entertained a shrewd suspicion that the facts bore hard against our proposed plan of renewing canes.

We now set it down as a fixed fact, that cutting back a cane, which has made extended roots, to two or three eyes, with the idea of obtaining a stronger cane, is an error—a mistake—a practice opposed to the nature of the plant—that it creates a disproportion between the top or stem and the roots, which if repeated will prove fatal to its existence.

For making this mistake we are ready to receive all the punishment that the Pomological world may think we deserve. We can only say in extenuation of our fault, that the practice was as old as vine culture, and no one would readily suspect that it could lead to such a fatal error when applied as we proposed.

The above, we have reason to think, is the "head and front of our offending." We cherish the belief that we have introduced some useful improvements into Grape Culture, and that the balance of our errors are of minor consequence.

To Dr. Puffer we must say, that honest and complete as this confession is intended to be, it does not include an acknowledgment that Inside Borders are a failure. On the contrary, we still claim that an inside border is the perfection of all borders, and that very early and very late grapes cannot be very successfully grown in any other border.

We at first thought that our Inside Borders would be found the most desirable for even Cold Graperies; but we are now disposed to concede that a modification of our plan may be best for many cultivators, and that for cold houses, a border partly outside may be found quite successful, and in some respects less troublesome and therefore more satisfactory.

The modification of our Inside Borders which we propose, is to make the border entirely across the house, with a concrete bottom, and separated from the sides and ends by brick work (to avoid frost) but not elevated above the floor, or suspended above air conductors. This may give nearly all the advantages of a suspended border, with less trouble in watering, and for a cold house, or even a heated one, would answer very well.

But the perfection of a Grape Border, for forcing early grapes, or keeping late ones, is an Inside Suspended Border, heated by hot water pipes running through chambers under the Border. This is the plan on which the best early and the longest-keeping late grapes are grown in England. In one instance in such a border (though partly outside) grapes ripened in August, have been kept on the vines, sound and plump, even till the rising sap in April started the vines into new growth, and burst the berries with excess of fluid. This extraordinary feat was achieved by Mr. Thomson, gardener to the Duke of Buccleuch, Dalkeith Park, Scotland, the successor, as gardener, to the famous Macintosh, author of that splendid work, "The Book of the Garden."

During the past two years we have had a good deal of experience in Border-making, which has been instructive, if not profitable in any other respect. We have found that more injury may be inflicted upon the roots of vines by over-manuring, and the use of improper materials in the substance of the border, than by almost any other cause. Among the substances employed as manures, we have seen much injury arise from the too free use of guano, superphosphate of lime, and wood ashes. Among the injurious substances put into the border we are of opinion that half-rotted leaf-mould, horse dung, and straw are perhaps the worst. We are convinced more strongly than ever, that the best

compost for a grape border, is half loam, nearly half sand and rotten rock, with a free supply of old lime rubbish and bone dust. No dung or leaf mould at all: and all manures applied sparingly by top-dressing.

Now, says the reader, if the renewal system, (by cutting back alternate canes,) will not answer, how shall I work my vines planted on that plan? We answer, take out a portion of the canes and bend the others over so as to bring them three feet apart, and prune them on the short spur system, which is probably the best plan now known.

Humble as we feel in view of our errors, still in view of what we do know "for certain" in relation to grape culture, we have undying faith in many of our old ideas, and chastened hope in respect to some of our new ones, which we shall proceed to develop and test, and finally "propound" to the ever indulgent public—*after the war*—if not sooner. So look out for *Bright Redivivus*, and a new work on Grape Culture, when cheaper paper and better times shall invite us to the task.

GUNNERA SCABRA.

BY JOSEPH AMRAM.

LET the multitude of amateurs not envy too much those mortals whom Providence has favored with glass-houses. For one, as long as I can't have my green-house I look down upon them. To be sure things often come across me, for the sake of which alone I wish I had a greenhouse. Begonias, for instance, I have quite an inordinate passion for them, and for leaf-plants in general. But for Begonias in particular. One of my reasons of partiality for them is perhaps my success in raising them in winter time in my room. I tried the modes set forth at various times in the *Gardener's Monthly*, and have raised many a plant from leaves and part of leaves, laying them down flat and standing them up perpendicularly or slanting. This winter I shall try to raise the bulbous roots themselves from the cut leaves of Begonias, according to the statement in this periodical in some number of last year. If I do succeed I shall, with the Editor's leave, make the proceeding public in the *Monthly*.

[We always welcome the results of experiments, —ED.]

To return however to the greenhouse, or rather to the want of one. I have said I like leaf-plants and as I cannot raise Begonias, Cissus, Cyanophyllum, India Rubber, etc., etc., I find my vent in a different way. Be it known then, that I am the happy owner of a pretty large lawn, to set off which

I have a few contrivances. For instance a pond like depression in which I grow ivy and periwinkles, the borders set round with lilies. Again clumps of honeysuckle creeping profusely over a lot of stone and rocks, an agglomeration, by the way of very many kinds of it. And now for leaf plants, I grow right in the middle of the lawn—say at forty yards distance from the walk—on a mound of the shape of a deep inverted saucer,—first, a castor oil plant which owing to good soil and fat manure assumes very large dimensions, then, round it, a circle of

Rhubarb, yes, Rhubarb! The whole lawn being of a gentle ascent, the red stalks of the Rhubarb are seen and, although "pieplant" is plenty and cheap, I do not the less admire its stalks and fine leaves.

I have just received from a friend in Europe a cut of another ornament in way of leaf plants called the *Gunnera scabra*, which I would be glad to know if yet introduced from Europe. I suppose at least that it is not yet common in our country, so I will here give a sketch which I think will be preferable to a description:—



Adding only that its large leaves, its way of flowering and its deep orange fruit give it a great charm and make it fit for any garden. It is a native, I believe, of Chili, attains its full vigor only by the middle of September. It probably cannot stand our winter and for fear of losing it I would cover it well with leaves and dirt through the winter.

[The *Gunnera scabra* is not only an interesting plant, but will no doubt be very popular for garden decoration.

These leaf plants are becoming as popular out of doors as the hot-house kinds are within, not only for the form and general effect of their various habits; but even in making masses. Two of the best clumps in a lawn we have seen this year were

of *Perilla Nankinensis*, which looks best from a distance, and *Amaranthus tricolor* beautiful in ribbon gardening.

As a rule these leaf plants should be placed away from buildings and frequented places. They are best seen from a distance.

We believe *Gunnera scabra* is not yet in the country.—ED.]

PLANTING STRAWBERRY BEDS.

BY D. S. PLEASANTS, POOLESVILLE, MD.

SEEING a communication in the *Gardener's Monthly*, from Y., of Germantown, on planting strawberry beds, I thought I would give my slight experience on both spring and fall planting.

One bed of two hundred plants of the Wilson's Albany, I planted about the middle of August. I set the plants two feet each way, and gave them two good waterings which set the plants nicely; I kept the bed clear of weeds, until late in the fall and the following spring mulched the ground with half rotted straw.

The result was we gathered from a half gallon to a gallon of strawberries per day, during strawberry season.

I set out about the same number of plants in the spring of the same variety and gave them at least a dozen waterings, and did not get more than a half gallon of berries from them during the season.

For a fine crop of strawberries I prefer to set out the plants as soon in July as the runners are well rooted.

GRAPE VINE BORDER.

BY "OLD PACKER," ROCHESTER, N. Y.

As I have to a certain degree, and in a very humble way, acted in advance on the suggestions recently thrown out by Mr. Saunders, relative to a grape vine border; I give the result for the benefit of others who like myself have but little time, and less money to devote to the pursuit of horticulture in its higher branches. For a description of my homely structure, I must refer to *Gardener's Monthly*, for March 1861, page 77.

In the six inches of earth over the one foot of water in the tank therein described, I planted in March, 1861, two Black Hamburg vines raised by myself from eyes the year previous—they were fair plants and that is all—through the year 1861 they grew finely, and had, by the fall of that year, made jointly, forty-five feet of cane, the which in December, 1861, I pruned down to about 30 feet jointly. In February, 1862, I allowed the water in the tanks to become warm by opening the connection with the boiler on my stove and in one week the canes commenced to bleed, and to continue so to do for *full one month* before a bud burst, and my expectations were that no fruit would ever greet me, but at the expiration of about one month the vines ceased to bleed, and commenced to break, certainly not evenly but some buds very strong. Knowing how easy it is to raise new vines I was not over anxious to disbud or destroy bunches which showed themselves but determined pretty much to fruit all the branches that showed, even, if it did destroy the vines; the result has been that I gathered in eighteen months from planting 32 bunches of fruit, none weighing less than one pound, and the majority nearly two pounds each. The berries were well thinned on

the bunches, and, as a consequence, were of good size. Relative to this 6 inch border or bed not a drop of water, was given to it in either year, until I observed the foliage to flag, which was early in August, but then, upon filling the tanks, I found it wanted upwards of one-hundred-and-fifty pails of water, to bring them up to the level, at which they were, when growth commenced. The bed or border was mulched about 1 inch deep with fine rotten dung, it was always moist under the dung until the time I mention, and thousands of small rootlets were perceivable upon removing the mulch.

Whether the vines are destroyed or not, I should like your opinion, and to enable you to judge somewhat. I enclose a piece of this year's wood cut from a spur. [Any thing but destroyed.—ED.]

In process of attention given to these vines I have come to the conclusion that to raise nice grapes, it is *not essential* to have costly houses or to give them that ceaseless watching, which some would lead us to suppose, was necessary. My structure has sometimes been hotter at night than in the day. It has always been adjusted at 9 o'clock in the morning; and always had to take what weather came along, until 5 in the afternoon, without change.

DOCTOR SIEBECK.

BY B.

What an ungrateful profession, that of a landscape gardener! Almost like an actor, who like a breath passes over this world's stage, and over his own; so passes the landscape gardener, seldom appreciated while alive, and entirely forgotten when gone. Nature with her grand finished landscapes eclipses his small ones, in the mind of the general public. His best efforts, such as overcoming the natural difficulties of the ground, strengthening and developing the feeble points on hand, and correcting the imperfections of Nature,—who thinks of them when looking at the garden landscape? Who in twenty-five years' time will praise the architect of the New York Central Park, for his stupendous work under and above ground, for his valiant battles with and his glorious victories over Nature? The public will even then complain of stunted vegetation, of predominating rock, of a surfeit of bridges, etc.; the public, innocent creature, will not see the original plot of hard rock, rough ground and quagmires, that the then comparatively luxurious growth and the finished earthwork will cover. That would be more than can be expected of a public—nay, of the critic. A finished thing of

art will be judged by our sight, not by our reason. By the latter only a second hand enjoyment can be obtained, and the artist will gain only what the French call a *successe d'estime*. No artist wants to be esteemed merely. And yet the landscape gardener has but a poor chance to be admired. Where his work will give most enjoyment, Nature will be sure to carry off the public's admiration, and the poor artist will not be thought of perhaps. Just in the same way as in all likelihood he will be the first to be blamed when stingy Nature alone should bear the censure.

So, while our artist lives, be he great indeed, his fame will probably not exceed the circumscribed circle of local fame. What will his fame then be when he is dead? The days have gone by when he had a chance to live in death. In olden times, with those grand Romans, who, by the bye, had to import from Greece, all they had of art and artists, gardens were not planted, they were "built."—Statues, fountains, terraces, balustrades, grottoes, colonnades, temples, these formed the Roman garden. Were that the present taste, the artist, by the kindly aid of photography and kindred professions would see his works multiplied, distributed in the four quarters of the globe, and so would get a world's reputation. But, strictly speaking, he would not be a gardener, would he? I would call him an architect.—In our ancestor's times, say one or two hundred years ago, our artist had also a chance which is also denied him in these our modern days. It was the age of aristocracy then. Large tracts of land were in the hands of kings, princes and noblemen; and where now-a-days a few acres are converted into pleasure grounds, there were then a hundred of them made into park and garden. Still the factitious art of jugglery was called in to embellish the grounds. Imitations of sea caverns, of Chinese gardens, of surprises by water works in the shape of artificial rains, dripping stone grottoes, mazes and labyrinths, found their place in our ancestors princely gardens—things, one and all, justly despised by us. No less so than the Dutch topiary work, which would not allow either Nature or woman to wear her own hair, but perforce compelled her to wear a wig ever so unnatural; no less so than the imitations of the *Antique* and the *Classical* in the shape of statues, terraces, and the whole list over again. How much of the fame of *Lenotre*, the author of *Versailles*, was owing to his excellence in such arts, to his superior skill in driving Nature from the ground with a pitchfork?

If our memory runs up and down the past ages,

we hardly meet with any celebrity of a gardening artist, and why? Shall we assume that, as a garden or a park cannot well be conceived without a public or private building as its central object, that the architect must needs eclipse the gardener? That would not do; we often enough meet with beautiful gardens surrounding a very modest house. Rather will I believe that we have no gardening celebrities *because, as a whole, the public is not yet up to a true and fine appreciation of gardens.*

How can you say so, (here perhaps interposes my reader,) when we are surrounded by and constantly make use of all the arts; when we cherish and foster them with love and vanity? Are we not on the height of civilization and perfection in the way of gardens as well as other things?

Gently, my dear friend. As to perfection of civilization I do believe we have a great deal more to learn yet than we ever knew. As to gardens—allow me to tell you that we have had in past ages as great painters as we can hope ever to see again, but that landscape painting is nevertheless a new branch, in which we of modern times excel.

In the same way we may perhaps be far advanced now in many arts, but as far as gardens go I firmly believe that we have hardly seen more than the beginning; and that their time is still before us. In this reflection lies the landscape gardener's best comfort. We shall have more and more public walks, public gardens, public parks, and as the public temples of the Grecians have brought architecture to perfection, so our public grounds will raise the taste and the judgment of the public to the appreciation of our art and its votaries. Then also will the artist have no need of complaining that his creations get neglected, overgrown, obliterated or destroyed through the change of ownership, as the case is but too often now, particularly in our own country.

But who is Dr. Siebeck—the impatient reader well may ask—that his name stands at the head of this article?

Dr. Siebeck, ladies and gentlemen, is the new, the great light in landscape gardening: a light too that already begins to shine over the whole world. His work: *Small Parks and Landscape Gardens*, illustrated with 24 colored plates, lies before me. It appeared in Vienna, where the author lives, and from the German, has been translated into the English, and I believe also into the French language. At any rate the French have criticised it as favorably as any, and wherever the book went it has excited high and deserved admiration. Mr. Rudolph

Siebeck, may therefore be put down as the first landscape gardener extant. His illustrations and his plans have of course done more for him than the text,—they speak to the eyes, and landscape gardening appeals to the eyes solely. Besides all discourses are futile. The art is not to be taught, as little as architecture, painting, etc. As there are masons, so there are gardeners. Architects and landscape gardeners, however, are quite different beings. Such arts are not acquired from nor taught to others. Models go for something though, and they will act as sparks to the slumbering genius. Hence we hope from Mr. Siebeck's book, more than universal enjoyment; we look for a race of artists that it will give rise to. May he be the first and the leader; but the more followers the better, to come after him. Perhaps the reader would like to know why the gentleman is called "Dr." Siebeck. Well, some German University took it into its learned head that it would honor him and itself by giving him a Doctor's Diploma,—about in the same way as I believe old Blucher, the grim soldier, was created a Doctor, by the University of Oxford, when in 1815 or thereabouts, he came to England.

I would draw the readers attention to the fact that Mr. Siebeck treats of *small* places. Partly because he wants to benefit the multitude, whose purses are slender and whose places are correspondingly small. Partly because greater ingenuity has to be brought to bear on a small place. Large ones give of themselves greater scope, and nature meets the artist half way. We admire him all the more for what he makes of small places. There is another virtue in treating of small places. Plans of such are as many beatifications of *homes*. What immense gratification in adorning a homestead! How eager every one of us to adopt for our own home this or that feature,—to learn this, or that we may ourselves apply it, and how it will perpetuate the author's memory! And by the way is not this gift a great compensation to the gardeners for the drawbacks which he enumerated before?

Mr. Siebeck explains every one of his plates. Each explanation, well read over and well digested will leave us richer. This is practical, useful teaching, dispensing with abstracts, and thus attractive to the million. He also teaches us the character of most trees and plants, that in his latitude, are the materials of the gardener, and tells us where best to put them. Nor is he unmindful of the lower order, *i.e.* vegetables, which we have to raise because they are part of our food. And his attempts to elect some such as tomatoes, beets and even cabbages, and raise them into the ornamental and emancipate

them into social rights, are at least novel and interesting, if not exactly successful.

[The readers of our first volume will remember our calling attention to the very unusual occurrence of a learned university, conferring the title of Doctor on a poor gardener like Siebeck, entirely as a tribute to his extraordinary talents and genius as a landscape gardener. We have not yet seen Siebeck's last work: as it will no doubt have a good run, we recommend Mr. C. B. Miller, of New York, who has recently given considerable attention to rare gardening works, to look out for this one.—ED.]

HINTS ON THE GRAPE VINE BEETLE.

BY MR. H. L. YOUNG, PO'KEEPSIE, N. Y.

IN the January number of the *Gardener's Monthly* for 1862, there appeared an article by me on the subject of the steel blue grape vine beetle. I stated in it the degree of injury and annoyance which these insects and their succeeding larvæ had caused me, and also remarked that if they should increase in numbers to any extent, that they would prove as destructive to grapes as the *curculio* had been to plums and other fruit. After thus perhaps arousing the apprehensions of some of our grape cultivators, I deem it no more than right to allay their fears, by recording the exemption from this plague which I have enjoyed the past summer when I had reason rather to look for its increase. I am happy in being able to say that although in the spring and early summer of 1861 the beetles on my vines could be counted by hundreds, yet during this last summer, 1862 only a few isolated specimens of this insect made their appearance, frequent and careful examination of the trellises only brought to light some ten or twelve in all. This is a great encouragement, and shows once more, that often the presence of insects exceedingly prejudicial to particular varieties of fruit and certain kinds of vegetation is comparatively of short duration. I have no doubt likewise, that the constant and persevering efforts at extermination which I maintained was a partial cause of this diminution.

For the benefit of those who may not remember with regard to my mode of destruction, I would state that it consisted in picking the nimble animal off the vines by the thumb and forefinger, moistened to make the hold secure, and then pressing to death between them. A gentleman of experience in grape culture informed me last year, on hearing of my difficulty, that he thought it not improbable that I would suffer but a short time in this way, for said he, a few years ago this same pest appeared for two

or three years in the eastern part of this county, cutting off to a great extent the crop of grapes, but after a while the insect disappeared, and no further annoyance was experienced. So let us take courage in this matter. I would say in connection with this, that this year the curculio has also been much less frequent than heretofore.

When visiting at Sing Sing, on the Hudson river south of this place during last summer, I found not only the grape vines but even young cherry and other trees depredated upon by rose bugs, so that sometimes clouds of them would rise from a tree shaken by the hand. These insects are productive of the greatest injury to the vine, and should a cultivator meet with one on his trellises, its instant destruction should be accomplished. Dr. Underhill found this a serious difficulty on first establishing his vineyards at Croton Point, a few miles from Sing Sing; he has overcome it as I understand, by the following process long and perseveringly continued. During the season of the appearance of the rosebugs early every morning he had his men pass through the vineyard provided with pans or vessels of water; the bugs were thrown into the water and thus secured, by a smart tap of the hand, dislodging them from their hold upon the vines. This is undoubtedly the best way to rid ones-self of these destroyers.

MY FUCHSIA SECRETS.

BY AN EAR DROP.

Besides my pits and frames, I have but one little greenhouse; but I love flowers, for all my limited means, and would as soon be without sugar in my morning's coffee, as without my morning's stroll through my little plant house. Of all my flowers I love

THE FUCHSIA

best, and I tell this to all my friends. They say because I have such success in growing it,—I say because of its intrinsic claim to my regard. Thus we differ. A fair daughter of Eve insists that I shall tell her the secret of my success. What is worse, she says or rather *orders* it, to be given through the *Monthly*. I must obey. She is a lovely girl. I know Samson's fate awaits me. The house—your house—the bricks of which your experienced correspondents form—will fall about my ears, and I shall be annihilated. Still it is sweet to fall by so fair a cause. She will weep I know at my literary death. A floral Cleopatra, she may even die herself for her Mad Antony.

But I must insist I love the Fuchsia for

ITS BEAUTIES.

Your myrtle, your bay, your laurel, with which you would coronet the brows of your warriors, your poets or your philosophers, have not so glossy a green, so perfect an outline in its foliage, as the meanest of my Fuchsias. Its habit is as dignified and as stately as any plant that grows; and this I will assert though you point me to the most Royal palm, or the Queen of water lilies—the Victoria regia herself. And as for elegance what can excel it? Strong and vigorous, yet slenderly drooping; while it asserts its independence it courts you with modesty. It does not affect prudishness, nor does it disdain the gaieties of color. Yet it does not thrust its brilliant hues upon you,—nor make a show of its innocent love of fashion, even to the imitation of the modern taste for expanding garments, as the variety *La Crinoline* fully attests; for if you would see it in all its genuine loveliness, you have to seek it in the retirement of its expanded foliage. Yet you must stoop to conquer its affection. It will not be looked down upon. Under its spreading branches the flower takes refuge. It smiles only on those who humbly seek it.

Perhaps after all

ITS EASE OF CULTURE

lends to it a factitious charm. It grows pretty well at anytime, anywhere, anyhow. In the cracked teapot of the poor sailor's mother, from whom, the tale goes, the nurseryman first bought it; equally as well as in the mosaic vase that adorns the marbled halls of kings. If you keep it in your greenhouse, it thanks you,—in a window, with poorer accommodations, it does not repine,—or if a cellar be its winter lot, neither here is it known, by any deed soever, to grumble at its fate. Cheerful and healthful, it comes forth alike in spring from all, and flowers in thankful humility the same all the season, for whatever favors in the way of protection or care it has received at your hands.

To talk of its culture, I should start from the beginning, which with me is

THE CUTTINGS.

These I take off in the fall, choosing the best pieces I can find before the plant goes out of flower. I keep no record, but think this is about the end of August. I get a shallow pan, and fill in a mixture of half sharp sand, and half good potting soil. In this I set the cuttings about half their length. The pan I set in a shady part of my little greenhouse, which is open all summer, in a place where it does not dry much, but yet gets air enough to keep from moulding. In about four weeks, I believe, they root. Mostly all growing. I have very

few fail to strike root. I know it is early in October they are

PERFECT PLANTS,

and I immediately set about giving them a separate existence in a three inch pot. I set them in as warm and as light a place in the greenhouse as I can, and let them grow all they can. I think it one of my chief points of success that I make them

GROW ALL WINTER,

but not rapidly. My house is scarcely ever above 55°. As soon as the plant is about four inches high, I pinch the top out, and in about a couple of weeks after shift it to a larger pot. I never use a pot for shifting any more than just a little larger than the one it was growing in. As to

SOIL,

I have one peculiarity, I think of my own. I never use liquid manure; but I repot very often, and every time I try to get my soil a little richer than when I used it before. I use common turfy loam, with rotten cow manure. A very little only with the loam at the first potting, and nearly one-fourth when the plant is receiving its last shift before flowering. In

TRAINING THE PLANTS,

I use only one central stake. Where the leader was pinched a new shoot will come, which is early tied to this stake. Generally I get all the shoots I want from the first pinch. If not, pinch again.

Most persons fail in their Fuchsias during

SUMMER TREATMENT.

My last shift is given about the middle of April, and about the middle of May I put them out of doors, under the shade of some old Pine trees, that have lost their lower branches to a considerable height—on a wire stand I had made on purpose, and keep exclusively for my Fuchsias. There is a free circulation of air under these trees, though the sun scarcely ever shines on them; and there is a moister atmosphere under these Pine trees, than I think I can find anywhere else. This slight moisture I think helps my plants very much.

Another frequent cause of failure, I have no doubt, arises from

INSECTS.

This is generally the Red Spider, as I see on others, but never on my own. They soon make the leaves fall off, and then the plants become sickly. I have no spider on mine. I use the syringe on my plants often when I have time on a hot summer's evening, which the spider does not like if he were there, and which gives the moisture

about the leaves, I have by experience found the plant to so much like.

THE WINTER TREATMENT

of the old plants is simply to stow them in the cellar. I depend on the young plants for my pot bloomers. In the spring I turn them out in my garden to do the best they can, leaving them to their fate the forthcoming winter—an ungrateful return I feel, and a course that often grieves me; but such it is, and I must confess all.

And now I hope your experienced writers will be merciful with me. I may have given "nothing new" or "nothing good." It is perhaps no excuse for me that I gave way to a dimple-checked, arch-tempter; but oh! if they only knew her, they would see I could not resist.

TWICE-BEARING AND EVERBEARING STRAWBERRIES.

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

Hitherto our everbearing varieties of the Strawberry family have been confined to the Alpine class, the fruit of which is similar to its congener, the European Wood, both in size and flavor, and unfortunately a small berry. It is announced as a great desideratum in Europe, but is certainly as important to us here—the attainment of everbearing varieties of large size. But in order to accomplish this most desirable object, we must have recourse to the other species which naturally produce large berries. The Hautbois, which is next in size to the Wood and Alpine, and the largest species produced naturally in Europe, has presented us with two varieties possessing the twice-bearing character, the Belle Bordelaise, and Prolific or Conical Hautbois, the second crop being an autumnal one, and dependent greatly on liberal irrigation. Seedlings obtained from these may afford us plants possessing the everbearing character. But this would present us with but a moderate improvement in size over the Alpines. We must consequently look to the American species in order to combine large size with the other desired characteristics. The large seedling varieties which they have obtained in Europe, from the American *F. grandiflora* or Pine, are many of them long-bearing, yet none of them possess the character of being twice-bearing or everbearing. But we have obtained here from the Pine, and other American species, several varieties which are twice-bearing. The entire number of European and American varieties, that are twice-bearing, will be found in our catalogue, 48th edition: No. 15, 53,

57, 58, 73, 231 and 236, and of the Alpine ever-bearing, there are ten varieties. Perpetual bearing seedlings, from the seven first named, would be highly important acquisitions, and it is to these we are to look for such seminal results as will fully satisfy the amateurs of this favorite family of fruits. To such comparative novices as may desire to engage in this interesting object, it may be well to state that the Pine Chili and Hautbois families, should be grown in a stiff soil, retentive of moisture, but not sodden, and with good underdrainage. The varieties of F. Virginiana, Lowensis, and other North American species, will flourish in a soil like the preceding, but will also succeed in lighter and drier soils. The European Wood and Alpine varieties will do best, and continue longer in bearing, and produce larger fruit in the soil first above indicated, but will succeed fairly in that second named. An ample irrigation is, however, indispensably necessary for all the twice-bearing and everbearing varieties, to be commenced immediately after the maturity of the first crop.

FUNGUS AMONG CUTTINGS.

BY C. P. M., PHILADELPHIA.

A writer in your last number, who is evidently a practical gardener, with good observing powers, does not think the doctrine sound that fungoid vegetation attacks only diseased matter, and gives as his reasons that healthy cuttings in his sand boxes, are often destroyed in a single night, by a species of mildew. This has a plausible look, and may deceive many. I think the theory that mildew attacks healthy vegetation, a dangerous heresy, and has already worked much mischief in our treatment of the diseases of plants. In the instance given, a cutting is in a manner diseased, it has to have its life preserved by extra artificial contrivances.

Did your correspondent ever know a *well rooted* cutting to be destroyed by this fungus? I think not.

[Because a cutting has to "struggle for its life," we can scarcely call it *diseased*. A fish would perhaps, eat a man half dead by drowning, that would fear to touch him when said man was fully alive, and yet the man be not "diseased," though his vitality might be considerably impaired. We seldom step in between "doughty antagonists" in horticultural controversies, but must say we regard no fact better established than that fungi will attack healthy vegetation.—ED.]

LARGE EARLY YORK PEACH.

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

In your December number you headed my article "Some Rejected Fruits," when it should have been "Some *Select* Fruits." Also the name of White Magdalen or Madeleine, of the French is spelled *Magdaline*; and Nivette Peach is spelled *Ninette*. As I am one of those who bear witness to the superior accuracy and intelligence displayed in the columns of the *Gardener's Monthly*, I know you will not take it amiss to mention these slips of the compositor.

Now to more important matters. I see Early York and George IV, mentioned as distinct in your columns. The true "large Early York," an *American variety*, was erroneously nicknamed George the Fourth, and the London Horticultural Society, that rejected the former, declared that the latter, (although the same tree,) seemed "*peculiarly adapted to the English climate.*" So much for a name. But the "Early York, serrate," is a very different fruit, and withal an old and well-known *European variety*, imported as the Early Purple, erroneously described by A. J. Downing, under its new name, and as a consequence has caused much confusion. This last is only of medium size, roundish, ovate, greenish white with a dark red cheek, tender, juicy, rich, slight acidity, early, very productive. The true "Large Early York" is large, roundish, whitish with red dots, a deep red cheek, very juicy, mild, rich flavor, excellent, highly esteemed, early. Haines' Early Red, Honest John, as well as George IV, (and perhaps Walter's Early, also,) are synonyms of this, which is the true original Early York, with globose glands, grown from a seed of the true original Red Rareripe, which is called, in Mr. Downing's work, Morris Red Rareripe, and has also globose glands.

This variety was transmitted in an assortment of American fruits, by William Prince, my father, a few years after the close of our Revolution, to William Forsyth, author of "A Treatise on Fruit Trees," who had then the direction of the Royal gardens at Kensington near London; and it probably received the title of Royal Kensington from him. Some years after, William Prince imported among other varieties, the Royal Kensington, on fruiting which he found to his amazement that it was the same variety he had previously sent to Europe, as the Large Early York.

This original Red Rareripe was grown from a seed of the "Grosse Mignonne," which was brought to Long Island, by one of the French emigrants, at the time of the Revocation of the Edict of Nantz. This French parent also has globose glands. The Red Rareripe, erroneously so named by A. J. Downing, and described as being "serrate without glands," is a misnomer which I have never been able to obtain a sight of, and which was unknown to William Prince, my father, and must have been of an entirely different parentage, judging from its glands and general character.

The Gardener's Monthly.

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CULTIVATING ORCHARDS.

IN the December number of the *Horticulturist* are some remarks on cultivating orchards, which induce us to return to the subject again.

As our readers know, when we first called attention to the subject, our views were received with general surprise; yet the progress of public sentiment has been of such a nature, that great numbers of our leading horticulturists endorse our opinion; and most of those who do not exactly go this far, have modified their belief in the value of cultivating orchards to a considerable extent.

Of our contemporaries, none, we believe, but the *Country Gentleman* zealously advocates highly cultivated orchards to the extent it formerly did; and even it has been forced to admit recently, that from what it has lately learned "the soil of Pennsylvania or the middle states is adapted to grow good fruit without high cultivation." We quote from memory, not having the precise page before us; but give, we believe, its correct expression. Yet, we think, if it will look closely into the pages of its exchanges from other states, and read the frequent communications in them from men of careful observation, it will find that emulative evidence of the strongest kind against cultivating orchards, comes not alone from Pennsylvania and the Middle States.

But we have now to do with our friends of the *Horticulturist*. The President of one of our most popular Fruit-grower's societies in a recent address before a meeting, gave his opinion freely, that the late A. J. Downing, with so much to claim our regard, had also much to answer for in the frequent failures of fruit-growing, by his advice respecting high manuring of fruit trees. We do not remember that his opinion was controverted by any of the experienced fruit-growers present. And the *Horticulturist*, "established" as its title page says, "by the late A. J. Downing,"—true to the traditionary

principles held by that respected man, still holds to and proclaims the same injurious practices. It is worthy of remark however, that the *Horticulturist* does not come up to the mark with the same courage as the *Country Gentleman*. It has "no doubt" of the utility of cultivating young orchards, "thinks it" (an orchard) "ought always be done." Yet older orchards "may be put in grass," and so on. This does not satisfy us. So we were instrumental in calling up this question, if there be any good reasons for cultivating orchards, we want to know what they are.

We have never yet met an instance of one who recommended cultivating orchards, who was not particular at the same time to advise "above all things don't injure the roots." But if cultivation is practiced at all in an orchard, of what benefit is it to the tree if you confine that cultivation to the area beyond which the roots extend? And if cultivation is to be effected within that area, how is it to be done without tearing the roots? And if it is so much of a benefit that trees should receive food, and at the same time so important that the roots should be totally uninjured, why recommend a system which must injure roots to be effective? and why object to top-dressing instead, which preserves and feeds the roots at the same time?

Another reason given for recommending cultivated orchards, is, that if the husbandman is taught to rely on a thorough preparation of the soil previous to planting an orchard, and merely an annual top-dressing afterwards, he will in time totally neglect this last essential part; and so in order to get any good from an orchard it is necessary to make a compromise with a good principle. "Let him get a crop of roots or corn, for which he must manure, so that the trees may get a small share of it." What good ever came of a compromise?

A certain dignitary of the church was once on the way to a religious anniversary at which he expected to do much good. Going up a steep hill the horses would not move, though both John and his employer did their best to coax the stubborn brutes. The reverend gentleman looked at his watch—the case was desperate. "If you will only allow me to swear at them I will promise you, sir, they shall go." No, John, that would be sinful, try other means." John's renewed trials proved no better. Another look at the watch, and the thought again occurred "if he would only get there in time what good might he not do?" "Are you sure they will go, John, if you swear at them?" "Certain, sir." "Then, swear a little but don't swear much." John swore and on went the horses, hearing language they

had out of the owner's hearing learned well to understand. But all too late, the meeting had adjourned. "Ah!" said the bishop, "I never yet knew a compromise with the devil, but he always got the best of it." And it is so with all, and particularly in horticulture. Compromise with orchard culture so that the farmer's greed for immediate returns is ministered to, in order to help the trees, and the whole thing suffers. We do not write for those who wish compromises; but for those who, convinced of the soundness and profitableness of a principle, have common sense enough to follow it.

There is yet one more reason given. Some friends have seen orchards under high culture that lived and bore enormous crops for many years. "Liquor" said old Cooper, the habitual drunkard of sixty years' standing, "is a great preserver of life. I am eighty years old, and look at me." We knew him well; as we did scores of others, who fell into their graves at half his age. We will not stop for such arguments as these; but we will point to thousands of trees in *cultivated ground*, sickly from over-growth; barren, or afflicted with various diseases as well as to some in the same way under "neglected culture." Then we will point to thousands of trees in grass, not "neglected," but top-dressed, or otherwise cared for, with no disease, but perhaps very old age—bearing annually and productively, and all that a reasonable cultivator could wish them to be. We will show these in Pennsylvania, Delaware, New York, New Jersey, and Maryland. Mr. Bacon will show them in "New England and where the winters are severe" (see *Horticulturist* page 540, 1862), and other nameless parties will show them in any state in the Union from Maine to Florida or California.

A phenomenon having been once recognized, it remains for reason to interpret it. Why are trees, the roots of which are undisturbed, and which get all the food they require, healthier, longer lived, and more productive than trees that have their surface roots continually torn away? Because the fibrous roots of plants, though they are attracted by moisture, are also attracted by the atmosphere and invariably get as near the surface of the soil as they can consistently with their desire for moisture. As it is also admitted that though "nature uses neither spade nor plow," the most healthy condition of a plant is when it has the free use of all its natural advantages: it follows that the nearer the surface we can keep roots, the healthier the tree will be; and this result is best, easiest, and cheapest obtained, not by cultivating the soil on the surface, but by letting the surface alone, and adding to it a

yearly top-dressing or mulch, by which the fibres may be encouraged still more to keep to the surface where they naturally wish to be.

The clamor for "cultivating" trees is but a prejudice for which no good reason can be given,—a prejudice which is passing, and will soon pass entirely away; and one which we wish for no greater credit in the future than having been mainly instrumental in destroying. How it originated does not matter much, but it in all probability arose from the necessary system of cultivating annual plants, where the air admitted into the soil by breaking up yearly is sufficient for each annual crop, without regard to any surface fibres, which indeed few annual plants possess. Milk may answer well for babes, but we want meat for the strong man, and though it may be all very well to dig and tinker around our cabbages or our corn, depend upon it our trees will be much better satisfied to be let alone.

But it may be asked, "what would you do with a young tree when the grass grows so strong as to dry the ground and injure its growth;" with a "starved tree"—"a sick" tree—a "neglected" tree, and so on. One who publishes a work on the general laws of health, is scarcely expected to add a treatise on the proper management of a hospital. We ourselves have frequently recommended the breaking up and cultivating of orchards for special reasons; but it by no means follows that what may be a powerful and efficient medicine should be received as an agreeable and regular article of daily food.

MILDEW ON PEARS.

Where is that happy country, where, after a twenty year's cultivation, the enemy, in the shape of insect or fungus, will not come and destroy our work and our hopes? Truly life is a battle, and everything that liveth, existeth at the expense and through the death of another thing.

The *Accidium cancellatum*, is a pest which for some years past has attacked the pear trees in Normandy, (France,) particularly this last wet summer. Our French correspondent describes it as a fungus, which in the months of June and July, settles on pear trees, particularly on the White Doyenne. A most remarkable feature about it, he says, is the fact that wherever *Sabina* Junipers stand, there the *Accidium* has been found. Of course the experiences and opinions of many have been made public, and while the above fact has been at times denied, it now seems to have been settled in this way. A gentleman, took in the month of April, the spores of *Gymnosporangium fuscum*, the fungus which habitually appears on

the *Juniperus Sabina*, developed them in a quarter of an hour's time by watering them liberally and putting them on leaves of a pear tree. In some twenty days the *Accidium* appeared on the upper side of such leaves, in the shape of small yellow points.

A wonderful transmutation in vegetable Nature indeed, if true. We say if true, advisedly, because the light of science has not yet been brought strongly on the parasites of creation. We know very little indeed of their origin, propagation, migration, etc., to conclude at once so boldly. We rather await later experiments, as also the cure of the *Accidium*, if any have been found.

TAMING OF THE SHREW.

WE have the habit of talking of nature as of a female—a lady; and we call the earth our mother. No finer appellations are there than lady and mother. They embody nobility and kindness, and these are the divinest attributes.

But do we not also call nature *Dame Nature*? And does not that smack of self-will imposed on others; of age asserted; and perhaps of something step-motherly? Is nature really both a lady and a harsh female? a mother and a step-mother.

Boldly we may say she is, and that this arrangement is of Providence, and instituted for the eternal good of the human race. "In the sweat of thy brow shalt thou eat thy bread," is as much as to say: A step-mother shall this earth be to thee, O man!

The island of St. Domingo was represented by the followers of Columbus as a paradise. The guileless inhabitants walked about naked; were virtuous to perfection; had by spontaneous growth of the soil all the food they wanted; were by the genial climate dispensed from making any "improvements" whatever, and were happy—till those greedy, almighty dollar-loving Europeans came and first spoiled those unsophisticated Americans, and then exterminated them! That is the story; who believes it? Suppose they were happy and virtuous; it was the happiness and virtue of animals, not of thinking men. Think of a Lazzaroni basking in the sun enjoying his thrice daily macaroni and his noddle almost too lazy to dream! What sort of a penny do you give for *his* valuable thoughts?

Nature is a lady, but she must be managed,—a respectable woman who will always have her own way if she can get it. As if to prevent this calamity, man, as curbing institution, has been engrafted on her, and the alliance proves beneficial to both.

The cultivation of the soil raises the value of both man and soil in the scale of creation. Our purpose is it to trace this, in the gardening way,—“horticulturally” is the fashionable word long enough to place it in the class of centipedes, were it of insect origin. O for another good Saxon word! Botanical geography—lays down the boundary lines of plants. Thus the palm is found only within the circle of warm oceans—the strawberry only within those happy regions where colds in the head flourish best,—thus, etc., etc., etc. Transplanting from the torrid into the frigid zone successfully is not possible. As well might we train a fish to shuffle off his fishy coil and tread this solid earth. The limits are obvious and cannot be infringed. But a wide field is nevertheless left to intelligent men to work upon. There is the wilfulness of nature left to be vanquished,—her humors to be subdued; the shrew to be tamed.

Taming—all of our readers will admit—is delightful. It is the exercise of power in its most fascinating aspect; coaxing, cunning, ingenuity, perseverance and a host of virtues are called into play, and we never knew of our abilities till we began to practise them. How pleased is the babe with its first toddle across the floor.

As the result of this taming we see the tobacco plant, our American weed, grow in Asia Minor. If not as the “delicious” Havana cigar, still as its worthy sister, the turkish smoking stuff. Cotton seed wandered all the way from Asia to enrich our American continent—the seed, alas! of riches and of woe!

There has been a continual interchange between the two hemispheres in the way of plants; an interchange fostered mostly by the prospect of gain, which the enterprising individual had in view, but none the less enriching to all mankind.

In this way many plants, that “dame nature” denied to this country or that, have become universal, in a sense. In our own favored country we have made a home for the vegetation of Japan, northern China, and Mexico; and in spite of latitude or longitude, we make bold to impress under culture one way or another the richer delicacies of the world, and still we pursue the taming process.

The attempt to colonize plants is constantly made. Scientific travelling has, in our days, become the scientific fashion. Lives are risked and often lost in the service of science. How much—horticulturally—we are indebted to this noble race of travellers every reader knows. As all nations have furnished their quota to their ranks, it would be invidious to single out names. Perhaps the Germans have

done the most, our countrymen least. Russia, that rising star, getting into the civilized brotherhood of nations, assumes her share, and Mr. Maximowicz, travelling in Japan, is the newest name amongst the botanical locomotionists. The Amoor Country, and the whole Pacific Coast of Russia, are at the same time actively explored in the interest of botany, and will probably enrich this and other countries with a good many novelties.

Innumerable also are the instances where a perfect colonization was not obtained—where the shrew could not be fully tamed—but only made a slight concession. Our grape men know this. Hardly a grape grown any where in the world but has been tried on American soil. And among the countless failures, there have been some instances where the grape, crossed by the native, or influenced by circumstances, reluctantly bade adieu to its native shrewishness, changing here the greater part of its nature and under a new name living on, just as did many an emigrant here, whom his mother abroad would neither know nor own any more.

Per contra the immigrating plant has often been improved as in the case of the cotton, corn, the blackberry, grape, &c., and from a poor king a fat and jolly subject has been made. Seeming almost as if nature had missed the right spot in locating it originally.

But whilst men have gone to all the points of the compass to collect new plants, those staying at home have been as arduous as they in the work of taming the shrew. Look at our apple, the representative of northern worth and northern character. Brought into as many varieties as there are trades,—into as many forms as there are shapes,—into as many niceties of flavor as there are persons amongst men, and as useful and thrifty a fruit as any industrious American can be. Yet Mrs. Apple comes from that shabby, crabby, crab-apple of an apple—the pro-apple and proto-apple of all apples. And human perseverance and study alone has brought that crab to its present position. Think of it, how many brains and how many hands have worked on the apple. Think also of the intense delight following each success.

Our peach, glorious rosy-cheeked luscious peach, what was its great, great grandmother? A miserable almond, the envelope of which has by the tamers of nature been perfected into that delightful flesh, and the fruits altogether so changed in looks that the people—excepting the priests of the people, the botanists—changed its name also. No bearmother could lick her bearbaby more assiduously into shape, than the world's gardeners have

the peach. Still less has been done for the peach than for the rose, look at the list of roses and think they all spring from one poor rose and that a dog-rose!

How much to be accomplished yet is hard to tell. Experimenting goes on incessantly,—its fascination is felt alike by him who is a disinterested *dilettante* and by him who looks to gain. There is no limit to perfecting trees or flowers or fruits or vegetables or grasses or anything in the empire of vegetation. Man was made to command, and it is the lady nature's duty to obey.

“And, when she's froward, peevish, sullen, sour,
And, not obedient to his honest will,
What is she but a foul contending rebel
And graceless traitor to her loving lord?”

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.

APPLES.—A “*Lancaster Reader*” writes:—

“I think to set out one hundred apple trees, with a view to sell the product when they bear. My idea is that one variety will serve me this purpose better than several, as I can make one job of selling the whole together. What variety would you advise me?”

[The above, with other memoranda from the office, comes to us without envelope, and as no State is mentioned on the slip, we will assume our “Reader” to hail from Lancaster, Pa., and reply, plant Smith's Cider. If your friends want cooking apples, or first class desert apples, or cider apples, or you want some to sell them every year, and plenty at that, Smith's Cider will please them and you.]

—*L. C.*; near Trenton, N. J.—“What is the best time to prune an apple orchard? Mine has been planted five years, is growing finely, and just commencing to bear.” [Why prune it at all if it is “growing finely?” Let it alone.]

PANSIES.—*Louise* asks: “How shall I treat my Pansies to get them so large and fine as they are sold in the markets in spring. I always buy the best seed, but the plants will grow weak and spindly, and the flowers are small.”

[By being weak and spindly, we suppose they are kept warm, and from the light. They are best in a cold frame, near the glass,—merely protected

from frost by mats on the glass, and a bank of earth round the frame. Heat is a worse enemy to the Pansy than frost.]

LENNIG'S WHITE STRAWBERRY.—A. B. C.—Flavor is a matter of taste. We like the flavor of this very much. It is a hardy and vigorous grower. It does not bear crops equal to Albany Seedling.

IVY ON WALL.—“A Subscriber” writes:

“Is the theory which I have somewhere read or heard of, correct, that Ivy upon the wall of a house, not only does not increase the dampness of the wall, but through the absorption of moisture, by its many little rootlets, abates dampness?”

I can understand that its leaves and branches prevent rains from reaching the walls, provided they do not then and thereafter retain the moisture from the rains too much, and prevent the drying effects of winds upon the wall. I am interested in a correct solution of the question, and will thank you for your opinion.”

[No one will ask this question who will test it practically. After the heaviest rain, an examination will show an Ivy coated wall, *perfectly dry*, when an uncovered wall is damp for days after. We have seen some Ivy-covered walls damp when the spouts have been defective, and the water ran down the sides of the wall beneath the Ivy roots; but even in this unfavorable case, it is our opinion that the roots of the Ivy would dry the wall within a day or so: as soon as full exposure to the air would do. If the weather were dull, the Ivy would dry the wall first. That Ivy renders walls damp, is but an imaginary idea.]

PEACHES AND FIGS IN VINERY.—G. D. P. writes:

“I have a cold grapery, a lean-to house. With Foreign grapes, it is a fair success; Native grapes, on back wall do nothing. Must I put *them out*?”

I want to inquire about peaches. Mine, planted in the earth, on the back wall, bloom shy, but never bear. What is the cause, and what must I do? Will they do better in 12 inch pots?

My figs bear but never ripen. In tubs they appear to do better. What shall I do? I would give \$5 to go with you to that lady friend's orchard-house. Can't you show us the inside, as well as management of it, in your next issue.”

[It is a waste to grow Native grapes under glass. Your Peaches, we judge, are growing too strong. Summer-prune them strongly. They would do

better in pots, because they would not grow so strong. The back wall is not favorable for anything. Nectarines do better than Peaches.

Figs will ripen if the buds made in fall do not die in winter. The spring-formed buds do not ripen well. Your tubs get more protection probably.

We have so many matters before us, we cannot give a detailed account of the orchard-house in question just now. Some day we may.]

ALWAYS NAME YOUR STATE.—When writing last year a letter on the publisher's business, it was directed to Mr. Meehan, which it ought not to have been, but which he handed to the proper party. It was simply signed “Jerry Flannery, Windsor.” The publisher sent to Windsor, Conn., on a venture, but the letter was returned “dead.” A notice was subsequently inserted, (see page 147,) asking if any one knew of Mr. Flannery. No response came from any one.

Now we have a cutting letter from Mr. F., from Windsor, Vermont, in which the writer is “very much surprised at Mr. Meehan's conduct,” and much of a similar purpose.

Governmental statistics of the dead letter office, have shown that a majority of letters fail to reach their destination by the entire fault of the writers. This is our experience also; and if there be any, who, like Mr. F., “are surprised at Mr. Meehan's conduct,” in similar cases, and will follow Mr. F.'s freedom in expressing it, we have no doubt of showing it is entirely their own fault.

RICHLAND PLUM.—H., *Leominster, Mass.* I wish to enquire if the Richland or Copper Plum is the same thing as the Copper plum, described in Elliott's Fruit Book, page 425? I have noticed that some nurserymen have offered them upon peach stocks; does it succeed well upon them?

[The Richland is distinct from the Copper Plum of Elliott. Peach is not a good stock for plum.

The insects had escaped from the quill, and were not in the letter when we opened it.]

FLOWERS. A correspondent, dating from “Forest House, Guelph, Canada West,” will find that we have in part adopted his suggestions in the present number, and shall bear it in mind as far as practicable. We have so many tastes to minister to, that a monthly magazine can treat many subjects but imperfectly.

Forgetting to sign your proper name, the number was addressed “Forest House, Guelph,” only.

NURSERY ADVERTISEMENTS.—The following extract of a private letter from a leading nurseryman to our publisher, is worthy of public comment :

"I find that many *nurserymen* object to the work on the ground that it has injured the nursery business, by advertising the *prices* to stocks. I have myself felt the weight of the argument. *** has ruined the Rose trade by *pricing his trash*, and *** the grapes, by pricing the Delaware grape, "second choice," at \$10. When you enquire what grapes he offers at \$10, you find they are weak plants, rooted from the tender tips while in a growing state, and are almost worthless. Thus worthless stock is brought in competition with the good, and those nurserymen who would be ashamed to offer that kind of stock are considered high, because the purchaser can form no idea of the difference in the stock without seeing it.

I would suggest to you decline *all* advertisements that have prices affixed."

If a country nurseryman have Delaware grapes to sell, at say 50 cents each, and a customer see them advertised at 10 cents, he may probably think he is overcharged, not knowing that there is any difference in the *quality* of nursery stock. This is undoubtedly an evil—an injustice to an honest nurseryman. But how is this to be avoided? The course recommended by our friend would add to the evil, not remedy it. Type and printing ink are not the exclusive privilege of the *Gardener's Monthly*. Such advertisements can and do appear in all other journals; and were there none, circulars and catalogues would do the work as well. Even as it is, circulars of cheap grapes are sown by the ten thousands over the land. We have no diffidence in "guessing" that Dr. Grant pays more in one year for printing circulars than he pays in twenty years for advertising in the papers. And so in a similar degree with most nurserymen. Would it be wise to raise a crusade against printing in general, because these men issue circulars offering to sell cheaper than others?

It is our firm conviction that no good ever came of the *suppression of a fact*. If there are men who will sell a plant for 10 cents that another one gets 50 cents for, he either can afford it or he cannot. If he can, so long as he can command type he will find a way to sell, and it is much better for the 50 cent man to be boldly told so by his opponent, than to have him sneaking around in a thousand ways "behind his back," silently but surely taking away his customers, without his knowing why or wherefore? "To be forewarned is to be forearmed," is a maxim in military matters, and we really cannot see why it is not as true in the nursery trade.

If he cannot afford it, it is not for any journal to judge; and it is a wrong that will soon right itself.

We are very much surprised and astonished at such an objection being made. If the public are not satisfied with an article at a certain price, they will not buy it; and if a respectable nurseryman feels that what he is about to offer at that price will not give satisfaction, he will not risk his reputation in the enterprise. If he does he fails, and that failure is to the *advantage* and not to the loss as our correspondent supposes, of those nurserymen who sell a better article at a fair price. He gains the custom the other has justly lost.

We have shown that advertising these low priced things is in the main an advantage, we may now enquire is there no way of remedying the minor evil of which our correspondent complains? There is, but it is not in our hands. If a dry goods dealer sells muslin for 50 cts. per yard, and another advertises to sell at 25 cents, he first finds out the quality, he then watches that it sells well with the public. He does not then go and stop his subscription to the *Smithville Daily Bombshell*, for advertising the 25 cent goods; but he does a wiser thing. He gets in a supply of the same kind, and sells it too.

It must not be forgotten that the Editor, Mr. Meehan, depends exclusively on the nursery business for the support of his family. He has reasons therefore to encourage no plan that may seriously operate against the general interests of the nursery business. He does not believe it is to the nursery interest to decide what the public shall or shall not buy, or what they shall or shall not pay for it. It is to the interest of the whole Horticultural public to let all these matters have the widest publicity, and the publisher sees no reason to depart from his rule, not to interfere with respectable advertisements.

CORRECTIONS.—We pride ourselves on the accuracy of our journal; but we did not notice the errors in Mr. Prince's article, (see p. 13,) until Mr. P. pointed them out. We hate apologies or excuses for imperfect work that ought to have been perfectly done, especially when to do so requires the introduction of one's personal affairs to the reader. As it is, it seems necessary to state that the Editor usually gives a final revision to the sheets before they go to the press. At the time Mr. P.'s article passed under revision, the Editor's eldest daughter lay dead from an epidemic disease, which attacked the whole family, himself included, and from which all have not yet entirely recovered. It is possible an occasional error may escape the hasty revision of the sheets this month's number has also received, for which, if found, we ask in advance the reader's indulgence.

Obituary.

DR. WILLIAM D. BRINCKLE.

DIED, at Groveville, N. J., on the 16th inst., W. D. Brincklé, M. D., of Philadelphia.

Over the mortal remains of this dear friend and associate, have been pronounced the sad and solemn words, "Earth to earth, ashes to ashes, dust to dust," falling upon the ear like the knell of high and brilliant hopes.

Dr. Brincklé stood at the very head of the pomological fraternity, and had done more for the science than any other person whether American or European. His name is familiar to every lover of fruits, and is known as that of one who has originated some of the finest varieties now in existence. These, his love for the science and his generous spirit, led him to distribute freely, at his own cost and free of reward.

His office was ever open to Pomologists, Nurserymen and Amateurs of fruits, with whom he was always cheerful and ready to exchange sentiments. He was a prominent member of the American Pomological Society, and took a leading part in all its proceedings. For many years he was Vice-President of the Pennsylvania Horticultural Society, and repeatedly declined the honors of being its President.

For the last twenty-five years he has daily spent the few hours that were left at his disposal, by an extensive medical practice, in carrying on a system of impregnating and crossing different varieties of fruit, so as to produce grander and finer results. Beginning with the Strawberry, he originated many fine varieties; among these the Cushing still holds a prominent position. He turned his attention next to the Raspberry, producing the varieties known as Wilder, President Cope, Cushing, and Orange; these have been in cultivation for at least ten years; No other four varieties are at present equal to these in merit, nor do we believe that they will soon be rivalled. We find him next experimenting with the Pears, crossing the finest sorts with scientific patience. Several of the trees thus produced, have fruited, and have proved to be of the first excellence. Among these we may mention the Wilmington and the Catherine Gardette. But a few weeks ago he sent the writer a drawing and a description of another kind of equal merit. Dr. Brincklé's system was to sow the seeds, and after the second or third year's growth, to graft and re-graft yearly till fruit was obtained. In this way he

found that a fine pear can be produced in a very few years. Van Mons, the celebrated European Pomologist, thought it a great achievement to produce fruit in twenty years; our modest departed friend arrived at more splendid results in half the period.

For a few of his latest years, Dr. B. was obliged, by physical affliction, to retire from active life; yet his love of the science remained; and at the ripe age of 64, he has departed, leaving a large circle to mourn his loss.

This feeble tribute to his memory, is offered by one who admired him for his purity of purpose, and for his elevated and unselfish devotion to the advancement of Science. R. B.

Philadelphia, December 19th, 1862.

[We had prepared an article in relation to the death of our late friend and correspondent, Dr. W. D. Brincklé, but replace it by the above sketch, from an older friend of the Doctor's, to whom his many virtues were even better known by long years of intimacy than to us.]

MR. HUGH COOPER HANSON.

This gentleman, well-known some years ago to the Horticultural public, as the Editor of the "*Florist*," published in Philadelphia, died in that city recently, in the thirty-seventh year of his age. As an amateur Horticulturist, Mr. H. was distinguished by a knowledge of the theory of the science, very rare indeed among persons of his class. To this was added a superior knowledge of classical and polite literature, that made his essays on his favorite pursuit always entertaining and instructive. He was for a long time an active and useful member of the Academy of Natural Sciences.

The failure of the "*Florist*" was long foreseen by his friends; but his energy and determination were of that class which will not believe in failure till its foot is past the threshold, and its voice echoing in the ear. He never had abundant means, and his failure with his paper, on which he had set his whole heart, so ruined and disheartened him, that he lost all taste for horticultural pursuits, and disappeared from the circle of its friends altogether. An accidental sight of a notice of his death in a city paper, has alone enabled us to record his name in the history of American Horticulture, in which his short but useful career, certainly demands an honorable mention.

New or Rare Plants.

ZINNIA GHIESBRECHTII.—First cultivated by F. A. Haage, Erfurt, Germany, and for the last year by V. Andrieux & Co., Paris. This new kind bears little resemblance whatever to the Zinnias hitherto cultivated. Its stalks are hairy, of a reddish tinge, and very branchy at the base.—Leaves sessile, hairy, scabrous; lower ones oval, very much lanceolated; upper ones narrower. It is a beautiful plant.

REGENSBERGER FLORA.—*Philadelphus hirsutus*, Nuttall, pl. 5334. This fine shrub has been introduced recently, by Mr. Veitch, from Oregon. Grows in North Western America. Has been found also in Tennessee. Easily distinguished by its hispid foliage. Flowers in size and color same as those on known kinds. Hooker thinks its flowers smell like the flowers of Melilot.—*German Garten Zeitung*.

RARE AMERICAN PINES.—Dr. George Engelmann of St. Louis, has published in *Silliman's Journal*, some remarks on the Pines collected by Dr. Parry, whose recent explorations, in the Rocky Mountains, we have already noticed in the *Gardener's Monthly*. As the greatest part of memoir is entirely new to our readers, and very interesting to all lovers of the beautiful coniferous tribe, we give the paper entire:—

Abies grandis, Lindl. Not common in this region, resembling much the Eastern *A. balsamea*. Fendler's N. Mex. No. 828 is the same.

Abies Douglasii, Lindl. "Abundant through the eastern mountain district, except on the higher elevations. A very slightly tree, of the average height of 80 feet, with a graceful, oval outline; the spreading branches curving upwards at the extremities. Wood of slow growth, but very indifferent, inclined to warp and crack, turning reddish-brown in drying." This species, as well as the nearly allied *A. Canadensis*, is well distinguished from all our other Pines by the distinctly petioled leaves. Fendler's N. Mex. No. 829.

Abies Menziesii, Lindl. "A finely shaped tree, though of rather stiff outline, of rapid growth; wood very compact, but rather coarse grained and pitchy; the logs taper too rapidly to saw up to advantage." Cones pendulous from the end of the branches. Leaves stouter than in any other allied species, stiff and very acute, almost spinescent.

Abies nigra, Poir. Probably the same as the northeastern tree, characterized by the slender and

very acute leaves, ovate cones with thin and crenate margin of the scales), a pale-leaved form of which is usually named *A. alba* but which Prof. Gray has demonstrated to belong to *A. nigra*. The true *A. alba* (leaves somewhat stouter and obtusish, cylindrical cones with thickened entire margin of the scales) seems to extend from Canada to the northern Rocky Mountains, where it has been gathered by Borgeau; but it has not fallen under Dr. Parry's or Dr. Hayden's observation, on the head quarters of the Kettle, Colorado, Missouri and Columbia Rivers, where *Abies nigra* seems to be abundant, extending down to Sante Fe (Fendler, N. Mex. No. 833). Dr. Parry found it "composing almost the entire forest growth of the mountain slopes of Middle Park about the head of Grand River: a magnificent tree 80 to 100 feet high, with an even, columnar trunk, below, 2-2½ feet in diameter, tapering upwards; of rapid growth; bark scaly, smooth and quite thin, of a purplish brown color, full of tannin, and quite different from the rough brown bark of *A. nigra* of Wisconsin; wood remarkably white and soft, free of knots, and scarcely resinous, preferred for inside work." Could this be *Abies rubra*, Loud., and specifically distinct from *A. nigra*?

Pinus aristata, Engelm., in St. Louis Transact, vol. 2, tab. 5 and 6. Dr. Parry had the good luck to discover this very peculiar and exclusively alpine species "which does not descend lower than 9000 or 10,000 feet," on the higher mountains of Clear Creek. As a full description and a figure has been given in the Transactions of the St. Louis Academy I confine myself here to the statement that it is our only representative of Endlicher's section, *Pseudostrobus*, which comprises numerous Mexican, a few Central American, and a single West Indian species; it is characterized by quinate entire leaves and horizontal ovate cones, with thin apophyses on the long mucronate or aristate scales, and small-winged seeds. In sheltered situations it forms a tree 40 or 50 feet high and 1 or 2 feet in diameter, but on the higher bleak mountains it is a stunted bush, often thickly covered with fruit. Its growth at least in the latter localities, is exceedingly slow, as a stick of scarcely more than one inch in diameter, brought back by Dr. Parry, shows nearly fifty annual rings, some of them 1-60 of a line, and none more than ¼ of a line wide.

Pinus flexilis, James. This species, discovered in the same regions, by Dr. James, has to some extent remained doubtful, as his description in the account of Long's Expedition, and Torrey's diagnosis in the Annals of the New York Lyceum (vol. ii, p. 249) are based on notes only, no specimens

having been collected. By later writers it has been ignored, until Mr. Fendler in 1847 collected it on the mountains above Santa Fe, (Coll. N. Mex. No. 832), when a short notice was published by the writer in the appendix to Wislizenus' Memoir of a Tour to New Mexico, etc., 1848. Endlicher, in his Synopsis Coniferarum, 1847, does not enumerate it, and Carrière in his *Traité des Conifères*, 1855, credits it to Wislizenus, translating only my short remarks. Nuttall, however, had already (in 1849) given a somewhat extended account of it, with a poor figure, in the continuation of Michaux's *Sylva* (vol. iii, p. 107, pl. 112), without clearing up the doubts, which Dr. Parry in his present expedition, 1862, is expected finally to settle. My brother, H. Engelmann, collected it on the head waters of the Platte, and Dr. Hayden on the mountains about the head waters of the Yellowstone, Missouri and Columbia rivers. Dr. Parry notes that the cones grow several together, "semipendulous" at the extremity of the horizontal branchlets; while James gave his plant "erect" cones. Near Santa Fe it grows at the elevation of 8000 or 10,000 feet, and in favorable situations becomes 60 or 80 feet high, and bears "pendulous" cones, according to Fendler's note. *Pinus flexilis* is certainly intermediate between the sections *Cembra* and *Strobus* of Endlicher, and unites the two, as does *P. cembroides*, Newberry, *Pacif. R. Rep.*, vol. vi, Bot., p. 44, not Zucc.* if, indeed, this is not a mere form of *P. flexilis*, approaching by its short cones close to *P. Cembra*. The large seeds of *P. flexilis* are, as Dr. James already stated, and as Dr. Hayden confirmed, eaten by the Indians. They are distinguished from those of any other of our Pines by a persistent, sharp, keeled margin, representing the wing.

Pinus ponderosa, Dougl., is "common through

* Zuccarini's plant of that name is one of the curious little group of American Nut-pines, including the following four species: *Pinus monophyllus*, Torrey and Fremont, with single (not connate, as Eudlicher would have it) leaves; *P. edulis*, Engelm., with 2 leaves; *P. cembroides*, Zucc., (including *P. Llavanana*, Schiede, not Torr., and *P. osteosperma*, Engelm.) with 3 leaves; and *P. Parryana*, Engelm., (*P. Llavanana*, Torr. Bot. Mex. Bound., p. 208, t. 53), with 3-5, mostly 4 leaves. Other characters, taken principally from the bracts of the young shoots, strengthen the specific distinctions. This very natural little group is characterized by the small, almost globose cones, the scales bearing large pyramidal apophyses and large edible seeds, the wings of which remain attached to the scale, which, I suspect, is the case in all "wingless seeds of pines; in *P. Pinea*, however, the wing is very distinct, and detaches itself clearly from the scale, and at the same time also from the seed itself, which is likewise the case in the closely allied, though 5-leaved, Californian *P. Torreyana*, Parry, where the wing, besides, is very thick, and of a corky substance. The great variability in the number of leaves in the nut-pines proves that sectional characters taken from them are without value.

all the lower valleys and less elevated districts of the mountains, associated with *A. Douglasii* and *A. Menziesii*; a most valuable timber tree." Fendler's N. Mex. No. 831. Male aments cylindrical, several inches long.

Pinus contorta, Dougl., "is quite abundant on the crest and slopes of dry subalpine ridges, forming the principal part of the forest there, and extending to near the snow line; a symmetrical tree of rapid growth, 30, or 40 feet high, with slim and tapering trunk a foot in diameter, a smoothish, grayish-brown bark, detached in thin scales, and tough but coarse wood, which is liable to warp, and rarely cut into boards."

New and Rare Fruits.

PRESIDENT PEAR.—We have received from our old friend and correspondent, Dr. S. A. Shurtleff, of Brookline, a seedling pear raised by him, to which he has given the name of the *President Pear*. The tree upon which it grew is now twelve years old, and bore for the first time this season, producing about a peck. The fruit is quite large, of the turbinate, or top-shaped form, stem slender, and half an inch long. The flesh of this was fine, juicy and high-flavored, and we think it will be a valuable acquisition to our present list of good pears. We learn that the Doctor has now some twenty seedlings that have fruited, ten of which are good, and five or six of the ten of a decidedly superior character.—*New England Farmer*.

Domestic Intelligence.

CALIFORNIA WINES.—The following, from a San Francisco paper, shows the extent to which several firms in that state are engaged in the manufacture of wine. Speaking of Kohler & Frohling, our contemporary says:

In Los Angeles, they have rented the entire basement of the City Hall building, which contains seven large cellars. Besides these extensive repositories, they have, at Wolfskill's, and other vineyards near Los Angeles, bodegas or storing vaults, containing upwards of 500,000 gallons of wine in all, and about 20,000 gallons of brandy. At their own vineyard they have 22,000 vines in bearing; but they purchase the yearly crop of some 300 or 400 acres more in that vicinity, and a portion of the

crop grown at Anaheim. During the summer they have ten men employed at their vineyard in Los Angeles; but in the fall, during the busy season or vintage, they have upwards of 150 persons at work, including Indians.

Up to the present time Kohler & Frohling have sent East \$70,000 worth of wines.

DR. JOHN ASA KENNICOTT.

The death of a brother of this well-known Western Horticulturist, reminds us of the distinguished services to Horticulture of the "old Doctor," as he is termed in the West, and as a correspondent sends us a brief sketch of his past history, we annex a portrait of our friend that we have by us.



"Our first acquaintance with Dr. Kennicott, was through the *Prairie Farmer*, which, in conjunction with Dr. Wright, he ably edited, and it was principally through his influence, and by his teachings and example, that Western Horticulture is what it is now. Before he came West, and settled down where he now is at Northfield, he was well-known about Buffalo, New York, as a talented practiser of the healing art, as well as an amateur Horticulturist, and spirited correspondent of the local newspapers. The Doctor is a native of New York State, but has resided about 25 years in Illinois, and at the present time is about sixty years of age.

In his private life, Dr. Kennicott is remarkable for a blunt honesty, and indomitable energy and industry. Few men have resisted greater temptations to a life of luxurious ease and indolence; or gone in to the sere and yellow leaf, with a greater consciousness of having done his best with the

talent given him. In addition to his horticultural eminence, his merits as a Botanist are of no mean order; and he has been fortunate beyond what some lovers of science are infusing a love for this delightful pursuit in the members of his family. His son Robert, is at this time exploring the icy regions of Russian America, and has already sent home specimens of natural history, that are considered among the treasures of some of our most distinguished scientific Societies."

WHITE DOYENNE PEAR.—Mr. Hanford, in a recent number of the *Wisconsin Farmer*, gives the following facts in reference to this variety. These are facts of some long standing. We should be glad to know whether these White Doyenne trees continue their healthy productiveness:

"Ellwanger & Barry, of Rochester, have a plantation of Dwarf trees of the White Doyenne which gave the fourth year from planting at the rate of \$500 per acre, and about the same the sixth year.

C. L. Hoag, of Lockport, N. Y., set out in 1853, fifty Standard White Doyenne trees, and gave them good culture with hoed crops, and the fourth year they yielded four barrels of fruit. He has two old trees which have yielded four or five bbls. annually.

J. J. Thomas says, in Western New York, single trees of the White Doyenne Pear have often afforded a return of \$20 or more after being sent hundreds of miles to market."

GRAFTING IN AUGUST AND SEPTEMBER.—E. S. Salisbury, at Adams, Jefferson county, N. Y., grafts on the 20th of August, and which had made a growth of six inches each. He whip-grafts, using waxed cloth to tie with. He has found that the shorter the scion the better. He regards it perfectly safe to graft in that latitude, from the 20th of August to the 20th of September.—*Rural N.-Yorker*.

PROFITABLE PEARS.—Mr. Wilder, at a late meeting of the Pomological Society, in answer to an inquiry, gave the following list of the six most profitable varieties of pears, viz.: Bartlett, Anjou, Urbaniste, Morceau, Winkfield and Louise Bonne de Jersey.

PLANTING APPLE ORCHARDS.—We have long been under the impression, brought to it merely by observation, that as a rule the trees in our apple orchards are planted too distantly apart. Many farmers look upon the space usually occupied by orchards as almost so much waste. They say, we get so little fruit from the ground taken up by the trees, and we cannot cultivate the orchards, as we

should like, from injury to the roots, etc., so that we are forced, on the score of economy, to abandon apple-raising. Now, practically, an orchard should be an orchard only. Except for grass, it should be left uncultivated, after the trees have reached say about four inches in diameter. We can see no reason why a good crop of grasses should not be continuously produced for a quarter or a third of a century, without disturbance. A top-dressing of manure once in two or three years, we know has produced fine yields of grass annually two crops. The trees have little or no influence upon the crop of grass; indeed, if they possess any, it is in affording a heavier swath *under the trees*.

Hence, instead of setting out young orchards, thirty and thirty-five feet apart, reduce the distance to *about twenty feet*, in the quineunx form; and if at any time the trees should threaten to become a little crowded, prevent it by additional pruning. This is our theory.

The leading purpose of an orchard should be to obtain fruit; next the crop that will do the least damage to the trees. This is grass. Grass, however, will not only do no damage to the apple trees, but the contrary. It keeps the soil moist and of a uniform temperature—protecting the roots in summer against heat and drought, and in winter against the severe effects of alternate thawing and freezing.

It should also be remembered, in setting out young orchards, to get the trees as *low-branched* as possible. They will generally not grow so high, while the low boughs will protect the trunk against the intense rays of the sun in the summer months, which are frequently very injurious to the health and productiveness of the trees.

[We copy the above from the *Germantown Telegraph*, not for what we regard its sound doctrine on the "cultivating" question; but for its excellent suggestions about closer planting, and looking to the orchard for its proper crop, above all.—ED.]

GRAPERIES OF DR. FISHER, FITCHBURG, MASS.
—A correspondent of the *Boston Cultivator*, in a sketch of the place, writes thus of the Doctor's vineries:

"Dr. Fisher has built a grapery, 106 feet long and 18 feet wide, of the double span: that is to say, with a roof of two pitches, running north and south. This is elegantly constructed for the purpose designed. He has 562 30-inch pots, planted with the Black Hamburg grape.—He has now 281 pots in his fruit cellar, taken from the grapery after the fruit had matured, taking care to remove the leaves before moving them. These present an elegant ap-

pearance, hanging as they do upon the vines where they grew, as they stand in a row near the wall of the fruit cellar. They are in a fine state of preservation. The Doctor estimates the amount of fruit on these vines at 200 lbs. I think it even more than that.

In the grapery are 281 pots of the same description, now beginning to leaf and to show their fruit buds. When these have matured and ripened their fruit, they will be removed to the fruit cellar, when those now there will be removed to the grapery, thus enabling the Doctor to grow two good crops of Hamburgs a year, and thereby making this department both a source of profit as well as of great pleasure.

Besides the 281 pots of grapes, the Doctor has in his grapery 1000 6-inch pots of strawberries, consisting mostly of Wilson's. He has 100 pots of the *Triomphe de Gand* and about 50 of other varieties. Besides these, some space is devoted to floral culture, for ornamentation and for the gratification of his family. The past season the Doctor sold about 2500 boxes of strawberries in Fitchburg and Boston, more than one-half of which came to the city. He remarked that the Wilson strawberry, though not of superior quality, yet owing to its wonderful prolificness, he can realize a larger income from a piece of ground planted to this variety than from any other.—Hence the Doctor's reason for cultivating the Wilson berry.

BRANDY FROM GRAPES.—Dr. P. Graves, sends to the *Stockton Republican*, the following recipe for making brandy from the refuse of the grape, after it has been used for making wine: To make brandy from grapes and their refuse, and if you wish to make from the refuse—that is, the stems and what remains after pressing out the juice for wine—you must add to them tepid water, to extract the spiritous part left in them. Take now your extracted fluid, and put the same into your still and distil it over, the same as whiskey. This product is put into a tub with one-fourth pound of fresh burned, pulverized charcoal to the gallon. Stir the whole well up for half an hour, and then fill again your still, and distill it over again with a slow fire. If the heat is too strong, you will not only lose in strength, but in flavor also. In order to make a first-rate brandy, it requires a third distillation. And if you go through the process right, you will have, when of a proper age, an article vastly superior to any imported article you can buy; as there is very little brandy imported but what is made from alcohol, or at least alcohol and brandy

mixed, to say nothing of the unscrupulous use of prussic acid, which is sometimes used to give it a flavor to represent age, thereby destroying health and often life. The above directions will answer to make good and cheap brandy, if properly followed; and now is the time that such information is most needed, as our gardeners scarcely know what to do with their abundant crops.—*California Farmer.*

Foreign Intelligence.

NEW CELERY—*Williams' Matchless Red.*—This solid Red Celery is perfectly hardy, a strong grower, solid and crisp, and of a delicious flavor. It has been taken up for use quite the end of April, without having the least tendency for running to seed.

CENTURY PLANT.—Mr. Charles Martins has collected a number of observations from which it appears that cutting the roots, taking off leaves, etc., accelerates very much the appearance of the flower-stalk. Like in so many other plants, nature will not let her creature perish before having secured its posterity. An instance appears in which the trunk alone, denuded of roots and leaves, and itself mutilated, has flowered before dying off.

The Century Plant accumulates for years and years in its trunk and leaves, the nourishment for the flower-stalk. Hence the wonderful growth of this latter when it does appear, and the commensurate decay of the plant itself.

[We translate the above from a French magazine; but it is difficult to understand how, if the flowering of the plant depends on the accumulations of many years of leaf growth, cutting the leaves away should permit it to flower at all; much less aid it.]

CYANOPHYLLUM MAGNIFICUM CULTURE.—It is a native of Madagascar, and requires stove culture, and temperatures varying from 75° to 80°. Soil three-fourths turfy peat and one-fourth loam, mixed with bits of charcoal and potsherds broken small, to keep the compost open.

FERMENTATION OF BONES.—The *North British Agriculturist* says: "Bones fermented by adding liquid manure or hot water with a portion of salt, are manurally of about equal value, weight for weight, with those treated with sulphuric acid. As sulphuric acid is at present higher in price than formerly, and as there is always liabilities to acci-

dents and injuries to both the clothing and body of persons handling this strong acid, the process of dissolving by fermentation is at once more safe and more economical than dissolving by acid.

NEVER grow a bad variety of any thing, if you can help it. It takes the same room, and wants the same attention as a good one.

SEA-KALE FORCING.—The majority of our ordinary fruits and vegetables are in the best condition when grown without any application of artificial heat. Forced Strawberries rarely, if ever, have the flavor of those grown out of doors, neither have Peaches that come in very early, though later ones under glass, which receive almost total exposure at the time of ripening, are undoubtedly good; and Grapes rarely or ever ripen properly in this country without such assistance. Fruits that will ripen during our summer are invariably better flavored than the same kinds when forced into use at an earlier period. I do not mean that those which are starved into a sort of half-and-half maturity in the autumn are so good; for these evidently wanted a longer summer to perfect them.

A like remark holds good with vegetables that are subject to artificial heat. Kidney Beans, in February, rarely taste so well as out-of-door ones do in July; neither do Rhubarb and Potatoes, although the almost total exposure which is given to the latter before taking-up time, makes them in a great measure out-door productions, and the season they come into use renders them acceptable; in fact, all forced things are more or less esteemed, in consequence of the unnatural period at which they present themselves.

Taking, therefore, for granted, the fact of most forced fruits and vegetables being inferior to the same kind when grown in a natural way, it may be safely pronounced that the one I now speak of is an exception to that rule; for when Sea-kale is grown in an ordinary way with full exposure to the atmosphere, it loses that crispness which is its most essential point of merit. Forcing, therefore, instead of diminishing the quality of this vegetable, improves it, or, at least, a peculiar mode of cultivation is necessary to bring it to the condition fit for table, and this condition being so essential to the article, no apology is needed in bringing the matter before the readers of the *Journal of Horticulture* at the present time.

Soil.—It is easy to conceive that a plant inhabiting the seashore, must of necessity like a fair

share of salt spray; hence, some growers have thought that adding large quantities of salt to a stiff clayey soil was all that Sea-kale wanted—nothing could be more absurd. Beef and pork require large quantities of salt to keep them; but no one ever thinks of using this useful seasoning to preserve summer fruits. And although salting a piece of clayey ground is not so bad, perhaps, as putting salt instead of sugar into Mrs. Storecloset's jam, marmalade or jellies, the difference is less than many would think who have not noticed the effects of large quantities of salt on stiff clayey ground. It is, therefore, better in all cases where Sea-kale has to be planted on such ground, to dig in with it as much sand as can possibly be obtained, removing as much of the clay as possible, and after obtaining a depth of two feet of loose, porous material with a perfect drainage, Sea-kale may then be planted with a fair chance of success. If plenty of sharp sand has been added, that is free from all mineral matters of a noxious kind, salt may, after a little time, be given as a dressing, very little at a time; previous to that, however, I may say that some useful manure may be applied, for Sea-kale is not indifferent to good living—it likes other things as well as urine. Soils possessing the above requirements in abundance, or perhaps superabundance, must have a little more depth given, and; if very dry, a larger proportion of salt may be added here than to the plantation resting on a clay bottom; for, notwithstanding the artificial mixture, the roots may be in, such bottoms have a tendency to render composts laid on them somewhat like themselves. Sea-kale, however, is very accommodating, and rarely fails to grow anywhere, but in certain places it does better than in others.

Sowing and Planting.—It is a very good practise where a fresh bed is wanted to sow the seed on a bed of good garden soil, and when the plants are about the size of table radishes, to take them up carefully, and plant them where wanted. This operation ought to be done in moist weather. Sometimes the seed is also sown in rows 18 inches or more apart. When the plants are allowed to grow, to be taken up for forcing, some little thinning here is also wanted; but in very good soil, crowns with roots like fair sized Carrots may be had in one year, and these do admirably for taking up and forcing. In planting for forcing on the ground, on the old-fashioned system of covering them up with heating material—as leaves, dung or tan—the plants may be about three feet apart each way, and if three plants were planted together at one place, something like flowering Stocks in a mixed

border, there would be a better chance of a good head than if only one plant were put in. Plants from seed are best, but we have sometimes taken up an old plant, and having cut up its roots into small portions of one inch or two inches long, scattered them on a bed of good soil, and slightly covered them with fine mould, taking care that they did not suffer from drought until they began to sprout, and when sufficiently established to move, they were transplanted to their final quarters. Seedlings, however, are better when they can be had.

Forcing.—Hardy as this plant is, and bad as the treatment it often gets, and yet recovers from, it is, nevertheless, not to be driven too hard at all times, and before Christmas it requires more coaxing than it does afterwards. The reason of this is obvious. The plant, like all others, requires rest, and as this does not take place until October, it is not to be wondered at that it becomes impatient if urged into activity in less than a month afterwards. Very urgent forcing then is therefore resented; the plant either refuses to grow at all, or sends up a weak, spindly head not much better than straws—a mere apology for what it ought to be. Slow and careful forcing must therefore be accorded to it for the first crop; the second may bear a little more urging, and after the middle or end of January, it will endure pushing on without complaint. Generally speaking, the easiest way to obtain an early batch is to prepare some plants for taking up, to lift them with as much root as possible, and to plant them in some corner of the Mushroom house. If that is not available, a good deep box may be filled with roots planted in soil, and placed in some warm, but not too dry, dark place. The sea-kale will begin to grow in good time, care being taken to exclude all air and light from the growing shoots by a covering of some kind. In some places where this vegetable is extensively grown, there are, however, pits heated with dung or fire heat, in which are shelves of the proper depth to receive the roots at once. A moist heat must be given, otherwise the shoots instead of being crisp would be tough; a common hot-bed frame or box with a darkened top answers very well, and covering ordinary glass lights with litter is also successfully resorted to; only at such times glass is much wanted elsewhere. But the modes in which this easy kind of forcing may be carried out are so varied and yet so easy as to present themselves to all who have only the most limited means.

Forcing in the ground is another matter, and though much discontinued in places where heating

materials are scarce, it is still done extensively in most country places. The plants occupying sites about a yard apart, pots somewhat like chimney pots, or boxes of a like shape are put over the heads, and a sort of lid over the orifice of each. The whole ground and these pots or boxes are then covered over with heating material, the ground underneath and the air inside the pot or box being consequently warmed, the plant is induced to grow, and is examined at times to see if all be going on right. Over-heating is the powerful evil to contend against here. It is better, therefore, to use leaves only if they can be had, as they seldom heat to injure anything; whereas, horsedung and tan often heat to excess. The gentle heat imparted by oak or beech leaves, will bring on Sea-kale as fast as necessary, and the more slowly it is grown the stouter it is. Occasionally examining the heap to ascertain if any part of it lacks the necessary warmth, is proper now and then; for it sometimes happens that by a long succession of drying easterly winds penetrating the mass, there is no heat. In such cases a barrow-load or two of hot stable dung inserted in a place altogether, not mixed with the mass, but in a lump among it, will create a heat which will be imparted to the surrounding leaves, and a good result will follow; but it is necessary to examine now and then to ascertain if any part be too hot, and if so, this evil must also be rectified by removing a part of the heating substance before it does much mischief, otherwise scalding, as it is technically called, will occur.

Concluding Remarks.—It is needless describing what a good head of Sea-kale is; that only good, healthy, well-grown plants can produce early in the season, afterwards it becomes stronger from plants that were no better in the autumn. Forcing always sacrifices quality in proportion to the extent to which it is carried. Some care is also due to the plants after the heads are cut off, which they do not always receive, and suddenly exposing such plants to the severity of a February frost is trying in the extreme. Gradually uncovering them until mild spring weather sets in must be adopted, after which the ground may be dug with the fork, and the plants allowed to grow on for the summer. Do not remove the flower stems that will in all cases, show themselves until they have been all fully out into flower, when all but such as may be wanted for seed may be cut away, and they will not form any more seed-stems then; but cutting off every effort to flower at the beginning only encourages other efforts in that direction. Should any plant die off, remove as much of the old soil

where it has grown as possible, and bring in fresh before planting others, as like most other things they do not like to grow on the same spot again. I had almost omitted to say that in addition to the successional forcing in the open ground, the last batch may be covered up with pots or boxes in the usual way, and instead of these being covered over with heating material, they may be filled with sand or sand and ashes, through which the heads of the plant will force themselves, and produce a better article than can be obtained by forcing; it will, however, be late; nevertheless, on that account may not be the less useful. Darkness is the most essential thing to obtain good Sea-kale, whether in a forced or natural condition. J. ROBSON.

[It is often a matter of surprise that Americans do not grow this delicious vegetable to a greater extent. Indeed, it is rarely seen. In the hope of encouraging its growth, we reprint the above excellent article from the *London Cottage Gardener*, as it is in the main adapted to our climate, with little variation.]

Foreign Correspondence.

From Our Occasional Correspondent,

PARIS, November 1st, 1862.

CLAMOR away, friend Meehan, clamor and grumble. Dissatisfaction and activity are sources of individual and general success. What ails you? They wont buy liberally, they stick rather to their old notions, your dont go-ahead farmers particularly, and the new varieties which the generous nurserymen offer, an ungrateful public won't take hold of fast enough. The public also lacks taste and eats rather indifferent fruit than excellent ones, and the area of gardens is not much enlarged either in the United States. This is about the substance of your complaints. And you address them to me with a greater relish because "perhaps the French know better" and I "see better things." Well, I am pleased to be your spleen conductor, friend Meehan, but your complaints are as old as the hills, and if it be true that Adam, the old Adam, turned nurseryman in his old age by way of retiring, then he must have grumbled just the same as you, and, but for the deluge, some of his correspondence might yet be found to bear me out.

What, let me ask you, makes you hurl these thunders at me? The knowledge of our superior French fruit, and your inferior American ditto? [Our correspondent may think our fruit inferior,

this is wrong.—ED.] You are mistaken. The whole world is but one city, and all the world are brothers. We labor here under exactly the same grievances. Bad fruit is the rule, good fruit the exception. Farmers have the smallest possible souls and gardens here in France, as well as anywhere. The whole aim of agri and horti and any other culture, is *les gros ecus*, the pence, the dollars and cents—it is money, money, money, no matter what the coin be called.

The worst fruit for the greatest multitude, item the meanest vegetables. This is mocking the democratic motto, "the greatest happiness for the greatest number of people." But it is true for all that Why? oh why? and the first why with a very large w, why is it so? Because, oh because, the latter because with a very small b, bad fruit yields most money. Fine fruit requires cultivation, and cultivation requires expense. *Facit*: no expense, no fine fruit. Or you can put it thus: Study \times cultivation \times expense = good fruit.

I grant, nevertheless that the longer experience of cultivation in this country, the finer qualities of its temperate climate, and above all the greater eating qualities of the Frenchman, give by far the preponderance of quality to things in our market compared with those in yours. Our standard is higher. It is therefore easier and also more profitable here to grow good things. But if it did not pay, they would not come forth; and so, once for all, let us both believe that our American Nature is as good as the French Nature.

Truth lies in a well, and sometimes that well happens to be situated in a foreign country. That may explain why I attempt to put you right on things both American and French. Surely if we two turned Chinese, in China, and went out grafting in those pattens of theirs, or stood in the greenhouse potting, keeping, for convenience's sake, our long tails rolled up under our arms, and lunched on stewed dog, we would still find that paragon of gardening nations much below our ideal. Gardeners, nurserymen and farmers, are essentially grumblers, and the world will not come up to them. Without any joke, the world is ever wrong and they are ever right.

A good thing though, that of this world there is always a small part in a state of creamification. I mean in process of getting to be the cream. Let me whisper it in your ear, *that* part is the *aristocracy* of the world, (hush, keep quiet,) and of such an aristocracy we are getting our share in America. But for them the world would verily run to seed, have and eat none but bad fruit, and return to that

delightfully democratic state of *egalite*, which is still found among the Patagonians.

If this aristocracy of culture, mind, and of gardens and good fruit is everywhere fostered by the possession, more or less abundant possession of the "needful;" if dirty money has to contribute to the advancement of good fruit and fine flowers, to the satisfaction of nurserymen, and to the progress of civilisation in general, who dare grumble? The already mentioned Adam could not make his bargain when, an ex-angel, he was expelled from his "patrimony." He had to take the world as it was. He could not return into Paradise, where was he to go to?

The French love secrets, they tickle ticklish natures, you know. I saw the other day in an *exposition de fruits*, a couple of Duchess pears, one having the imperial N, the other the lovely E, traced in light color on their skins. Each letter surrounded by a wreath of laurel and a crown to top it. The expositor turned me off with a smile when I wanted him to tell me the way how. Now everybody knows that if you paste an N, cut of paper, on the peach, or pear, or apple, the sun cannot color the pasted part of the skin, and that, *par consequence*, you must obtain your N as it were written down by the sun. That much of photography we all know. But whatever you shade the fruit with must remain on it, and would crack off with the growth of it, as the fibres of the fruit distend, and the pasted material cannot distend. This is the secret which, however depend upon it, will soon be an open one.

Whether we shall now have pearographs and peachographs, I don't know. If the sun writes letters it will also draw a face. For a nurseryman, exhibiting fruit, it would certainly be a card if he had his dear countenance on the same.

One thing I know for sure; the sun has not been doing anything of the kind for a long while here in Paris. Rain, mud, colds, wet feet, is the order of every day. Think of your balmy November, of your Indian summer, and pity me. To be sure the florists and the shoemakers reap their harvests now. As Nature gets extinguished out of doors, the public reinstates her in doors—in pots. Pot plants are now selling at a lively rate, and out of pure love for the trade, I wish for rain, and after that for more of the same article.

What plants, where and how they are sold—for the knowledge of that I refer you to my next letter. I believe I can give a few hints to our home gardeners how to improve sales. Meantime I am with the assurance of my distinguished considera-

tion; (isn't that the way diplomatists bow themselves out of a letter?)

Yours,

M.

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The Annual Meeting of this Society will be held on Wednesday, February 4th, 1863, at Brant's Hotel, in the City of Harrisburg.

Editors of journals favorable to the cause of Fruit Culture will please copy. By order of
THE EXECUTIVE COMMITTEE.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING, DECEMBER 2, 1862.

Mr. D. Rodney King in the chair.

Mr. William Saunders presented the following essay on

ON HEATING GLASS STRUCTURES :

The economical application of artificial heat to glass structures is a subject of much interest at the present time, when the desire to accelerate crops of fruits and vegetables, as well as to overcome the casualties of rigorous climates and seasons, is becoming so general.

The expense of heating glass structures has been one of the greatest obstacles to their adoption, more particularly since the opinion has become prevalent that a hotwater apparatus for the diffusion of heat is indispensable to success. The expense of an apparatus of this description for a small house being fully equal to the entire cost of the structure, deters many persons from gratifying their wish to possess a greenhouse or a conservatory.

I suppose that the brick flue is the oldest mode of successfully applying heat to glass houses, and it is not yet entirely discarded by those who recognize that the mode of heating is not the all-important point in the culture of exotics. We are all apt to look for a *scape-goat* when we wish to "shift the responsibility;" and, since hot water has been introduced, the brick flue has been blamed for the shortcomings of many a tyro in plant culture.

The greatest defect of the smoke flue is in its unequal distribution of heat; for, although it is fashionable now-a-days to ascribe to it certain other faults, such as the escape of noxious gases, the destruction of oxygen and giving a *dry* heat, its filling the house with smoke, and with sulphureous and

disagreeable smells; yet those of us who have had a large experience with systems of heating, are well aware that these results do not properly belong to the flue, and it would be just as truthful to assert that every ship is unsafe because several have been lost from being leaky, and otherwise badly constructed.

For rapid conduction of heat no medium is equal to water; and on this point turns the whole superiority of the hot water apparatus over the smoke flue. Water conveys heat rapidly, and we can thus extend it over a large radiating surface, and heat is consequently given off at a low temperature, as compared with the unequal heat of a brick flue, where the portion nearest the furnace is excessively heated, while the largest portion imparts little or no warmth to the atmosphere.

When we come to heat a large house, or a series of houses, no mode is so well adapted as this. Indeed, the limit to which heat may be conveyed by this means is simply a question of mechanical contrivance. I lately visited a forcing graperly, situated seven hundred feet from the boiler that heated the water in pipes, and no difficulty was found in keeping up the requisite temperature.

The superiority of the *principle* of heating by means of water admits of no question; the economical application of the principle is not, however, so well established and is open to much improvement. Various forms of boilers have from time to time been invented, and while all of them may possess some kind of merit, still they have not reached that perfection which might have been expected when we consider the many efforts that have been made. It is but justice to remark that the question of expense has always had a material influence in these efforts, since a popular boiler must be one of reasonable cost.

The great objection to most boilers is the loss of heat escaping through the chimney, with some boilers this loss is excessive, amounting to nearly one-half of the heat generated by the combustion of the fuel. Before the fire or heated air leaves all parts of the boiler, it should be so far deprived of its caloric as to enter the chimney at a temperature but little above that of the water; and beyond this point we cannot possibly economize, so far at least as concerns the water.

Another error frequently committed is that of not putting in a sufficient quantity of pipe; this goes a long way to neutralize the principal object in hot water heating, and is mistaken economy. When the amount of pipe surface is small, the water must be heated to a higher degree, and heat is conse-

quently radiated at a temperature little less, and equally drying to that from a flue. As a guide in this respect the formula has been given for a greenhouse in this latitude, that a lineal foot of 4-inch pipe should be allowed for every 25 cubic feet in the house, taking the temperature of the water at 200 degrees. Thus a house 60 feet in length, 14 feet wide, and of proportionate height would require about 340 feet of pipe; in hot-houses and forcing graperies it should be over, rather than under these figures.

The object of this essay will not admit of entering upon a descriptive comparison of boilers. It is evident, however, that the greater the surface presented to the direct action of the fire, the more effectually will the generated heat be absorbed. It is also well known that when heat strikes a concave surface its power is most effective; consequently cone-shaped boilers are more economical than those of cylindrical form.

Doubtless much would be saved if the smoke and waste heat, that passes from the boiler, were introduced into a flue coursing through the house. I am aware that objections to this arrangement are urged, to the effect that a horizontal flue would impede the draft of the furnace. I have, however, introduced such flues with the best results, by connecting them with the chimney at the floor of the house, and by the aid of dampers in the chimney and flue, the smoke can be made to circulate in either at will. When the fire is being lighted, or perhaps after being freshly supplied with fuel, the damper in the flue is closed and that in the chimney opened; when combustion is active the positions of the dampers are reversed, and the waste heat economized to an appreciable degree.

I will again revert to the common smoke flue as a means of heating. Probably the first flue that was built differed but little from many of those of modern date: few attempts have been made to improve it. It is true that many modifications of heating by hot air have been tried, such for example was the "Polmaise," and they have approached the flue in efficiency just in proportion as they have approached it in similarity of construction.

Flues are generally built with bricks set on their edges, and, as has already been observed the heat is seldom perceptible more than 50 feet from the furnace, and in many not even to that extent, while up to 10 or 15 feet it is very hot. Some years ago I had a small house heated by a flue built in the usual manner. The flue was 110 feet long from the furnace to where it entered the upright chimney. I found that while it barely imparted warmth to the

hand at 50 feet from the furnace, I could not hold it in the top of the chimney without finding it inconveniently warm. It was here evident that heat was escaping which should be transmitted into the atmosphere of the house, simply because the material thickness of the flue prevented it. To remedy this loss of heat I removed the bricks and introduced 50 feet of terra-cotta pipes of 8 inches diameter. The heat was now perceptible on the pipes at 100 feet from the furnace, although the brick flue at 60 feet still remained comparatively cold. Subsequently I added 40 feet more of piping, and I now find that 3 tons of coal enables me to keep up a more suitable temperature than could be accomplished by consuming 4 tons under the first arrangement. The house was a forcing graperie, containing about 4200 cubic feet of air, and of course a higher temperature was required than would be necessary for a greenhouse, the fruit being ripe by the end of April.

I can see no difficulty in constructing a flue that would radiate heat over its whole surface at nearly the same temperature, if the principle is kept in view to *diminish the thickness of the material as it recedes from the furnace*. Supposing a flue 100 feet in length to be built, we would construct the first 10 feet from the furnace of brickwork 4 inches in thickness, and cover with a double thickness of brick; then the next 20 feet would be made of bricks on edge, covered with a single thickness of brick; now 30 feet of terra-cotta pipes would be introduced, which usually average $\frac{3}{4}$ of an inch in thickness, and the remainder filled up with a thin tile pipe, hard burned and not over $\frac{1}{2}$ inch in thickness. It would be found that a flue so constructed would distribute heat very regularly over its whole surface, and so far would approach a hot-water apparatus in efficiency, without its wasteful expenditure of fuel, and at a cost easily reached.

To guard against misapprehension, I may remark that the waste alluded to does not equally apply to all boilers. But I have in view two houses of precisely equal dimensions, situated side by side, one of which is heated by a hot water apparatus, at a cost of about \$700; the other is heated by two furnaces and brick flues at a combined cost of about \$130. To keep up a similar temperature in both houses it requires the consumption of 4 tons of coal under the boiler and 3 tons to the flues. These are demonstrable facts, and the boiler is one of a kind highly praised and popular. So much for economy of fuel.

I have suggested that in heating with water some gain would be derived by combining with it the ad-

vantage of a flue; so also in flue heating we may, to a certain extent combine the the hot water system. This is accomplished by placing a small boiler arrangement, as a cover to the furnace, a couple of two-inch pipes—one flow and one return—are led along the front of the house and attached to a coil of 4-inch pipe at the extreme end from the furnace. Much heat can be derived from this modification, and in span-roofed houses the pipes can be placed on the opposite side to the flue, and thus more effectually distribute heat. I am so fully convinced that for a greenhouse containing not over 6000 cubic feet of air, no better heating arrangement need be desired, that I have made drawings for a cheap boiler suited to this purpose; the result will be communicated to the society, when fully tested.

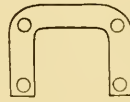
With regard to the general construction of flues and furnaces, it may be remarked of the former that they should be of ample dimensions, especially near the furnace; when common bricks are used as covers, the flues cannot be more than 7 inches in width, and they should not be less than 12 inches in depth. Hard burned bricks transmit heat more freely than those that are soft. Slate covers answer well, and allow greater width of chamber; the mortar used should be of the best quality, thin, and carefully spread, and as little used as possible; plastering the flue either inside or out is objectionable. It should have, if practicable, a gradual rise from the furnace, even if the latter be sunk 3 or 4 feet below the surface to effect it.

The furnace should also be roomy; it should not be less than 2½ feet in length, 1 foot wide and 16 inches in height,—the sides lined with fire brick on edge, backed and supported by 4 inches common brickwork; outside of this a chamber 3 or 4 inches wide should be provided: to cut off the heat from communicating to the surrounding buildings, this chamber should be continued the whole length of the furnace, and also a few feet on the flue with an opening into the house. Openings are also left on each side of the fire-place for admission of cool air to collect the heat from the sides of the furnace, and drive it into the house. The entire furnace may advantageously be surrounded by this chamber. Another important addition should be introduced in the shape of a small flue 6 inches square, connecting with the ash-pit, and entering the bottom of the flue, 2 feet beyond the furnace; air admitted at this point tends to the more thorough combustion of the gases of the fuel, and also increases the draft and propulsion of heat in the flue.

Of auxiliaries to heating glass structures, or rather to prevent the escape of heat, night coverings

should be used. The further consideration of this subject must be deferred for the present, as also any allusion to the baneful influence of high night temperatures."

Mr. James Daniels exhibited an apparatus for heating glass houses. In 1859 he built a glass house, 100 feet long by 21 broad, and put in the ordinary flues, which proved quite insufficient to heat the house. He then, alongside each furnace placed a small water back, 12 by 8 inches, and 2½ thick, and attached 1 inch pipes, which he laid along the wall plates where most of the cold air enters. With the thermometer externally at 0°, he had no ice on the inner surface of the glass. His success induced him to extend the principle of the water back over the whole fire, and dispense with the flue entirely. This resulted in the present boiler, which, though new with him he learns is well known in England as the saddle boiler, although there expensively made of wrought iron, while his, of cast iron, about 20 inches long, 16 high, 18 wide, and 2½ thick, costs only 12½ to 13 dollars. At the two upper angles, as shown in the



diagram, he attaches two-inch wrought iron pipes, extending to the opposite end of the house, and emptying into an open water box. At the lower angles he attaches in like manner two cold water pipes, which also extend the length of the house, and are attached to the same water box at its bottom. The box once filled, a very small quantity of water, say two or three quarts weekly, suffices to keep up the supply necessary for the circulation. If needful, air pipes may be attached to hot water pipes. Prefers small to large pipes, as more effective and more economical of fuel. On Long-Island small pipes are now used in place of large ones; our Eastern Penitentiary is warmed by 1-inch pipes. The circulation is much more rapid in small pipes.

Hé proposes adding a bridge wall under the boiler, and closing the end opposite the fire except a space of two or three inches for the draft, by an addition to his present form of water back. Lastly, he incloses the whole in 9 inch brickwork, with a feeding door and ash pit door as nearly airtight as possible.

Last season his son and his gardener were rendered insensible, by the slowly escaping gas from the brick flue, and the latter was six hours in a state of stupor, and only restored with extreme difficulty. On examining the flue he found it entirely raised off the floor by expansion.

Mr. Eadie thought the boiler too short to be effectual.

Mr. Harrison gave his experience with water backs and coils of pipe, which was in their favor.

Mr. King has a flue in one of his houses, of pressed brick throughout, which is very economical of heat.

In England, the use of bituminous coal causes the flues to clog.

Mr. Mitchell has a flue in his vinery, of terra cotta pipes; has now hanging on the vines, grapes, ripe three months ago.

Mr. Miller approves of the terra cotta pipes; they impart the heat freely and are readily taken down and cleaned.

Mr. Daniels would always prefer the first few feet of the flue of brick. The terra cotta will burst if attached immediately to the furnace.

Mr. McKenzie has Myers' new upright boiler, and likes it.

Mr. Eadie uses Burbidge & Healy's English boiler, as does also Mr. Pollock, who had the first that was imported.

Mr. Ritchie has Myers' boiler and 1200 feet of 4 inch pipe attached. Afterwards made a connection with another house, making 1780 feet in all. The pipes, together with a brick flue, which he considers equal to two pipes; heat 30 cubic feet of air for every lineal foot of pipe, up to a temperature of 60°. In the greenhouse he estimates 50 cubic feet per lineal foot of pipe. Flues cost about 25 cents a foot. Iron pipe, including boiler and setting, costs about 50 cents per foot.

STATED MEETING, DECEMBER 16TH.

Awards: Basket cut flowers, Hanging Vase and specimen plant, *Cypripedium insignis*, all three to James Eadie.

Pears: Columbia, Niles, Duchess d'Angouleme, Passe Colmar, Belle Angevine, Triomphe de Jo-doigne, St. Dennis, Reading, St. Germain, Beurre d'Aremberg, Beurre Diel, Vicar of Winkfield; three of each, by J. McLaughlin, gardener to I. B. Baxter.

Apples, S. W. Noble. Also notice several varieties of local reputation; Lesher, Heister, Ox, Focht, and others, from Dr. A. Bush. Remarkably fine ripe Vicar pears, from Mrs. J. L. Haines.

Resolutions were offered by Dr. T. P. James, on the death of our late member, Dr. Brineklé.

Resolved. That the Society deeply mourns the decease of their late fellow member, William D. Brineklé, M. D., whose connection with it during many years has reflected honor upon the Society.

Resolved. That his untiring zeal and devotion to

the cause of Pomology, has made his name widely known, and will cause his death to be deplored by a large circle of friends.

Resolved. That although ill health has for some time deprived us of the benefit of his knowledge and experience, yet we regarded him as the Nestor of Pomologists, and were sure of his sympathy in all that pertained to his favorite pursuit.

Resolved. That this Society show some mark of appreciation of the labors of their eminent fellow member, by attending his funeral in a body.

Resolved. That a copy of these resolutions, signed by the officers, be furnished to the surviving members of the family, with the assurance that the Pennsylvania Horticultural Society deeply sympathise with them in their affliction, and will ever hold his name in affectionate remembrance.

THE BROOKLYN HORT. SOCIETY,

Held a meeting at their rooms, at the Brooklyn Academy of Music, in December, for the election of officers to serve for the ensuing year. The annual report of the Treasurer was read, showing a balance in hand of about fifty dollars.

The Promenade concert given by the Society in September last, for the benefit of the widows and children of deceased soldiers, realised \$862 63, which sum has been placed in the hands of the Female Employment Society of the city of Brooklyn, to be applied to the object for which it was raised.

The following officers were elected:

President—T. W. Degrauw.

Vice-Presidents—Smith T. Eastman, D. P. Barnard, R. W. Ropes, W. R. Anthony, G. L. Ford.

Treasurer—T. W. Degrauw.

Corresponding Secretary—A. S. Fuller.

Recording Secretary—G. H. Van Wagener.

Librarian—S. B. Brophy.

Executive Committee—C. B. Nichols, G. Hamlyn, Prof. Eaton.

Fruit Committee—T. Dailedouze, A. Bridgeman, T. Weir.

Plants—W. Davidson, G. Hamlyn.

Vegetable Committee—A Chamberlain, M. Collopy, F. B. Wyckoff.

Library Committee—L. A. Roberts, A. S. Fuller, G. H. Van Wagener.

Finance—W. Park, D. P. Barnard, R. W. Ropes.

Inspectors of Election—Thomas Cavanagh, M. Collopy.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

FEBRUARY. 1863.

VOL. V.—NO. 2.

Hints for February.



FLOWER-GARDEN AND PLEASURE-GROUND.

As we start to write these February hints the publisher reminds us that it is not now as last year. Then we had but Eastern, Western and Middle States to write for. Now the mails carry the *Monthly* to all parts of Missouri, most of Kentucky and Tennessee, and to New Orleans, and "we must bear these subscribers in mind in penning our hints." With pleasure, friend publisher, and shall only be too glad when our circle is extended to its ancient boundaries.

And, bearing these Southern friends in mind, we have to recommend 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, applying 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 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.

It is gratifying to note the rapidly increasing taste for shrubbery in ornamental planting. If we have any truly beautiful natural landscape scenery pointed out to us, and analyze the materials that go to make it up, we shall find shrubbery, or "bushes," as we should then term it, going far towards making the place so charming, unless, indeed, it is a distant view; when, of course, masses of vegetation in which trees are undistinguished from shrubs, play a more important part. Not a wall is built, or a fence set up, but bushes and shrubbery of various kinds spring up, and take from the view the roughness of the outlines. This observation will furnish a good guide as to the proper position and uses of shrubbery. There are now fine collections of shrubbery in most nurseries to select from. Of those which are beautiful and can be readily and cheaply obtained, we may name Dwarf Horse Chestnut, flowering in June. The different Dogwoods, particularly *Cornus florida*, *C. sanguinea*, *C. mascula*, *C. alba*, and particularly the variegated English. The Hawthorns are very pretty when in a cool soil, and situation, partially shaded from the sun in summer. There are many fine double varieties of the English which do best when grafted on American stocks. The Double White and Double Red and Pink are particularly desirable. The Laburnum is a rather strong growing shrub, also wanting a cool soil and situation. When the season, as the last, happens favorably, it is the most ornamental

shrub we have. The Sea Buckthorn is very desirable for its pretty silvery foliage; but it should not be set on a lawn, as it suckers somewhat. The shrubby border is the place for it. Of this silver leaved class the Oleasters are very desirable. The yellow is not hardy probably north of New York; but the small-leaved (*Æleagnus parvifolia*) is perfectly so. It has in addition very sweet flowers and pretty berries to recommend it. The Silver Bell or Snow-drop tree is also a large shrub; but its early white flowers give it a claim on most shrubberies, especially as it blooms quite young. The Magnolias *purpurea* and *glauca* are very desirable. The latter, as it grows in swamps when wild, is not often seen cultivated, as it is supposed it will not do in dry soil. This is a mistake. In a deep rich soil it thrives amazingly, illustrating well the remarks of Mr. Huidekoper in another column. 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 well excelled. Its habit is good, and its flowering abundant. Its berries are also very enticing to birds, which form no mean addition to the pleasure of a garden. The *Pyrus japonica* every one knows. The white variety is desirable, though it is more pink than white. The Mist tree is indispensable, from its striking peculiarity of flowering. The White Fringe, with leaves like the lilac, and large pendant clusters of white flowers no less so. There are several Willows which, as shrubs, we would on no account be without, for their flowers large and sweet, so early that the first sun that thaws the March snow, brings them out also. The Goat Willow, and the Villars Willow—male varieties of course—are especially to be mentioned. The Indian Cherry (*Amelanchier*), following the Willow in flowering, and very beautiful; and the Double Pink, and Double White Dwarf Almond, are also early and pretty. The Yellow, White, and Crimson Azaleas are magnificent, but so scarce in nurseries we are almost afraid to have them in this list. The different Berberries can be scarcely spared for their pretty red berries in fall. The Sweet Shrub or Virginia Calycanthus, is one of the sweetest of all flowering shrubs: though its color is dull. The Bladder Senna is very desirable for its love of our summer heat, flowering profusely during July and August. The Mezereon is particularly sweet and attractive, blooming very early, but like the azalea, rather scarce in nurseries. The Deutzias are well known,—*scabra* and *gracilis* are the two best. The Burning bushes are beautiful in the fall; the Mis-

issippi Purple (*atropurpurea*), and the European are two most desirable. The Golden Bell and early Spiræas, as *prunifolia*, *Blumeana* and *Reevesii*, every one wants; as well as the *Wigelia 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 also 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 also is desirable, for though the flowers are not quite as showy as the Tartarian, the habit is more graceful. Then the Mock Oranges or *Philadelphus*, though all white-flowering, afford, by their diversity of habit, many good shrubs. The sweet one, (*P. coronarius*), one of the oldest and best is least common. The Large-flowered and Gordon's upright are the two next best. The Tree Pæonies, though rather expensive, every one wants. The Red and White Snowberry make a 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 or dry; *English White Birch*;

English Hornbeam, a rather small tree; Judas tree, either English or American; European Beech, also the Blood-leaved variety; European Ash, including the Weeping variety and Flowering Ash (*ornus*); European Larch, and the American to make a pretty tree when mature; the Sweet Gum; Magnolia tripetala; Mimosa tree (*Julibrissin*), south of Philadelphia; Paulownia for those who like sweet or showy flowers regardless of an ugly growth; Oriental Plane for grandeur and rapid growth; and of the Oaks, the English, Scarlet, Mossy-cup and Swamp White are the best. The deciduous Cypress, American Linden, and where the Elm-worm is not troublesome, the Am. Eln.

VEGETABLE GARDEN.

The work for February will for the most part consist of preparations for future operations, and particularly for dealing with the manure question. 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.

One of the most interesting parts of a vegetable garden is a hot-bed for starting seeds early. The end of the month will be time enough for those

who have not command of a large supply of stable manure, as the very low temperature we often get at the end of the month, soon absorbs all the heat the hot-bed possessed. It is in any event best to put up the beds in the warmest and most sheltered spots we can find, and to keep cold winds from the manure, by covering it with branches of trees or mats; and the glass should always be covered with mats at night. Tomatoes, egg-plants, peppers and cucumbers, are the first seeds to be sown this way. Cooler frames can be got ready for cauliflower, lettuce, beets, celery and Early York cabbage, a little of which may be sown about the end of the month for the earliest crops. The Cauliflower is a particularly valued vegetable, and no expense spared to get them in perfection will be regretted when one's efforts are successful.

In the open air, should the weather prove favorable, as it often is about the the end of the month, peas and potatoes may be planted. Frost seldom gets deep enough in new dug ground to injure them after this date.

GREENHOUSE.

Soft-wooded greenhouse and hothouse plants for blooming next winter, should be propagated now. The old *Begonia incarnata* is one of the most indispensable for this purpose. Most of the shrubby *Begonias* also are good. So also are the *Justicia* tribe, *Bouvardias*, *Pentas*, *Oldenlandia Deppei*, *Stevias*, *Habrothamnus*, *Cestrum*, *Manetta bicolor*, *Iberis sempervirens*, *Laurustinus*, *Epiphyllums*, *Jasmines*—the Yellow and Catalonian, *Centradenias*, *Mahernia*, *Francisea*, *Aphelandra*, *Beleperone*, *Vinca*, *Thyrsacanthus*, *Salvia gesneriflora*, *S. barbata* and *S. Mexicana*, *Euphorbias*, *Poinsetta*, are a few of the most interesting of the easy struck plants of this class. Most plants strike easy by cuttings. Frequently those which root with difficulty do well by root cuttings. The *Bouvardias*, especially are usually grown this way.

The summer-flowering greenhouse bulbs—*Gloxineas*, *Achimenes*, etc.—are started at this season, and as soon as the young leaves appear, repot into new soil.

While preparing for next winter, forget not the summer flower-beds. Cuttings of bedding plants put in now will make good plants for the purpose, by the time the first of May arrives. A great number of annuals may be sown to advantage now, so as to get them forward early enough to get a good bloom in the flower-borders, when the proper bedding-out time arrives. As many know not what

kinds to select for this purpose, we give a list of a few principal kinds that occur to us as we write. *Whitlavia grandiflora*, *Viscaria oculata*, Sensitive plant, *Schizanthus*, several kinds, *Petunias*, *Zinnias*, Sweet Peas, *Palafoxia Texana*, *Malope grandiflora*, *Verbenas*, *Tropæolums*, *Thunbergias*, German Stocks, *Phacelias*, *Gilia*, *Drummond Phlox*, *Portulaccas*, *Salpiglossis*, *Nemophila*, *Mignonette*, *Maurandias*, *Balsams*, *Ipomœa*, *Isotoma axillaris*, *Larkspurs*, *Linum rubrum*, *Loasa*, *Lobelia*, *Lophospermum*, *Lupines*, *Pansies*, *Gourds*, *Dahlias*, *Candytuft*, *Gaillardia*, *Fenzlia*, *Eutoca*, *Eschcholtzia*, *Erysimum Peroffskianum*, *Clarkias*, *Collinsia*, *Bartonia*, *Browallia*, *Abronia umbellata*, *Cacalia*, *Callirhoe*, *Acroclineum roseum*, *Coreopsis*, *Sweet Alyssum*.

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

This is the season when many of them are to be repotted, or refixed on their blocks. Whenever thus disturbed they are to be put at once to the warmest part of the house, which, at this season is kept at about 75°. In potting use great care not to cover the embryo buds, or they will probably rot.

FRUIT AND FORCING HOUSES.

We would refer again to the general principles laid down last month, and add here particularly in regard to cherries, that a regular temperature is important for them; not high, (55° is sufficient,) before the buds expand—syringing aids to the bursting after expanding—if the air be too humid the flowers are liable to rot before the fruit sets. Peaches and nectarines that may have been early started, will be about setting their fruit late in the month or early in March, when a good watering of warm liquid manure will benefit them. The syringe may be kept going then "all the time." As to early vines, the stopping, tying and thinning heretofore detailed, must be remembered. In early forcing so many bunches are not left on as in a cold vinery, as forcing weakens all plants somewhat, and they are not able to bear so much as when in a natural state of growth. In very strong vines more can of course be left on than on others.

Communications.

MISCELLANEOUS SKETCHES.

BY ORCHIS.

One year ago to day, upon a bright Christmas morning, I sent you my first of these random sketches as a poor but honest gift. The Deodar and Norway droop their branches lower, but are as bright and green as then, and the chirping of the snow-bird falls sweetly on my ear; beautiful emblems of that true love of country, that in the darkest seasons of trial and affliction, although sorrowing for the devastation around us, our hope and trust is as fresh and green as ever. And so it behooves us all that feel deeply interested in the cause of Horticulture, to endeavor, amid the depressing influences that bear upon us, to persevere in the good work, and enlist a renewed interest in its advancement.

With such a desire in my own mind, I could not let the anniversary of the commencement of these sketches pass, without striving to attract attention to a genus of native plants, that have almost been entirely excluded from our gardens. And as space will not permit of a lengthened description of each individual species, I shall merely enumerate a few of the most worthy.

The order *Asclepiadaceæ*; milk-weed or swallow-wort family contains some well-known ornamental plants, among which are the *Nerium Oleander*, *Vinca Minor*, &c.; but the handsomest genus is the *Asclepias*, from which the order derives its name. The species consists of perennial, herbaceous plants, with milky juice, that is emitted copiously from any portion of the plant when broken.

The leaves are opposite, alternate, or in whorls; and the flowers are produced in umbels, either lateral from the axils of the leaves or terminal. Our native species are all hardy, generally of easy culture, and highly esteemed by European gardeners, although scarcely to be found in cultivation with us.

The most desirable species is the *A. tuberosa*: Butterfly weed, Pleurisy root, &c., and is generally found growing along road sides, in dry, sandy, and often barren soil. In deep, rich loam, however, it forms a most splendid feature in a collection.

The corolla of the flowers is of a pale greenish orange, with a brilliant orange-colored crown, and is in perfection during the latter part of summer, a season when flowers are usually scarce. It differs from the remaining species in being devoid of

milky juice, and in having long fleshy roots; from this latter peculiarity the plant derives its specific name. Height of plant usually about two feet, and branching.

The reputed medicinal properties ascribed to this plant have been superseded, and it is, in consequence, rarely used at the present time.

A. rubra is quite rare with us, but is also of great beauty. The stem is simple, smooth, and from two to four feet in height.

The lobes of the corolla are of a bright reddish purple, with the crown quite dark; and the flowers are borne in sessile, terminal umbels. This is the *A. laurifolia* of Michaux, and is so described by Darby. It blooms during the middle of summer.

A. variegata, (syn *A. nivea* of Pursh,) is a very attractive species, growing about two or three feet in height, and mostly inhabiting rather rich soils, in open woodlands, but not unfrequently in the slaty sections.

The umbels are few, very dense flowered, and the flowers have white corollas with a white and purplish crown. This pretty species is not so frequently met with as many others of the family, but is highly deserving of being perpetuated and enjoyed by cultivation.

A. purpurascens has rather large terminal umbels, that are many flowered, and of a dark purple color. It is frequently met with along fence rows, and in old pastures, where it can readily be distinguished from a distance by the rich, dark blossoms. The height of the plant varies from two to three feet, and the flowers appear in early summer.

A. incarnata is the well-known showy species of our swamps and low grounds, along streams, &c., in company with the *Lobelia cardinalis*, *L. syphilitica*, *Eupatorium* and *Vernonia*. It generally grows from three to four feet high, and produces an abundance of handsome light pink or flesh-colored flowers. The cultivation of this plant will probably be objected to by some on the score of *common*, a title too often applied to many of our deserving plants.

A. obtusifolia is quite rare in many places, and although not so attractive as some of the other species, it is nevertheless well worthy of cultivation. The size of the plant is influenced by the soil and situation; occasionally growing about two feet, and often reaching the height of four. The umbels are solitary and terminal, with pale greenish purple flowers.

A. quadrifolia is quite common in our woodlands. The specific name is derived from the middle leaves, which are placed in a whorl of four. The

flowers are in a terminal umbel, with a pale pink corolla, and white crown.

The plant is simple, slender, and rather pubescent; growing from one to two feet high, and blooms in the spring, the earliest of the gems.

A. verticillata is a rather rare species of little value to the florist, but quite interesting to the lover of botany.

It is found growing in dry, sterile places, almost utterly devoid of moisture. The corolla of the flowers is a greenish color, and the crown pure white. The stems are pubescent, branching and quite slender, with long, narrow, linear leaves. It bears removal and cultivation exceedingly well.

The *A. cornuti* or common silk weed, is rather a troublesome plant in some places, and although quite showy when in flower, cannot be recommended for cultivation.

There are about 36 species known to botanists which are mostly hardy.

According to Johnson, they are all herbaceous with the exception of *A. Greeninana* and *A. Mexicana*; two beautiful evergreen species that are quite tender, and require the protection of a hothouse. The most handsome of the genus is, perhaps, *A. currasavica*, which produces brilliant scarlet flowers, but is unfortunately too tender for out-door cultivation.

I fear the foregoing dry article may appear tedious and uninteresting, but if I could only elicit a greater degree of interest on behalf of our native plants, all my trouble would be amply rewarded.

More beautiful flowers are not known to the horticulturist, then are scattered so liberally around us on every side; but a pure love for the beautiful in nature is what is necessary, before these native plants will receive that attention which their merits so richly deserve.

WINE MAKING, FROM A EUROPEAN JOURNAL.

BY J. S. L.

The cellars of the far-famed wine stores of Moët and Chandon, are entered by a flight of steps, cut in the chalk rock. They are extremely vast, extending upwards of a mile under the hill, and ramifying into endless labyrinthine passages, lined by vinous walls. They always contain several millions of bottles, and it was curious to contemplate the huge army of long-necked flasks, with their shining silver helmets, each containing a valiant spirit, and to think of the terrible havoc that they

would make some day, scattering the brains and good resolutions of man and womankind to the winds, that is, presuming they do not come to a premature and inglorious end, "wasting their sweetness," not on the "desert air," but in the humid caverns where they are tenderly laid side by side. Unlike his lusitanian brother, who mellow by age, becoming softer and milder as time clothes him with a venerable beard, he, native of glorious champagne, frequently disdains to have his fizzing spirit pent up within the narrow confines of a bottle, and refusing to bide his time which might have in store for him the enviable destiny of being pressed by the lips of a blushing belle, bursts his crystal prison, and sighs his last on the ground of this dreary vault. And it is worthy of note, that as all great deeds are immediately imitated, the example set by a rebellious and hasty champagne flask, is by no means lost on the multitudinous tribe that lie around. Pop—pop—fizz—fizz—splash—pop—crash—bang; you would imagine all the spirits in the caldron of the French republicque sociale, of A. D., 18—I leave your readers to add the figures—were let loose; and, believe me, no revolution could strike greater terror into the hearts of Messrs. Moët & Chandon, than this rebellion among their bottles. Troops of men, clothed in defensive armor, are sent down to these lower regions to quell the insurrection. I am only stating the truth. For when the explosions are frequent, and the breakage abundant, the workmen who are despatched to suppress the disturbance, wear wire masks to protect themselves from the broken glass, which is projected shell-fashion with considerable force. So disastrous are these explosions, that I was informed on one memorable occasion, upwards of 500,000 bottles were lost before a sufficient quantity of ice could be thrown into the cellars to lower the high temperature, which caused excessive fermentation. In all years a certain loss arises from the latter cause, although the greatest care is taken to reject all bottles which are not strong and of uniform thickness. The estimated average of loss from breakage is 20 per cent.; it varies, however, according to the temperature of the season, from 5 to 40.

All the manufacturing operations are carried on in the absence of daylight. Like miners, they carry a candle with them, and by its light perform their work. Daylight is nowhere admitted into the vaults.

The grapes which are used in the manufacture of champagne wine, are small and very sweet, and

are not gathered until they are perfectly ripe. Few sights are more beautiful than an abundant vintage, when a cloudless sky smiles upon the merriest harvest of the year, and the golden vineyards are peopled with peasants, happy because the weather is fine and the vintage is good. Then are the roads full of fine donkeys bearing heaps of luscious grapes to the streaming wine press. The juice remains in the cask for about four months, when it is bottled. Now commences a series of very delicate operations. Each bottle is placed with its neck downwards, in long racks, having holes cut for the purpose, and it is shaken occasionally, in order to detach the sediment from the sides and to cause it to subside into the neck. When this effect is produced, the wire retaining the cork is cut, and the cork and sediment are driven out by the carbonic acid gas. The greatest dexterity is required on the part of the workmen to get rid of the sediment without wasting the wine. The bottle is then filled up with pure wine, re-corked and re-stacked. This operation is termed disgorging, and it is repeated until no sediment remains. On the last occasion the wine receives a dose of liquor, which is prepared with great care, and is perfectly pure. It consists of sugar candy dissolved in white wine for ordinary champagne, and in red wine for pink. But from the information that I received, I apprehend that for the English market, a *petit soupçon* of brandy is added, the English palate being spoiled by strong brandied wines. The champagne exported to Russia, and that kept for home consumption, is perfectly pure. Formerly, the final operation of corking wiring and capping the bottles was tedious and expensive, as each bottle had to pass through several hands. Now a most ingenious machine, by the simple depression of a lever, effects the work, and in a much more efficacious manner than heretofore. The greatest care is taken to select good corks, and it may convey some idea of the gigantic nature of Messrs. Moët's concern, when it is stated that over \$30,000 per annum is paid for corks alone. They are subjected to immense pressure before they are introduced into the neck of the bottle.

The average quantity of genuine champagne annually produced, is said to exceed fifty millions of bottles: a quantity, however, quite insufficient to meet the public demand, as the great number of establishments for the production of spurious champagne attest. I have heard it stated, on good authority, that in one establishment alone, upwards of 500,000 bottles of so-called champagne, made principally from the stalks of the rhubarb, are an-

nually sold. Some idea may be formed of the relative consumption of real champagne, by different countries, from the following return of the sales in 1843, of the department of the Marne. The total quantity amounted to 2,689,000 bottles, which were thus distributed: England and British India, 467,000; Russia and Poland, 502,000; Germany, including Prussia and the Austrian dominions, 439,000; United States and the West Indies, 400,000; Italy, 60,000; Belgium, 50,000; Holland, 30,000; Sweden and Denmark, 30,000; Switzerland, 30,000; South America, 30,000; Spain and Portugal, 20,000; Turkey, 5,000; France, 620,000 bottles.

It may be interesting in this connexion to observe, that the importations of foreign wines for the eight years preceding 1858, inclusive, have been made at an annual cost to the nation of from two to four millions of dollars. That, in addition to the expenditure for wines, we have annually bought brandy to the amount of more than three millions of gallons in 1851, gradually declining to 1½ millions in 1858. For this vast quantity of liquid ruin, we have annually paid about two millions of dollars; for though this quantity has diminished the price has appreciated. Add to this an importation of spirits, except brandies and cordials, to an amount increasing gradually from 1½ millions of gallons in 1851, to nearly three millions in 1858, causing an annual outlay of from one-half to one and a half millions of dollars for the same period of time. What a comment upon the intelligence of the people of the "United States" do these figures present! Nearly fifty millions of dollars expended in eight years for wines, brandies and spirits, for worse than worthless trash! And could the statistician add thereto, the untold millions of expense the use of these vile products has entailed upon their unfortunate consumers, he would recoil appalled at the contemplation of the tremendous aggregate. Add again the sum of misery, disease and death; the sensuality, vice and crime, they directly or indirectly engender, and he would be forced to the conclusion that the people that so squander the good gifts of the creator, and turn to poison his wholesome fruits, plant in their bodies the seeds of disease and death, obscure their moral brightness, and degrade their minds thus linked with all that is loathsome, vile and demoniac, cannot rightfully hold themselves up patterns of intelligence, or vote themselves "the most enlightened people ever known."

English and American tastes, having been de-

praved by the use of strong drink, crave wines containing a large percentage of alcohol.

The French, naturally a more refined people, are satisfied with common wines, seldom stronger than our cider, but without its harshness. Of these light wines they are said to consume nine hundred millions gallons annually, or about twenty-five gallons to each inhabitant. As cider is generally the handmaid of whiskey, so must the daily use of any drink containing alcohol, eventually deprave the taste and beget an appetite for more stimulating and more alcoholic draughts; and I cannot resist the conclusion that the conversion of the juice of the grape into wine, is a perversion of the best of fruits from its legitimate use.

Much has been made of the argument in favor of the use of light wines, derived from the apparent paucity of intoxicated men in France. If it were true that drunkenness were not common among this people, which has not been demonstrated, it would not therefore prove that the general use of wine by the same class in England and America, would tend to diminish the amount of intoxication and its consequences. There is a wide difference between the common people of France, and those of England and America. The French, light, joyous, refined in their tastes and pleasures, find little enjoyment in the heavy, coarse sensuality of their neighbors and some more distant. To them, wine, dance and song brings gratification in hours of leisure, which an Englishman would seek through copious draughts of ale and gin, or drugged porter until sunken in stupid inebriety.

One of the best arguments in favor of the entire disuse of alcoholic drinks, is, that they are entirely unnecessary to health—utterly needless. A healthy appetite does not crave them,—does not relish them; to such they are indeed repulsive. To the unwholesome viands with which the people of America load their boards and their stomachs, may be ascribed with justice, the depraved appetite for food and for stimulating drinks.

The use of simple food, nutritive and unstimulating, free from all condiment and the greasy abominations of the frying-pan, would do more to correct the misguided taste of the multitude than all attempts to stay the tide of sensual indulgence in drinks, that well-meaning enthusiasts in the cause of temperance reform have or ever will effect. It is not in palliatives that we shall find a remedy for the disease, but by constitutional treatment, and that alone, that we can hope to cure. The faculty of medicine must be instructed that its mission is not to lead the people in blindness, tam-

pering with their prejudices, and encouraging them in unenlightened habits, that the profession may thereby prosper. The "blind, leaders of the blind, will fall into the ditch together." I repeat it, it is intemperance in our choice and consumption of food, that we may find the germs of intemperance in drinks: and though the French, Italians and Spanish wine drinkers may, by the use of light wines, suffer little apparent injury, it is to be ascribed rather to their simple habits, their vegetable diet and more refined nature; and that a more robust, meat-eating and full-fed people would, by the general use of wine, become only a more alcohol-desiring people, and an increase rather than a diminution of intemperance among us would be the natural and inevitable result.

A FEW NOTES ON FINE FOLIAGED PLANTS.

BY MR. DAVID FOULIS, GARDENER TO E. HOYT, ESQ., ASTORIA, L. I.

There is a class of plants which now form a most prominent object at all Horticultural Exhibitions of any note, viz., plants distinguished for their ornamental or variegated leaves, thus showing the taste amateurs have acquired for those striking and graceful plants, and the encouragement given by Horticultural Societies to their cultivation, by offering premiums for their production; for, however valuable many of our flowering stove plants may be, there is something elevating to the mind in looking at a well grown specimen of a Fine Foliaged plant.

Foremost amongst such may be classed the Screw Pine (*Pandanus utilis*), with its spiral, tapering foliage; the Cyanophyllum magnificum, with its handsome umbrageous leaves, overshadowing many rivals; the graceful, drooping Golden Pine, (*Ananassa sativa variegata*); the stately Dragon's Blood plant (*Dracæna Ferræ*); the beautifully marked, elongated leaves of the Pavetta Borbonica, or that metallic-leaved curiosity the *Alocasia metallica*.

There were some interesting and well grown plants of this class in the collection exhibited by Mr. Bridgeman, at Brooklyn, in September last, doing much credit to his taste, and the plant growing abilities of his foreman, Mr. Witham.

Another plant I particularly admired in the collection of Mr. L. Menand of Albany, was *Yucca quadricolor*, a plant that deserves to be much better known; but I fancy will be slow of reproduction.

The *Ancectochili* are rather sparingly grown round New York, but have only to be seen to be admired by all lovers of the beautiful.

The *Cissus porphyrophyllus*, when trained to a block covered with moss, is also very ornamental, the rootlets seemingly deriving nourishment from the damp moss, thus imparting additional lustre, and greater longevity to the leaves.

The cultivation of this taste has also brought out variegated ferns, in proof which we have *Pteris erectica albo lineata*, *argyrea* and *tricolor*, all contributing to the general effect of this deservedly popular class of plants.

THE PLUM KNOT AND THE CURCULIO.

BY MR. S. S. RATHVON, LANCASTER, PA.

The subject, embracing the cause and history of the above named productions of the vegetable and animal worlds, is in danger of being voted a "hackneyed" one, and yet we seem to be as far from its true solution as ever. I have always held, and I am of the same opinion still, that its final solution depends mainly upon the observations and thorough investigations of practical and intelligent Horticulturists; for, under any circumstances, it is a "*knotty subject*."

A writer upon this subject, in the December number of the "*Gardener's Monthly*," "finds it necessary to combat wrong scientific and professional notions—for if 'let alone' they become a sort of guide, however erroneous," and therefore, with some emphasis, he suggests a *theory*, which, however plausible it may appear upon a superficial view, yet is hedged in with all sorts of difficulties in a practical application of its details.

As a preliminary, I may remark, that last season I reared the "curculio" from the small grub found in the plum, the peach and the plum *knot*, to the perfect *imago* state, and I found them all of the same species, (*Conotrachelus nemiphan*,) differing only slightly in size and intensity of coloration. My neighbor has a plum tree which stands not more than fifty feet from my *sanctum*—where I am writing this—and my observations upon this tree alone, form the basis of my present remarks. I have a plum tree of my own of a different variety—the "Yellow Gage," my neighbor's is the Blue Plum, which stands about twenty-five feet from where I am sitting, which never had the smallest particle of a "knot" or excrescence of any kind upon it, but upon the branches overhanging *soft cultivated ground*, it always has a smart "sprinkling" of the curculio. Last season my neighbor's tree had a moderate crop of plums upon it, but a most exuberant crop of "plum knots," some of them as much as ten inches in length, and

five inches in circumference. I advised the removal of them, perhaps with about the same judgment or discretion, that nine out of every ten physicians would recommend the amputation of a limb, to get immediately rid of a disagreeable fungus or exerescence of the bone, simply because I knew no other available means of cure. But, like all constitutionally cancered systems, the disease in a short time only manifested its presence by breaking out with increased violence in other parts of the doomed tree.

I verily believe that the knots removed from this tree would have filled a peck measure, and upon a thorough examination of the whole of them, not more than half a dozen *larvæ* of the "curculio" were found in the softer parts of two or three of them, and these were immediately beneath the bark, between the epidermis and the woody fibre. In the removal of the knots, which took place about the middle of the month of June, all the small branches, badly affected, were entirely cut away, but in the larger ones, some of which were at least two and a half inches in diameter,—they were only cleanly shaved off the sides on which they grew. Within two weeks thereafter, all around the edges of the wounds thus made in the removal of these exerescences, a knotty tissue had raised up higher than in the first instance, and also the smaller wood became increasingly infected, until finally the whole tree, except the naked trunk, and the stumps of the main diverging branches was removed, and these subsequently also become in some degree knotty. For my own part I cannot conceive that the *Curculio* had been in the remotest degree instrumental in producing those knots, and if the thing were possible, there is about as much reason to believe that the bite or "sting" of the insect is as instrumental in producing the cherry, the plum or the peach, into which it afterwards deposits its eggs, as that it first produces a knotty exerescence of the wood for such a purpose.

But the curculio does not sting, according to the proper meaning of that term. It belongs to an order of insects that is destitute of that instrument—at least in such a form as to be capable of inflicting a wound. I believe in every instance where the curculio has been observed in what is called the operation of "stinging the fruit," it has been seen to make the incisions with its teeth—a small but sharp pair of mandibles at the end of the snout. The "wood-galls" found upon oaks and other trees and shrubs, which have been produced by the various species of gall-flies, are the effects of a

multitude of stinging operations, for the females of those insects are provided with an abdominal appendage, called the *ovipositor*—of which the caudal sting of insects is only a modification, and with this instrument alone the wounds or incisions are made, and the eggs therein deposited.

We can easily conceive how such a small insect as the *gall-fly*, may produce such large tubers or *tumors* as are sometimes found, when we reflect that some of these contain as many as five hundred flies, in as many different cavities within the woody fibre of the tuber, and that all these have been produced from so many eggs, each of which has occasioned a separate *sting* in their deposition by the female. I bred three hundred and seventy-five gall-flies from an oak tuber, not more than an inch and a half in diameter, and two inches and a half long, and I am persuaded that at least fifty had escaped before I commenced counting them. Mr. George Hensel of this city, bred about three hundred gall-flies from a small blackberry tuber, about half an inch in diameter, and from the same gall there also came forth two specimens of *Bostrichus*, a small wood beetle, and three of *Authrenus*, belonging to the *skin* or *bone* beetles. But we do not find the *curculios* thus. Occasionally one or two may be found in a large fresh knot or tumor, on the plum or cherry tree, and these have evidently chosen such a situation as accidental, rather than with that premeditation which would lead an insect first to produce a tumor or exerescence, before it employed it as a place in which to rear its young. A more economical adaptation of means to ends does not exist in any class of the animal world than that which exists among insects. Nothing seems to be *overdone* or *underdone*—no unnecessary excess of time and substance is employed—and nothing in this respect is wanting, either where their economies are not interfered with by contingencies beyond the sphere of their being; and therefore we do not see insects producing such immense quantities of black and ugly knots upon our fruit trees, only to rear one young one out of every ten or twenty of them. The writer before alluded to, thinks that "the curculio understands its business," and does not deposit its egg when it makes the "sting" which produces the knot, lest the sap might injure it, "most likely." The sap don't seem to injure the eggs or young of the gall-flies, and *most likely* it would not injure the eggs or young of the curculio, any more than the acrid juice of the unripe plum, peach or cherry injures them.

I do not know a single species of the *Mandibulata*, that has the power of producing a gall, tumor

or knot by its *bite*; all those excrescences are produced by the abdominal sting or ovipositor, which also conveys into the wound a poison or vitiating fluid, which irritates and causes an unnatural increase in the part so wounded. But this faculty does not belong to *Colcopterous* insects so far as I know. It is true there are species of *Aphid*, which produce a sort of gall, but not a solid woody gall like that of the gall-flies or the plum knot. It is merely the raising up of the external cuticle, which finally closes in a hollow sphere around them, within which they are protected, and can suck the juice of the plant or tree, and produce their young unmolested. The vitiation here is not the effect of an *abdominal* sting, as in the gall-flies, nor yet of incisions made by the *mandibles*, as must be claimed by the *new theory* in regard to the cause of the plum knot; because these insects are not mandibulated, but belong to the *suctoria*, and it is known that where they pierce for the purpose of sucking the juice out of plants or the blood out of animals, they leave a swelling and irritating wound in many cases, as in the *bite* of the *bed-bug*, the *squash-bug*, the *horse-fly*, the *mosquito*, &c., &c. The young *aphid* could not live in a solid woody gall, for the reason that it emerges from the egg or the maternal matrix in the *form*, and with all the members except wings, which the parent has, and therefore it is compelled to move about from place to place, making a new aperture when all the sap of the old one is exhausted. This is not the case with the young gall-fly. It is a *mandibulated* worm, and feeds upon the woody tissue as well as the sap.

In my opinion the cause and cure of the "black knot" of the plum and the cherry tree, is a subject which belongs to the study of the botanist or the vegetable physiologist. An occasional crescent mark thereon, or a grub found therein, does not prove the "curculio" the cause of it, any more than the egg or young of the cuckoo found in the nest of a sparrow, would prove that the former bird was the cause or builder of the nest. It is merely a case of self-appropriation, like the *Ichnucous* or cuckoo flies, which lay their eggs in the bodies or in the nests of other insects. I know a number of species of *curculio*, that, in the grub state, live in wood, but none of them produce a gall or "knot." I hope, however, that Mr. A. S.'s remarks may lead to some good result, for the subject surely needs a more thorough ventilation than it has yet received.

P. S. Mr. Jacob Stauffer, who is a Botanist as well as an Entomologist, has now under investigation a number of those "knotty" abnormal produc-

tions, commonly called "cedar apples," which it has often been alleged by respectable authorities, are caused by the sting of insects. I do not intend to controvert this, because I do not *know* whether it is so or not. If the particular insect were designated, I should be better able to speak to that point. In some of these apples Mr. Stauffer has found the *larvæ* of a *Lepidopterous* insect, but in the larger number of them nothing has been found. According to the principles of the *new theory*, the parent insect must first have stung the branch to produce the tumor, and afterwards deposited its eggs therein; but here again are difficulties in the way. In the *first* place, *Lepidopterous* insects are not provided with either a proboscis or anal instrument, that is capable of making an incision either in fruit or in a branch. The haustellum of these insects is a long, slender filament that coils up like the spring of a watch, and this form is given to them for the purpose of drinking up the nectar from the bottom of the cups of flowering plants. Instead of an exerted sting-like ovipositor, for the purpose of making perforations within which to deposit their eggs, they secrete a mucous which covers them over or fastens them to the surface whereon they have been deposited. In the *second* place, even provided they *could* sting and produce a gall or knot; the life of these insects is usually not long enough to wait until a gall had formed for the reception of their eggs. The conclusion seems to be very simple—the insect has appropriated these "apples," like it would any other apple or fruit, as a proper place within which to continue its species, and upon the fleshy tissues of which its young might feed, for these "apples" are penetrated by galleries through which the *larva* has passed in its development.

But the *cause* of the "apple" or fleshy tumor, is quite a different thing, and if produced by an insect at all, must, like the plum knot, be produced by one with which we are not yet acquainted.

[We never knew it questioned that the "cedar apple" was the work of a fungus. We have not just at hand the name of the species that causes the tumors. We shall be pleased to have Mr. Stauffer's views when his experiments are completed.—ED.]

GROWING PLANTS IN SMALL POTS.

BY MR. PETER HENDERSON, JERSEY CITY, N. J.

I have read with much interest your remarks on growing specimens in small pots, and as a partial endorsement of your views, would state the practice we follow here,—not in growing large speci-

mens, for these in a Florist's establishment are not much wanted,—in keeping our sale plants healthy and vigorous in the smallest possible pot that will hold the roots.

We never pot a cutting of any kind in larger than a 3-inch pot, and mostly only in 2-inch size. Verbenas, Petunias, Heliotropes, Salvias, etc., etc., we strike from cuttings in September and October; by this season (January) the pots become filled with roots, and the surface of the soil in the pots is hard and encrusted with green mould,—but now, instead of shifting into larger pots, we merely shake the soil clean from the roots, and *re-pot again into the same pot*, in which they remain until sold in April and May. In this way we get our plants in vigorous health,—certainly not the soft and rank growth that a larger pot would give,—close-jointed plants with a mass of fibrous roots, better fitted for transportation, or planting out of doors than plants of more luxurious growth would be.

Pelargoniums we root early in spring, March or April, pot into 3-inch pots; and when shifting becomes necessary, the plants are taken from the pots, the earth shook off and again repotted in fresh mould in the *same pot*. This answers all the purpose of a larger shift, until the pot again becomes filled with roots. This time we shift into a 4-inch pot, with again the ball partially reduced; finally they are shifted into 5 or 6-inch pots in which they are sold. The plants thus grown are from 12 to 18 inches high, and from 9 to 15 inches in diameter—the leaves almost hiding the pot. I should state, however, that plants thus grown should always be placed on benches covered with sand or sawdust.

It seems to me that many other varieties of plants could thus be successfully treated with a profit both to the florist and to the purchaser,—to the florist in his saving of room and in packing, and to the purchaser in his saving of freight.

There are many purchasers of plants that require them to be packed for distant transportation, that will tell you that they have often to pay nearly as much for express charges and packing as for the original cost of the plants; this would be greatly lessened, benefiting all parties, if this system of growing plants in small pots were more generally adopted.

[We are pleased that our remarks have invited this excellent paper from Mr. Henderson, for which most of the readers of the *Gardener's Monthly* will heartily thank him.—ED.]

ESSAY ON THE MOST SUITABLE TIME FOR THE PLANTING OF FRUIT TREES.

BY WILLIAM HEAVER, CINCINNATI.

To the President and Members of the Cincinnati Horticultural Society:

GENTLEMEN:—At the request of several of my fellow members, I am induced to present the result of my experience as to the best or most suitable season of the year for the transplanting of Fruit Trees.

After the proper preparation of the ground and the soil in which it is designed to plant the trees, which it is presumed has been duly attended to and prepared, other things being equal, the *Fall* of the year is unquestionably the best time for the transplanting of Fruit Trees.

By the Fall, we mean after the growth has been effectually checked by a succession of frosts, so that the leaves have naturally fallen from the trees, or will readily shake off by a slight jarring motion. This period, in the region of which Cincinnati may be considered the center, will generally be about the 1st of November, perhaps varying a few days, according to the character of the weather, or the different species of trees. In nearly all cases, Pear, Plum and Cherry Trees may generally be removed with safety from one to two weeks earlier than Apple or Peach trees.

In the case of Cherry Trees, I would remark, I have found them most difficult to thrive or even live if transplanted in the spring, after the buds show signs of active vegetation, in other words when the buds begin to look green.

An extensively prevailing error so generally exists in regard to the proper time for transplanting trees, that it may almost be classed as a *popular fallacy*. I allude to the notion that because we may be visited by severe frosts so that winter may be said to have fairly set in, hence that the season for transplanting trees has passed; this I say is a popular error. The season is suitable for transplanting trees from the time of the fall of the leaf until the near advent of spring informs us vegetation is again preparing to fulfil its annual office of clothing the trees with verdure, and beautifying the landscape with the emerald green of the youthful foliage, varied and enlivened with the lively tints of the Peach, the blushing hues of the Apple, and the snowy purity of the Cherry, Pear and Plum blossoms.

Fruit trees may be planted with safety during the months of December, January or February, with as much safety as in the months of November, March or April.

For my own part I would rather plant in December than in March, and in January in preference to April, providing the ground is in suitable condition—that is, when it is not in a frozen state, or so wet as not to crumble or break up when worked by the spade or plow. In a majority of seasons, the obstacle to winter planting will generally be the ground being too wet; this applies to clay lands, or lands with clay subsoil. While treating on the subject of the most suitable time for transplanting Fruit Trees, I will advert to a very common practice, which may be set down as another popular error; it is that of purchasers of Fruit Trees going to a nursery, getting their trees and then letting them lay with their roots exposed while they prepare the soil or dig the hole to plant them in. Now the very slightest reflection would impress the mind of the most ignorant person, that the exposing of the roots of trees above ground is a violation of Nature's law governing the case. Every one knows that the roots of trees were designed to be under the surface of the ground; and yet I have seen trees lay with their roots exposed through a long spring day, while the ground or places where they were to be planted, was being dug out for their reception.

Now this mode of violating Nature's law, by unnaturally exposing that portion of the tree to all the prejudicial influences to which it may be exposed above ground, is radically wrong, and cannot but operate detrimental to the after welfare of the tree; Nature intending the roots of a tree to be kept under the surface. As exposing the evil of any abuse without suggesting a suitable remedy, is only drawing attention to without an attempt to correct the evil, I will suggest a very simple remedy for the last named, claiming, however, no originality for the *hint*, as it has been followed by planters of experience for many years, perhaps ages; yet by a figure of speech learned from our worthy President, we are all learners, and in matters horticultural many or all of us have to begin with the alphabet, so that the simple remedy proposed is not designed for the initiated or the experienced planter, but for the inexperienced tyro.

The proposed remedy against unnecessarily exposing the roots of trees longer than is possible, is for the party intending to plant, previous to ordering his trees to be brought, to have a trench dug from two to three feet wide, and one foot deep, varying according to the size of the trees, and as soon as the trees arrive, have them stood in, and the roots covered. This is what gardeners term laying them in by the heels, having them in close

proximity to where it is designed to plant them. They can be withdrawn as they are needed for planting. While recommending any time between the fall of the leaf and the bursting of the buds in the spring, and giving the preference to the early winter months of November and December, over the spring months of March or April, let me not be misunderstood in supposing that some extra precaution is not necessary to prevent injury from the freezing of the roots of trees while out of the ground. This danger should be carefully guarded against.

In conclusion I may add that the foregoing remarks, although written with regard to fruit trees, will apply equally to nearly all deciduous trees, as forest shade or ornamental trees. There are, however, some exceptions; chiefly those with soft, fleshy roots, as the Ailanthus, Magnolias, Tulip Poplars, &c. These are undoubtedly better planted in the spring.

ANTAGONISM vs. CONFORMITY TO NATURE.

BY A. HUIDEKOPER, MEADVILLE, PA.

A good deal of vague uncertain advice is sometimes given by horticultural writers, in the shape of an exhortation to *follow Nature*, when perhaps Nature speaks with a very uncertain voice as to the subject matter under consideration. One writer clinches his theory by saying *conform to Nature*; another thinks he has floored an antagonist, when he avers that Nature has no such contrivances, and works by no such methods as those which have been proposed. Desiring to be very impersonal in this article, I do not wish to be considered as taking sides pro or con with those who have used this argument, but simply to call attention to its inconclusiveness as sometimes used.

When Nature does the very work, in a satisfactory way, which we wish to accomplish, then we are safe in adopting Nature as a precedent; but if she does not, or does it under circumstances which we cannot command, then we must depart from Nature, and by experiment reach at last the result which we aim at. Nature, for an illustration, grows her larches in swamps; but a man may have no swamp on his place or not wish to grow his larches there if he had, and so he violates the teachings of Nature, and finds they do equally well on dry ground. Or take the Quince, which is said in its native country, to thrive by watercourses and to grow in wet places. On removing this tree to a cooler, damper climate, we do not get the best results by placing it in low wet ground, but by plant-

ing it on high, well-drained land, where the tree grows more slowly and the wood matures better. The Calla bears every evidence of being an aquatic or paludal plant. Yet it thrives equally well in a crook in a conservatory.

We therefore get good results sometimes by a partial deviation from habitudes of plants, and so we do also by a departure from the action of Nature. Take for instance vine-growing. Nature grows hers out of doors, you grow yours under glass. Nature throws up a long spindling cane, you head yours back and make it stocky. Nature lets her laterals outgrow and strangle her leaders, you cut them back to a couple of eyes. Nature overloads her vine with bunches and berries, you succeed better by diminishing the quantity of each. Nature generates mildew, you counteract it with sulphur. Nature sends an arctic breeze, you close your northern ventilators and open those to the south. Nature sends a hot breath from the tropics, you reverse your action. Nature drenches the earth with superabundant showers, and you dry off your borders. Nature wilts with the intensity of her midsummer heat, and you irrigate and keep your vines cool with evaporating moisture. Nature sends an unseasonable frost, and you counteract it with a fire in your stove. Nature succeeds one year in five, you fail one year in twenty.

The better rule then is to observe causes and effects—to originate as well as to imitate. If Nature gives the key to your problem, borrow it; if you can work out a better of your own, adopt that. Providence intended human ingenuity to be exercised in horticulture as in everything else. Grafting, pruning, thinning, transplanting, culture, are all improvements on the operation of Nature, and while progress can be made it is illogical to condemn a system for want of strict conformity to Nature.

THE SCIENCE OF PRUNING.

BY MR. JAMES EADIE, GARDENER TO DR. JAMES RUSH, PHILADELPHIA, PA.

(Read before the Pennsylvania Hort. Society).

The Science of pruning is the subject for consideration. The scientific part I will leave to those better able to deal with it, and make a few remarks on its practical performance.

Pruning is certainly a very important subject, and may be divided into winter and summer. Winter pruning may be begun immediately after the fall of the leaf; and when you want early growth, as in forced vines or other fruit trees, it is all im-

portant to have it done as early in fall as possible,—some scarcely wait the fall of the leaf; likewise, in those you wish to retard, it is a good plan to delay it as long as you can with safety from bleeding. To prune aright it is necessary that one should know something of the nature of the plant about to be pruned; yet how often do we find persons cutting away without giving it more than a passing thought. Pruning should never be undertaken without some definite object in view. It is very important to remember that winter pruning strengthens and summer pruning weakens. If you have a tree that is weak and makes a feeble growth, be careful not to take off a leaf in summer, but allow it to ripen all the wood it can, and then prune it well back in winter, leaving only one or two eyes, and by that means you give the roots an advantage over the branches, and having but few buds to supply with sap, there will be an abundant supply for them, and they will break strong and grow well. To admit the sunlight through every part of the tree is a great advantage to fruit bearing: and thinning out well when young saves the use of the saw when old. Apples, pears, peaches, apricots and plums require pruning nearly the same; and when young I would carefully tie out the leading branches, and unless the trees are weak, would only prune in summer, pinching off the points of the shoots every two or three weeks; then there will be little use for winter pruning, and your trees will bear two or three years sooner.

In pinching only take the very point off, not to rob or weaken the tree, but to furnish it with fruit-bearing spurs. By carefully stopping all gross or watery shoots you make them the best shoots on the tree, instead of having to cut them out at the winter pruning.

As before remarked, winter pruning should only be done to strengthen weak or worn out trees, and to thin and regulate the branches. Cherries and currants require pruning the same; the flower-buds being borne on the base of last year's shoots and on short spurs, the tree is both strengthened and the quality of the fruit improved by the young shoots being shortened back, leaving only one or two wood buds on each shoot.

Pruning the raspberry is perhaps the simplest of all, requiring only the cutting out the old canes and thinning out the young to three or four canes, and shortening them back to a reasonable length, say three or four feet. Fall bearing varieties require to be severely cut back to induce them to throw up strong young shoots, as it is on these they produce their fruit. As the raspberry, to be suc-

cessfully cultivated, requires a moist rich soil, mulching is of far more importance to it than any sort of pruning.

But what shall I say of the vine, for there are as many systems of pruning as there are varieties of it. Some will have you spur prune, and assure you there is nothing to compare with it. Others assert nature provides long rods for bearing fine fruit. Some again think they have discovered the key to perfect success in the renewal system; and others advise you not to prune at all. Now where every one has his way, I may have mine. And here let me remark, that more depends on the soil, and for those grown under glass the atmosphere they are grown in, is of far more importance than any system of pruning. To begin with the young vine; we will suppose it one year old when planted, cut it down to four eyes, allow one to grow and ripen as long a cane as possible; next fall cut it down, leaving only two eyes of the young wood; allow two shoots to grow as before; next winter cut them back, the leading shoot to one foot, the second to three feet, then after that use partly spur and partly long rod, just as it is found to fill the house with good healthy bearing wood; and by these means will be secured more good fruit than by adhering strictly to any one system. When you have decided to cut out a rod the following winter for the purpose of renewing the vine, after the fruit is set upon it you may ring it at the part where you intend to cut it; and by preventing the return of the sap you will have finer fruit and ripe two weeks earlier.

The pruning of shade and ornamental trees is very often neglected. When young they are allowed to grow for several years until the tree is ruined, and then the saw is used, lopping off the head and large limbs, entirely deforming and murdering the tree, and leaving it a prey to all sorts of vermin for the few years it is permitted to drag out a miserable existence. Now nothing is further from good management and cannot be too severely condemned. To prune aright you must begin when young, and especially so with shade trees; you must begin with them when planted. Study well the character of the tree and the exposure, always encouraging growth of wood towards the most exposed side. All shade trees of strong growth would be better to be summer pruned; it would improve the symmetry of the tree and prevent the growth of strong shoots which both hurt and deform the tree. Evergreen trees bear pruning well, and for most purposes are greatly improved by being regularly pruned. Evergreen shrubs should in general be pruned twice a year; it makes them grow compact and prevents

storms or snow from injuring them. As evergreen shrubs are planted either for ornament or shelter, to adapt them properly for either they require a regular and careful pruning.

Flowering shrubs, such as the Lilac, Deutzia, etc., require to be pruned after flowering, otherwise you would cut off the flower buds. The pruning of flowering shrubs is entirely different from evergreens, and more nearly resembles that of fruit trees, requiring to be thinned out well to admit the light through every part, and cutting out all weak shoots and useless spray, which having little perfect foliage to elaborate sap robs those shoots which do.

It might be well here briefly to advert to the management of hedges, although the many obstacles which they seem to have to contend with are such as to prevent their very general employment. Whether these difficulties will ever be perfectly overcome, it is not for me here to say, but doubtless were a more careful system of pruning adopted it would be greatly to their advantage. The liability of hedges to become scorched during the hot months of summer, may be more than partially overcome by pruning their tops during the season of growth, and their sides or lower portions in winter this will also prevent them from running out of shape and keep them within reasonable bounds.

NOTES ON NEW OR RARE PERENNIALS.

BY FRANCIS PARKMAN, JAMAICA PLAINS, MASS.

Lobelia cardinalis alba nova. This is a white variety of our native lobelia—the cardinal flower.—It is exceedingly pretty and delicate, though without the brilliancy of its gay prototype. It grows well in common garden mould, enriched with old, well rotted manure, and with us has stood the winter perfectly.

Michauxia campanuloides. This singular plant perhaps has no right here, being not perennial, but biennial. It is, however, so striking in its habit and appearance that we are tempted to introduce it. It grows four or five feet high, with a rigid stem, generally able to support itself, and rough scabrous foliage. From the summit to near the ground, it throws out thickly its rigid branches, each bearing a flower at its extremity and in the axils of the leaves. These flowers are most eccentric and at the same time beautiful in appearance. From the centre projects the pistil and stamens to a great length, and with an odd air of impertinence and intrusion; while the long, narrow, white petals, radiating from this common centre, roll back like those of a Turk's-cap lily. From the length and delicacy of these petals, they are liable

to be dashed by rain, but when the plant is in perfection, it is as beautiful as it is singular.

Digitalis ambigua ochroleuca. By far the best of the yellow fox-gloves. The flowers are as large as in the common purple sort, and the color a clear bright yellow. The spike is well furnished, and the foliage resembles that of *D. lutea*.

Digitalis ferruginea gigantea. We had, last summer, a plant of this variety, above six feet high, about two and a half feet of which consisted of the flower-spike, densely set with its blossoms of rusty red. Just below the main spike grew seven or eight small lateral spikes, and the whole were in bloom at once.

Lychnis Haageana. This fine hybrid *Lychnis* seems to be tolerably well fixed in its character. In a large bed of seedlings, there was no essential varieties except in color. Some were of a deep vivid scarlet, others of a lighter scarlet, and several were pure white. A more gorgeous object than this bed in full bloom is not to be found in the flower garden. The young plants had stood through the previous winter with a little protection. Should it prove thoroughly hardy, *Lychnis Haageana* will rank among the very best of herbaceous plants. Will none of your correspondents give us the result of their experience with it?

Dianthus atropurpureus. Two years ago, Van Houtte, of Ghent, sent us a small packet of seeds, labeled with the above name. In May, we picked the young plants out into a bed, and in August the whole were in bloom. Some were single, some semi-double, some double. Some were of a light crimson, some almost black in the depth and richness of their color. The largest flowers did not much exceed an inch in diameter, but the foliage was almost hidden under the profusion of bloom. In short, we were much pleased with our new pink, our satisfaction being only dashed by a strong suspicion that it was no perennial but an annual. Here, however, we were pleasantly undeceived, for, the next season, every plant pushed vigorously and blared once more with its vivid blossoms. The bloom was protracted through several months, and only ceased entirely with the frost. To the best of our belief, it will prove admirable as a bedding plant, with the additional recommendation of perfect hardiness.

Pentstemon grandiflora. We are partial to the *Pentstemon* family, and not the less so, that they are natives of this continent. Few, however, will bear the northern winter without protection. Of these are *P. digitalis*, a native of Kentucky, and regions adjacent, and *P. pubescens*, a Virginian.

That named at the head of this paragraph, is superior in beauty to either of them, being among the finest of the genus. It is likely, too, to prove perfectly hardy. It is a native of the wild and arid plains, around the head waters of the Platte, where the cold is often intense and the protection of snow capricious and uncertain. It blooms in long spikes of deep blue and white flowers, larger than those of *P. digitalis*. In England, it refuses to bear seed, but in our climate it may be readily propagated by that means.

Echinops Bannaticus. Those fond of horticultural oddities will be pleased with this plant. It is of the thistle family, and, as its name imports, a native of Hungary. The leaves are large, rough and spiny, and the flower stems shoot up from the midst of them to the height of four or five feet. Towards the top they divide into numerous branchlets, and each bears on its summit a head of flowers, perfectly spherical, and from one to two inches in diameter. The color is pale, clear blue. One plant bore at the same time about thirty of these balls, each of which, on a clear, warm day, was half covered with bees, which seem to be especially partial to them. The plant has stood out one winter.

DWARF PEARS IN GRASS.

BY M., PHILADELPHIA.

I have noticed that you do not recommend dwarf Pears in grass as strongly as you do other fruit trees. I have five trees that have been planted five years on my lawn, and I will merely state the facts concerning them.

They are of Duchesse, Giffard, Louise Bonne de Jersey, and the other two names lost. They were two years old when set out, and planted so that the pear was just below the surface of the ground. No enriching materials were put in the ground, nor large holes made; but some years ago, before the lawn was made,—probably 15 years ago,—it was a vegetable garden. The Duchesse is 9 feet high, the Louise Bonne is 12 feet, and the Giffard 10 feet. The latter made a growth this year of 2½ ft., Louise Bonne 2 feet, and the Duchesse 20 inches. The others are nearly the same. No trees can be more healthy or vigorous. I did not let them bear till this year, when the three named bore: The Louise Bonne 21 as fine as any ever seen. The grass about them is mowed four times a year, and the ground never seems very dry about the trees, as the roots of grass often mowed, I believe, do not run deep.

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NATURAL SPORTS OF TREES.

Though nature is often shrewish, and demands to be tamed by strongly coercive means, she is at other times the coy and bashful maiden; and to him who understands her lovely moods, is not so hardly won. To the rude and uncultivated suitor she has no encouraging glance to give; but when she feels she has awakened a tender and sincere passion in her admirer, she is prodigal of her charms. Day by day she whispers to him secrets of which he had never dreamed, and he discovers beauties that he had never known before.

Thus when we enter the wild woods and forests for the first time, we see only a mass of vegetation,—beautiful it is true,—but to our unpracticed eye a confused lump, without order, harmony or special attractiveness. It may be pretty, but how or why we do not know. We seek an introduction, and, leaning on the cold arm of science, pay our particular respects. But fair nature does not enter into our humor. You may call this point an Oak, that an Elm, or the other a Linden; show this species is distinct from that; that is something else; or another one unlike all the rest; but she leaves you alone in these matter of facts. She will have none of them.

Did one ever see beauty in a botanic garden? Are not mere "collections" of plants intolerable? Your Pinetums, your Salictums, and your Thing-a-my-gums might gladden the heart of a Linnæus, or lift wide open the eyes of an Asa Gray; but to the sensitive heart of nature herself you do great violence. That this leaf is shorter, or rounder, or longer; that that seed is oblong or hairy, or that there be a valve more or less in a dried up and shrivelled seed vessel; what of all these to young, blooming, joyous nature?

If you would see nature in her purest beauty, you must lay aside the microscope, dissecting-knife and botanical text-book, and trust to her to teach you

how to love her by her own unaided winning ways.

That row of Red Cedars, your friend Science may tell you, is but *Juniperus Virginiana*; but when you find yourself alone with them, you will see a thousand pretty features science took no note of.

The "pinetum" would be satisfied with its individual "Juniperus," but you will find weeping cedars, upright cedars, compact cedars; cedars gray, blue and green; dwarf cedars, trailing cedars, crested cedars, tasselled cedars, and cedars of many other colors and forms, all of which you will want to fill up the perfect idea of your garden goddess.

These natural variations have already done as much for our gardens as science at least. Accident has been as liberal to us as law. What could we do without the Blood-leaved Beech, Weeping Beech, Fern-leaved Beech, or the many variations of other trees. Some weeping, some upright, some with variegated or colored leaves; and some cut or jagged into curious forms? A friend, whose correctness of taste is almost proverbial, recently remarked, he would sooner journey a hundred miles to see a fine specimen of the golden-leaved variety of the common Yew, than go one to see the rarest *mere species* one could show him.

There are in every woods forms of species that only require the eye of taste to select, and which would add in many instances to the interest of our gardens, and frequently prove of vast utility in the hands of the Landscape gardener.

So also in nursery seed-beds, an observing eye will note that scarcely two plants are exactly alike; and by selecting extreme forms, many pleasing additions to our ornamental things may be preserved to us.

Many of our most valued trees have been obtained this way; most of them have no history, and others saved to us by the "skin of their teeth," as we would say of them if they were animated beings. We have heard that a French gardener, finding among a lot of Beech seedlings one contrary specimen that would not grow for him "any how" after years of trial, he dug it up and threw it on his rubbish heap. Another passing some days after and noting life in the stump replanted it in his garden and it grew; and thus was preserved to us the beautiful Weeping Beech.

A little practical advice may not be out of place in a chapter of this kind. How shall we preserve these varieties when found? A simple question to the professional man, but a puzzler to a great many who read these pages. There are three ways to suit circumstances. A small bush may be layered. Cut the tree pretty well in when it will

push strong vigorous shoots the next summer; when in July or August these may be slit, and the cut part bent down into rich soil. Larger trees can be grafted. Get some stocks of an allied species of tree, and cut them nearly to the ground. Take off the scions before frost injures them, and preserve them from frost but quite cool, till the buds are ready to burst in spring. Then graft; cleft-grafting is easiest. Split the stock, make the scion wedge like, stick it in so that the two outer barks meet, and put grafting wax around. Many can be increased by cuttings—almost all can be if the cuttings are taken off just before the leaves fall in autumn; or if evergreens, when the wood is quite mature. These cuttings must be kept in soil free from damp or frost, but cool, and in spring will usually grow. Some things, however, will not grow well by cuttings, and layering or grafting will be best for them.

The botanist despises these playful sports of nature, and he passes over what he considers wayward ways of hers, as little worthy of his notice. He wastes not as he thinks his Latin and his Greek names on them. She laughs at his rule of producing "like from like" by seed,—and he dooms her to a short lived existence in return. But the horticulturist befriends her; and so he ought. He seizes and fixes all her whims and fancies,—makes daguerreotypes and photographs of them as it were with his cutting-knife; and to make up for the contumely of the botanists, he names the productions, not in a learned lingo, but after all the fair ladies, and pleasant things he knows. And she rewards him,—ever and anon laying aside her shrewish ways, and surprizing him often with pleasures unexpected and delightful.

HEATING ARRANGEMENTS.

When one remarks to another in reference to brick flues, "it must take a long time to heat such a mass of brick work," the answer almost invariably is "yes, but that is no disadvantage, for it will take the longer time to cool." Of course it will; but the relative difference between the heat in the bricks and that in the air, will always be the same. It is not as in two bodies of like natures. If we have water at 50°, and water at 100°—on connecting the two bodies together, one will decrease, and the other increase until the mean temperature is arrived at. Though we may apply additional heat to the body at 100°, the two temperatures will fuse, or at most graduate according to a regular sliding scale. But if we have iron at 100°, and

keep one end still in the fire, and the other in water, no matter how long the iron stays in the water, it will continue warmer than the liquid. This is because it has a greater retentive power than water, and it is this retentive power that is overlooked in all arguments on the merits of thick brick over thin flues.

Two materials of different retentive powers will never equalize their temperatures. The retentive power of brick over atmospheric air is 30 per cent. greater. That is if a thermometer be placed on an one inch thick earthen flue, and it stands at 100°, the atmosphere but two inches from it will be but 70°. The relative proportions will be the same if the temperature be higher or lower, so that if a thermometer on such a flue indicated but 45°. The house would be about 32° or the plants in it about freezing. The thicker the brick, the greater is this retentive power, and proportionate is the loss to the atmosphere.

This may be illustrated in another way. If, on a cold winter's day, we place one hand on a piece of wood, and the other on a piece of iron, we hastily draw back the latter and exclaim "how cold!" Yet the iron, if it has been long exposed, is perhaps warmer than the wood, and it is only its voracious appetite for heat, sucking it unmercifully from our hands, that gives us the painful sensation we call cold. It is we who are cold, not the iron. If we take the bulb of a thermometer under each hand, between the palm and the wood on the one hand, and the palm and the iron on the other,—though from the same fire (in a sense the living body is but a hot furnace) the thermometer over the iron, after fifteen minutes or less have elapsed, will be found several degrees higher than the other.

This retentive power of heating material has a great influence on surrounding temperatures.—There is nothing like experience as a teacher, and we will suggest another experiment which all may try in the laundry room on washing day. First get a good fire in the kitchen stove, and then at some point hang a thermometer, and mark the degree; then put on a large wash boiler of water, taking care to keep the fire as strong as before. As the water gets warm the heat of the room will fall, till by the time the water nearly boils, the thermometer will be perhaps ten degrees lower than at first. Why is this? There is not a greater number of cubic feet of space to heat than there was before, nor is there an atom of heat less from the coal than there would have been without the boiler of water; but the water insists on having and holding a larger share of heat than the air, and this

larger share it will always maintain, no matter what may be the relative degree of heat both are to draw their supply from. Thus it is found that those who have water backs in their stoves, heating water to be conveyed to distant places, may *suppose* they will save fuel at the start; but they *find* they save only an extra stove. They have to use more fuel than before to keep the same heat in the room.

If we have made our ideas clear to the reader, it will be readily perceived that the radiating or the conducting power of the material of which greenhouse flues are made, is of little importance as compared with its *retentive* power; and as flues must be made of some compact material that will retain more heat than the air, the *quantity* of material that goes to make up a flue, is a question of far greater moment than its *quality*. If it were to take 100 lbs. of coal to heat a house to 70°—30 lbs. of that coal would be spent on heating the flue material. If the flue could be reduced one-half in thickness, 15 lbs. less coal would be required to produce the same atmospheric heat.

All the figures we have given are the results of our own observation, and must not be taken as positive conclusions, for the details are not discussed in any treatise on heating structures that we know; and it is well worthy of some scientific mind having the leisure to give it a close study. Our figures however are approximate, and illustrate clearly the correct principles of greenhouse heating. It is questionable whether any data can ever be reached that will serve accurately to compute how many cubic feet any given boiler, or given quantity of coal, or flues constructed in any given manner will heat to a degree required, because the condition of the atmosphere has much to do with the subject.

Moist air is more favorable to the retention of heat than a dry one, and a greater draft on the burning coal in the furnace is a necessary consequence.

Let the gardener's aim be *thin flues* then above all; and let these be as far removed from earth, wood or other *voracious* heat consumers as possible.

We have been led to these remarks by the discussion in the Pennsylvania Horticultural Society, reported in our last, which we regard as one of the most valuable the Society has ever been the means of getting for the public, and we have given these additional hints as an appendix, because the subject was not touched on in the discussion, and it may serve to render the subject more complete. We congratulate the Society on its usefulness, and trust it will continue to receive increased support from Horticulturists; for it should be remembered

even by those who never can attend the meetings, that by the liberal publication of the Society's transactions in this journal they are reaping all the advantages of contributing members, by the discussional meeting supported at great cost by the members of the Society.

PLUM KNOT.

In the proper column we give an article by Mr. Rathvon, Professor of Entomology to the Pennsylvania Horticultural Society, on this subject which we regard as conclusive that the curculio is not the cause of Plum Knot.

We regard the controversy that has gone through our journal the past year on this subject as a model one, worthy of imitation by all polemical debaters. All the arguments given on both sides have been based on careful observation,—on each side with pure reference to the peculiar theory advocated by each. There has been an absence of mere "opinion" very unusual indeed, and we have no doubt all our readers have followed the question as discussed with pleasure and profit.

Now that it is demonstrated that the knots are not of insect origin, so much is gained,—what we now want is a similar discussion, by Physiologists and Mycological botanists, as to the cause, with reference to their part of science. Once let the cause be clearly explained, and a remedy will be easy.

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.

GRAPES AND FIGS IN GREENHOUSES—*Tyro, Philadelphia.*—"Can exotic grapes and figs in pots be started and fruited in a greenhouse, temperature with a sun-heat of 90°, fire-heat 55°, night 40°?"

"At what time ought the grapes and figs be started?"

[Easily. Let them start naturally at any time they choose.]

BEST ONE GRAPE FOR TABLE USE—*G. D., Acton, Mass.*—"What is the name of the grapevine which you consider the most desirable for general cultivation for table use—one that is perfectly hardy in the latitude of Boston? Should you start

grape-slips in a greenhouse, or set them directly in the ground?"

[The Delaware. For those who have no special object in rapid or extensive propagation of grape-vines, it is, by far, the best plan to make grape-cuttings of two eyes in length, and set them in the open ground.]

CULTIVATION OF CATAWBA GRAPES—*D. S. P., Poolesville, Md.*—"Please inform me what you think of Mr. Bright's dwarf and renewal system, or what you think is the best method of training the Catawba. I have fruited it sufficiently to know that it ripens well in this climate."

[We do not know that any vinedarist has adopted Mr. Bright's plan for hardy grapes, and the inference is, that however it may seem in theory, it has been found impracticable.]

We prefer tying to single stakes. The various methods of training and cultivating grapes already in practice are fully set forth in Phinn's recent work, which we recommend to our correspondent.]

NAMES OF GREENHOUSE ANNUALS.—"*Tyro*" will find the list wanted in the "Hints" for this month.

NOTES FOR THE EDITOR OR PUBLISHER should be written on separate slips of paper when addressed under one envelope.

STRAWBERRIES AND GRAPES—*P.*—"I should be glad of your advice as to the best strawberry and grape to plant. I have little time to attend to a selection of varieties, and can glean little from the contradictory reports of committees and papers. I want a kind that will do with little attention, and do for general family use."

[You cannot do better than have Albany Seedling Strawberry or Concord Grape. These are, undoubtedly, the "fruits for the million;" that is, for those who have little time, knowledge or skill.]

PROPAGATING ROSES—PELARGONIUMS—*J. G., Richmond, Ind.*—"I would very much like to know whether it is profitable to propagate roses in moss, and how to work at it.

"Also, how it is best to keep the Fancy-leaved Begonias in a greenhouse during winter."

[Rose-cuttings are benefitted by being kept for two weeks or so in moss, slightly damp, and in a cool place, before planting. It softens the wood, heals the cut, and favors the emission of roots. Many good growers, however, keep the plants that

they intend to propagate from in a cool, shady greenhouse for a few weeks before cutting up, which answers as well.

Fancy Begonias in a *greenhouse* are best kept rather dry, or they are apt to damp. In a warmer place there is no danger of rotting.]

PELARGONIUMS.—The publisher sends us the following, from which we infer that if any of our correspondents would contribute an article on the way to grow good pelargoniums, such article would be welcome to one at least:

"I enclose \$1.50 in paper money for the *Monthly* for 1863. I have been in the habit of sending gold, but it is as great a rarity for me to see hard cash as to see a good grown pelargonium.

"Yours, respectfully,

"J. S., *Fairfield, Conn.*"

ROOT-GRAFTING MACHINE—"A *Subscriber*," *Rochester, N. Y.*—"I saw in your *Monthly*, some two years ago, a notice, with accompanying cut, of a machine for *root-grafting*. Can you inform me if it has ever been brought into successful operation, and if so where it can now be obtained and price of the same?

[One was by Mr. A. Robey, of Fredericksburg, Va.; but in consequence of the attempt of the inhabitants of that region to "root-graft" the Union with a scion that has not taken well on the parent stock, the chief gardener has cut them off from further communication with us. The other was invented by Mr. B. L. Ryder, of Franklin County, Pa., but we have not heard lately whether it was found to answer so well as expected.]

LIST OF FRUITS—HORSE RADISH.—*J. E. S., Washington, D. C.* I mentioned in my letter that a list of fruit trees of the highest quality and annual bearers, were desirable for fruit growers—for many now extensively sold were uncertain bearers and liable to blight. Among pear trees, viz.: Bartlett, Swan's Orange, Howell, Steven's Genesee, Flemish Beauty, Winter Nelis, &c., which you can ascertain from cultivators. I asked what crops should be cultivated on a lease of three years? What does horse radish pay to the acre at \$7 per barrel, and what sized grape vines should be planted to yield fruit in two or three years?"

[The letter referred to never reached the Editor.

Special lists of fruits for different localities, have been undertaken by the National Pomological Society, under the superintendence of Mr. Barry, but the volume is not, we believe, issued from the press yet.

Two year old grape vines are the best to set out to obtain fruit in two or three years. We should desire no other age in any case.

Beyond the fact that most market men consider horse radish in low, rich ground, one of the most profitable crops grown, we can give our correspondent no information, as we have no statistics by us of the usual quantity raised per acre.]

MARANTAS—*Tyro, Philad'a.*—Ought Marantas to be kept in a state of rest like Caladiums in the winter? I have kept mine in a fern case, where it is damp, and the leaves have withered although the footstalks seem to have life in them.

[Your case is too cool. In that case, they show a disposition to die back, and should be kept dryer than when growing freely in a warmer place.]

SUPER-PHOSPHATE FOR SWEET POTATOES.—*S. S., Swan's Station, Pa.,* asks:

"I am desirous of learning, from practical men, something of their experience in the use of pure bone dust, prepared by being reduced to powder, with the use of acids or alkali, and applied as a fertilizer to Irish and Sweet Potatoes and Melons. Surface manuring for grape vines and strawberries, and in short for general garden use. Will it take the place of barnyard manure in cultivating any of the above articles? If you can help me with your or other's experience in the matter, it will much oblige an early subscriber.

[We shall be glad if any of our readers who have had experience in the special cases desired, would favor us with an account of it.]

NATIVE GRAPE EYES.—*A Subscriber, Plattsburg, N. Y.* The time to strike grape eyes depends on the heat. If you have only 55 or 60°, February is time enough. We prefer to cut the eyes with their proper length, about half an inch above, and half an inch below the eye. Mix them with moss for two weeks in a cool place, then set them quite upright down to their buds in pans of sandy soil.

Green cuttings in summer must be taken below a joint.

YELLOW VERBENA.—*W. W., Quebec, Canada.* This is a light sulphur color, with leaves cut like the Empress Elizabeth. It was first advertised in our paper by Mr. Peter Henderson, of Jersey City, New Jersey. It is named "Welcome."

SEVERAL interesting articles are on hand for our next.

Books, Catalogues, &c.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY FOR 1861. From B. P. Johnson, Esq., Corresponding Secretary.

This has been for some time on our table awaiting examination. To say that it is equal to any former volume, is to give it high praise. The report on Steuben Co. is a model one. Every department of agriculture in that limit is covered in the most complete manner. In the statistics of the fruit crop, however, apples and grapes only are referred to.

4166 barrels of cider is estimated as the produce of the county for 1861. The grape crop is valued at \$4740. 5600 gallons of wine have been made, principally at Hammondsport, where the wine Company is in successful operation, and is doing much for the introduction of choice fruit into the county.

THE LESSON OF THE LILIES, a sermon, by the Rev. F. G. Clark, pastor of the West 23d Street Presbyterian Church, city of N. York, May, 1862.

This little pamphlet has been some months by us, but we have read it twice over in that time, a tax,—we should in most cases say—we could ill afford to pay; but in this case a tribute rather which the treatment of the subject well deserved.

The Rev'd gentleman takes for his text "Consider the Lilies." and he proceeds to point out that flowers are given to us as a study, and that they fulfil a ministry of instruction, benevolently ordained by the Creator for us. All nature, Mr. Clark reminds us, is educating. It is a book we cannot shut up. It is the duty of all to study it—not independently of the Bible, but with revelation as an aid in interpreting the obscure passages in this wonderful work of God.

Studying thus the works of nature as a religious duty, he would take flowers to be the department nearest to us, speaking as they do, an humble and most significant language. They speak to us constantly; yet gently, kindly and surely.

In his own words: "Each returning summer spreads them round me. I cannot get away from them. They come to me wherever I go, repeating their lessons, and shaking their tiny fingers in reproach for my insensibility. The crags, the mighty torrents and the woods, are away from the city; I must go to them if I would hear their language. But flowers come to us; they are everywhere; they smile in the market-place; they hang on our house-

fronts; they adorn our parks; and some solitary plant may be seen on the window-sill of a thousand lowly homes, for hardly are any too poor to have one blossom in a summer, if only they love it enough to give it water.

Thus flowers have a sort of universality, which nothing else can rival. And still more, they have an insinuating power which the grander features of nature do not possess. I believe the love of flowers is almost universal. It may be an undeveloped and unconscious gift; but I think very few can live among flowers, and above all see them grow and not love them. Flowers are social, talking things; they tempt us with their fragrance; they coax us with their smiles; they surprise us with their capricious beauty. We cannot resist their approaches. They come up into our hands; they rest on our bosom; they will be plucked and die if only to conquer us and command our love. Surely it will be conceded that nature never comes closer to us, and in no way feels so gently for our heart-strings, as in the endless beauty and fragrance of flowers."

He then proceeds to show how flowers talk to us, in what way they educate the taste, and remarks that "They are a challenge to whatever is refined within us. They call to every pure thought which the ruin of nature has left us. I suppose no one has failed to trace the correspondence between a taste for flowers and a certain interior refinement. We have seen by the roadside what at first we took to be a hoiden, but as we came nearer, and found her gathering wild flowers, we have recalled our hasty judgment, and perhaps a brief conversation has proved that a native refinement was there, of which we little dreamed. Flowers, like little children, are not only educators, but tests of character. He who never notices a flower, and never stoops to look into the eyes of a child, only proves that there is unimproved land in the domain of his soul. I will not consent to the uncharitable judgment which would write him unrefined; but I see one who has yet to learn some of the simplest and purest joys of life; one in whose heart there are strings which the fingers of nature have never touched."

But it is not only the influence they have in producing or refining taste among us, that they possess so great an interest to all. They speak also to the affections, and on this branch of the subject the Rev'd speaker is truly eloquent.

He shows in how many scenes flowers are the presiding emblem, and how many million times

they have "coaxed and knit together hearts which death only parted."

One of the most interesting parts of the discourse is that wherein reference is made to the relation which the subject has to reformatory institutions. Though rather long, we give the extract entire, not that the views are novel, for we as well as some of our correspondents have frequently urged the same principles in these columns; but because the ideas are so beautifully and clearly set forth, that those whom our language may not yet have touched, may feel the importance of the subject. He says: "It is the honor of our age that no class is despaired of. Abandoned men, abandoned women, lost children, the victims of every vice, are gathered into homes prepared for them, where they are kept, restrained, admonished, instructed and evangelized. But this I have to say, that our reformers had better imitate the wisdom and the condescension of God. He covers the walls of our penitentiary with vines, and lavishes flowers in our path. He sends the Gospel to melt and purify our souls; and he sends every variety of beautiful form, to educate our tastes and to call out our natural sympathies. An institution which ignores this principle contains an absurdity. The relations of taste to moral culture are close and intimate. Were I founding an asylum for the reformation of the vicious, my first investment, after shelter, and food, and Bibles, should be the construction of a garden, which should do on a limited scale what God is doing on the grander scale of nature. *Real information cannot be effected by a system of mere restraints and negations.* The Bible does not attempt this. God's providence does not attempt it. The true philosophy of reform is at once to forbid and to invite—to shut up one path while we open another—to curb evil passions and subdue evil imaginations by leading out the soul into other and safe avenues. All permanent advance in our moral tuition may be measured by the extent to which our thoughts, feelings and conceptions, are lifted up and fixed upon objects worthy of them. The experience of sin is, "My soul cleaveth unto the dust." The experience of holiness is, "My soul panteth after God." On this principle, I should count it a most unpromising undertaking to attempt the moral elevation of a class whose tastes for natural beauty I left uncultivated. Hence, if I were visiting an asylum for delinquents, I would visit the garden sooner than the dormitories; and I should hope as much, *after proper religious instruction*, from the refining influence of horticulture, as from any other department of regimen and

discipline. Some of our institutions have strangely overlooked this power, possibly at the cost of a serious discount to their influence and success."

The sermon appears to have been printed merely for private circulation; but we are quite sure that all who are already within the circle of the refining influence of flowers, will agree with us in wishing that it had a much wider distribution than is now modestly permitted to it.

THE AMERICAN JOURNAL OF SCIENCE AND ART, Published by Silliman & Dana, New-Haven, Connecticut.

This work is exclusively devoted to the advancement of Science, and is one which no one interested in the subject, if he have the means, can afford to be without.

Our readers cannot better judge of its value, than by referring to the great amount of original matter, bearing practically on Horticulture, that we have credited to it in our pages the past year.

THE ATLANTIC MONTHLY.—The frequency of superior articles on rural subjects, beautifully written, and always instructive, gives this popular serial a charm that continually attracts our notice. The January number is the first for a long time in which we miss one, but Christmas and New Year must expect to be treated to more domestic stories, and these are of the first class. Our favorites will no doubt come in due time.

RURAL ANNUAL AND HORTICULTURAL DIRECTORY, Rochester, N. Y. Joseph Harris, Publisher.

We have but just read and hastily glanced at this annual, but note sufficient to recommend it cordially. The Horticultural matter, in which we are particularly interested, is we think fuller than usual, and gives it an additional value to our readers over former volumes.

New or Rare Plants.

ABOBRA VIRIDIFLORA.—Of all the interesting means by which our flower-gardens are rendered lovely in their season, ornamental vines and climbers hold the first place. What our florists would do in spring without Cobeeas, Maurandias, Manettas, Passion vines, Thunbergias, etc., it would be hard to tell,—certainly the ladies would find nothing to replace them, gifted as they are in the art of making tasteful objects out of material in man's eyes hopelessly worthless. For their sake then, as well as for our personal love for all that is lovely,

we always welcome any thing really desirable in this line.



The present novelty we feel to be one that is likely to have this popular run. It belongs to the cucumber family; but its dark green and glossy, and finely cut leaves, are in striking contrast to the forms of foliage usual to this class. The berries are of a brilliant scarlet, and we have no doubt that to even those few ladies who prefer a "pretty pickle" to a lovely flower, the plant will still possess an interest.

As the seeds are offered in Europe for sale this spring, we suppose some of our seedsmen will have it on hand.

THUJOPSIS LETEVIRENS.—This exquisitely beautiful little Japanese evergreen has reached Messrs. Veitch in the form of a small living and perfectly healthy plant. That it is a *Thujopsis* the peculiar condition of the foliage seems to show, even in the absence of fruit, which has not been seen. It is described by Mr. J. G. Veitch as a "dwarf grow-

ing plant; habit erect and bushy. Foliage of a very light green." To us it looked at first sight like some erect woody Lycopod, and we almost doubted whether it was a Conifer at all, until the white spaces on the under side of the leaves, by which *Thujopsis* is unknown, caught the eye. A friend suggests that the specific appellation of this should be *Veitchii*; but that name is renowned enough already, and the world is becoming sick of the toadyism and bad taste which lead men to tack one and the same person to heaps of garden things.—*Gard. Chronicle*.

PLANERA ACUMINATA.—A noble deciduous tree found near Yeddo by Mr. J. G. Veitch, 90 to 100 feet high, with a remarkably straight stem. In aspect it resembles an Elm. We understand that a plank of it in the Exotic Nursery, Chelsea, where it has been raised, measures 3 feet 3 inches across. Mr. Veitch informs us that it is one of the most useful timber trees in Japan. Its long taper pointed leaves with coarse very sharp serratures appear to distinguish it satisfactorily from the *Planera* Richardi of the North West of Asia.—*Id.*

LILIUM AURATUM—*New Variety*.—This brings me to the best flower at this Show, the great *Lilium auratum* of Japan, which Mr. Standish brought out here just as Mr. Veitch did over the water. And here Mr. Standish had a second form of the flower—another variety of *auratum*, with all the spots on it of a bright rosy color; and *roseum punctatum*, being a distinguishing name already for a variety of *lancofolium*, this one should also have *roseum punctatum* after *auratum*, so that all may know the extent and the meaning of the application of the name, instead of loading the memory by a new one which could not give the meaning for it one-half so well. But the *roseum punctatum* of this *Auratum* Lily is more manifest in the face of the flower than the same is seen in that variety of *lancofolium*.—*Cot. Gardener*.

RHODODENDRON PRINCESS ALICE, Veitch.—A beautiful hybrid between *Rhododendrons* *Edgeworthii* and *ciliatum*. The flowers are large, of a delicate rosy blush, shading off to white, possessing the perfume of *R. Edgeworthii*, with the neat foliage, dwarf habit and freedom of flowering of *R. ciliatum*. It has received First Class Certificates from Royal Horticultural and Royal Botanic Societies.

RHODODENDRON SESTERIANUM.—Another Greenhouse hybrid, raised between *R. Gibsonii* and *Edge-*

worthii. Its large flowers are of a clear white, with yellow spots on the upper petals, and of a fine form and substance.

The blooms are larger, and if possible more scented than those of *R. Edgeworthii*. It is of German origin.

CRATÆGUS PINNATIFIDA.—Tall thorny shrub, inhabiting the north of China, up to the Amoor district and on the Manchourian coast. Consequently one which will stand our climate probably very well. Long oval leaves, pinnatifid, two to four lobes on each side. These lobes are long and denticulated, smooth on the upper side; hairy at the nerves on the under side. Large denticulated stipules. Flowers on terminal corymbs. Propagation by seed, which mostly take a year to germinate. Can be grafted on *C. sanguinea*, *coccinea* or *oxyantha*.—*Revue Horticole*.

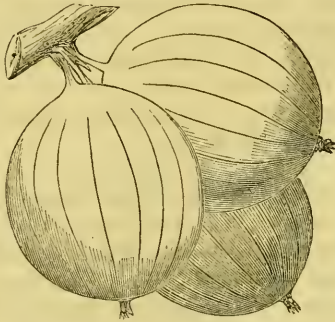
NEW ROSES.—Of new Roses, Mons. Margottin has but two to send out this autumn. One of these, *Louise Margottin*, will be a decided acquisition. It is a seedling of *Louise Odier*, of the same shape and character, the color a very high blush pink, and the habit vigorous—in fact, I should, perhaps, well give an idea of it when I say that it is a *Modèle de Perfection* in the Hybrid Perpetuals, fuller and more vigorous in growth than that pretty *Bourbon*. I very much mistake if this will not be a very favorite flower. It is a somewhat curious thing, that although *Louise Odier* was raised by Mons. Margottin fifteen years ago, and has always seeded freely; and although he has had roses from it of all shades of color, from pure white up to dark crimson, that they have all proved worthless in their habit, and have departed in the first or second year of their brief existence, here, at last, he has obtained one vigorous in habit, and good in other respects. The other rose, also a Hybrid Perpetual, was not in bloom, and is not yet named; I conclude, therefore, that *Louise Margottin* is the better of the two.—*Cottage Gardener*.

SCHISMATOGLOTTIS VARIEGATA, Hooker.—This pretty stove plant was sent from Borneo by Mr. Thomas Lobb. The leaves are borne on erect slender footstalks, some resembling those of a *Maranta*. They are long, of a soft glossy green, with a central, broad, feathery line running through the entire length of the leaf.

Its neat dwarf habit and the well contrasted colors of its foliage will render it a pleasing addition to the stove.

Rare and New Fruits.

MOUNTAIN SEEDLING GOOSEBERRY.—The improvement of our native gooseberries seems to be at a stand still. Houghton's Seedling, and the Cluster, being still the two most popular kinds. Mr. Charles Downing, the eminent Pomologist, was experimenting some years ago, and produced some excellent improvements; but they do not seem to be at all common yet. Whether Mr. D. is continuing his laudable efforts with the gooseberry, we know not; but hope he is.



To call attention to this valuable fruit, we give a cut of one also little known, but an excellent improvement. It shows at least how much has been gained in size. We do not know where it originated. The description we copy from E. Y. Teas' catalogue :

The plant is of a robust habit, often growing five to six feet high: branches upright and strong; leaves deep glossy green, and very large; the berries grow in clusters of three or four, and will average nearly as large as the engraving under ordinary treatment; color of berry dull red; quality equal to Houghton. The plant is very productive and *never mildews*. It is undoubtedly a native, of the same type as Houghton, and more valuable than that fine sort, on account of its fine size and the more vigorous and upright character of the plant.

CUSTARD APPLE.—For a year or two past we have had the privilege of tasting each season, a very tender, delicious little apple, called the *Custard*. It originated on the farm of one of our old correspondents, L. B. Langworthy, Esq., near this city. Mr. L. has always taken a great interest in the introduction and culture of fruits. To him we are indebted for the Clinton grape, and we advise those writers who make such sad blunders about the origin of this variety, to consult with him on the subject. The apple in question is small, very

tender, juicy, and of good flavor, skin green, with a slight blush, and sometimes a little striped or spotted on the sunny side. It resembles the Rambo more than any other apple we are acquainted with, both in appearance and texture, but is even more tender and juicy. The following from a correspondent who has fruited this variety for several years, will give all the information necessary in regard to its origin, quality, &c. :

EDS. RURAL NEW-YORKER:—A new apple has turned up of recent date, known by those acquainted with it by the name of Custard apple. This delicious apple had its origin on the farm of my brother, L. B. Langworthy, in the town of Greece, Monroe county, N. Y. Its history, and the manner in which it was first discovered, is as follows: On the farm are a few scattered natural apple trees, some 80 or 100 rods from his house. These trees were on the place when he bought the farm. The fruit being wild and unattractive, he made no account of them. Having his attention one day called to a pretty well-beaten path that led to this tree, made by the help on the farm, it raised his curiosity to know what the quality of this wild apple was; and greatly to his surprise and delight, it was found to be one of the most melting and agreeable flavored little apples he had ever tasted of. This remarkably fine eating apple is not attractive in its general appearance, being rather small, green skin, and but little red on the sunny side. I have propagated it from the wild tree; the size is much larger than the original apple, but the flavor is the same, and I regard it as a real providential gift, for the gratification of the family. The Custard apple is in eating from November to middle of December.—*Rural New Yorker*.

AUTUMN NELIS PEAR is one of the most delicious pears; besides being an abundant bearer, it will be one of the best for orchard-houses, and for limited space, as it grows quite erect and compact, so that it might be planted 5 feet apart. It was raised from seed by F. J. Graham, Esq., of Cranford, who exhibited it at the Horticultural Society's Grand Fruit Show, in October, where it obtained unanimously a first class certificate. Sir Joseph Paxton, Dr. Hogg, and Messrs. Rivers, Moore, and Eyles, being the judges. Moreover, Mr. Rivers, in a letter to Mr. Graham, says:

"With regard to your pear, we (Sir Joseph Paxton, Hogg and self,) did it full justice last Friday, for we all agreed that its flavor was most exquisite, and gave it a first class certificate."

It has been in bearing six years and has proved

a good bearer, the fruit growing in clusters of from two to upwards of twenty, bringing the branches down to the ground. Fruit fit to gather from the middle to the end of September, of an elongated Bergamotte shape, dark green, turning to pale cinnamon russet when ripe. Flesh tender, of the finest grain, with scarcely any core. Full of juice of "the most exquisite flavor."—*Gardener's Chronicle*.

THE FOURTH OF JULY APPLE.—Louis Pantlen, a German Horticulturist of this city, writes us as follows concerning the history of this apple and its value where grown in Germany:

The Fourth of July apple, in Germany called the Siberian August apple, of which you gave a notice in a previous number of the *Farmer*, was sent from the Russian province Liefland, in the year 1807, to the celebrated pomologist Diel, by Mr. V. Lintern, then governor there, and is celebrated like all our summer apples which originated in Russia, for its great productiveness and hardness. In Germany a sure crop is depended upon every year. The apple there is in the northern part of the country, more acid than in the southern part, where in good season it is considered a fruit for the table.—*Prairie Farmer*.

CRACKING APPLE.—Mr. James Smith, of the Des Moines Nursery, hands us several varieties of his fall and winter apples. Among those of unusual size for their varieties, we find the Northern Spy, Cracking and Jonathan. The *Cracking* is now in season, and is a cracking, good apple—no mistake. Mr. Smith regards the *Cracking* as one of the very best fall apples in his collection. The tree is a good bearer, and the quality of the fruit good enough.—*Prairie Farmer*.

Domestic Intelligence.

BET ROOT SUGAR.—By the energy of John H. Klippart, Esq., of Ohio, much attention is being called to this subject. It has been profitably raised on a lot of 10 acres, last year. The following is Mr. K.'s account of its mode of manufacture:

The first operation to be performed is to reduce the beet to a pulp. This is done by a cylindrical rasp or grater. This grater is operated by an ordinary threshing-machine horse-power. The grater is two feet in diameter, eight inches wide, and revolves 250 times in a minute. In the course of half an hour (by the watch) one thousand pounds

of beets were reduced to a fine pulp. The pulp is then put up in gunny bag cloths, in the form of mats, and placed in a hand press. In a few minutes the 1000 pounds of beets yielded seventy-eight gallons of juice, weighing a trifle over eight pounds per gallon. With a proper press and motive power, the beet will yield about 90 per cent. of juice; but in to-day's operations the Professor obtained 62½ per cent. only. Mr. M., however, said that he would *steam* the pulp, and press it again, when he would get from 15 to 20 per cent. more. From the press the juice is placed in a copper vat or tank, over a brisk fire, and certain chemicals are then added. From this tank the juice is put on a common sorgho evaporator, until concentrated to 20° of Beaume's saccharometer. From the evaporator the juice (now syrup) is placed in *filters* filled with animal black, or more popularly, "bone black;" and, after having been filtered, is again boiled, and is placed in proper vessels for chrysalization to take place. We witnessed every manipulation and operation, from first to last—not with the original juice, certainly, but with it in the different stages, until it appeared as rather dark, but very fine grained and very sweet sugar. There is, therefore, no longer any doubt entertained upon the subject that good merchantable brown sugar can be made from the beet, in forty-eight to ninety-six hours, from the rasping of the beets.

TO RAISE SEEDLING STRAWBERRIES.—In attempting to produce a new variety of strawberries from seed, it should first be decided what are the qualities desired, and then, by selecting two varieties that possess these qualities as near as may be, and by fertilizing one with the other, we can come nearer to the object in view than we should by sowing seed collected indiscriminately from varieties not properly fertilized.

For instance, let us take the Wilson, which is very prolific, quite large and firm, but is rather acid, and too dark color, with a calyx that does not part readily from the berry, and the Peabody, which is not prolific, though large, and is of superior color and sweet, and has a calyx that parts readily.

Now let us place these two varieties at some distance from other varieties, but in close proximity to each other, so that they can be the more readily operated upon. When they come into bloom we remove the stamens from as many flowers as desired, and then with a fine camel's-hair pencil take the pollen from the other variety, and dust it over the pistils of the flower from which the stamens

have been removed. It is well to place a fine netting over the plant operated upon, to prevent insects from fertilizing it with pollen from inferior varieties.

The flowers should have the pollen applied several times, a few hours between each application, so that the fertilization shall be complete. It is well to use both varieties as parents, and fertilize the Wilson with the Peabody, and vice versa, as it cannot be determined which will produce the best until proved by actual experiment. I do not mention the Wilson and Peabody, believing them to be the best to raise seedlings from, but only to illustrate the principles. From my own experiments with them I have been somewhat disappointed, for nine-tenths of the seedling from the Wilson, fertilized by the Peabody, were more acid than the parent, although I succeeded in getting the color, and some of the other characteristics of the Peabody. But using the Peabody as the parent, I have had better success—getting a better colored berry, sweeter, and come plants that were quite prolific, with almost invariably the long neck, which is a peculiar characteristic of the Peabody.

A. S. FULLER.

CHARLES DOWNING'S FRUIT ROOM.—We visited a fruit room where the many specimens of fruit, grown by Charles Downing, were ripened. It stood in a shady place, the front part used for an office, and kept perfectly dark.

Shelves, nicely painted, were arranged around the room, and the various kinds, each in their proper place, giving forth their fragrance like the perfumed air of a greenhouse in spring, was a sight that every amateur of fruit will appreciate. It is necessary that fruit, to be well-ripened, should be kept at as even a temperature as possible, and excluded from the light. As all fruit growers do not have fruit rooms, we have found it ripens very well if placed in old cheese-boxes and placed in a dry cellar or room. If desirable to have pears ripen fast, and nearly all at one time, we have placed them in any clean box, and cover them tightly with woolen cloths. We were fully convinced by what we saw there, and in connexion with our past experience, that great care should be exercised in the selection of varieties of fruit, for it costs equally as much to grow poor as good. In a friend's orchard were trees heavily laden with fair Northern Spy and Vandevere apples, while at home our trees of those varieties were not worthy of cultivation. And again, some of our fine old varieties, which we once thought reliable, as the Fall Pippin, New-

town Pippin and Bellflower, now are of little worth. At Charles Downing's we saw some new varieties that were well worthy of cultivation. First among these was the Primate, then nearly gone. We thought it the best dessert apple we had ever tasted; Dyer was nearly as good. Rebecca, a beautiful waxen fruit, was exceedingly pretty and of good flavor too. We think it will command a good price in market. Townsend was a fair apple; those we saw too small; also the Jefferis and St. Lawrence, very showy and good.—*Friends' Intelligencer.*

GRAPES IN CANADA.—Mr. Read's grapes drew all eyes. He has entered into numerous experiments in raising grapes from the seed, and in crossing the native Canadian growth with improved varieties. By joining the native to the Black Hamburg, he has obtained an enormous round black grape of fair quality. He has nearly two hundred different varieties coming forward from the seed, and is sanguine of being able to obtain an open air grape, which will make good wine, and be better for the table than any now grown. He has bestowed infinite care and labor on this work, and deserves the highest medal that the Provincial Association can give to him. He and the other open air grape growers agree that the Delaware is the best grape now grown in Canada. It is small, but sweet and highly flavored, and is a large bearer. Its size may be improved by judicious culture. All the grape growers are sanguine that they will yet be able to produce a grape which will make wine of home manufacture an article of daily consumption in Canada.

Of grapes grown under glass the exhibitors are yearly increasing, and the finest specimens yet seen were at this exhibition, reflecting great credit on the skill and persevering industry of their cultivators. In open air grapes the competition was keen, and several new sorts introduced which bid fair to displace some of the older varieties, such as the Clinton, Isabella and Catawba.—*Canadian Agriculturist.*

PEACHES IN CANADA.—The season is highly favorable for ripening and bringing to a high state of perfection the peach, and the specimens shown were superior in quality and flavor to any heretofore exhibited. The principal growers were from Niagara, St. Catharines and Hamilton. It is a fact worth recording that some fine peaches were sent from Goderich, showing that in favorable seasons the area for growing this delicious fruit in Canada, is larger than is commonly supposed. A few good

specimens of the Nectarine were on exhibition, but this fruit does not appear to be in general well adapted to the climate of Canada.—*Canadian Agriculturist*.

GRAFTED GRAPES.—My father, in his vineyard this spring, grafted a number of Delaware in three-year old stocks. Many of these are almost as large as a budded plant set six years since; in fact it is the most thrifty growth of grape wood that I ever saw, the wood getting quite hard already. Three weeks since, by actual measurement of canes, shoots and laterals, there was 69 feet of growth; this all grown from one graft, and in about three months time from grafting. What the exact number of feet now is, I do not know.

This will be an excellent way of getting choice varieties quickly.—E. A. KING, in *Country Gentleman*.

"FRUIT FOR MARKET."—Mr. Market wants some "pumpkins," and it don't matter what it is, whether it is in the *shape* of a peach, pear or strawberry, if size is only secured. *Vanity Fair* hits off this rage for large strawberries in good style, when it represents a swell at a hotel table, saying: "Waitaw, I'll take awnother slice of that aw stawbewy."—*Rural New Yorker*.

A LONG PLEASURE DRIVE.—The Central Park drive, seven and a half miles long, is now completed, and was opened to the public on New Year's day.

GRAPES IN WESTERN PENNSYLVANIA.—The *Pittsburg Evening Chronicle* says:

Until lately, our people not seeing any abundant or profitable returns for their labors, took but little interest in growing the grape either for the table or for wine. The varieties planted were only the Catawba and the Isabella, and these unless they obtained very thorough cultivation and close attention, or unless they were planted with a sheltered and southern aspect, very rarely compensated for the space they occupied. The fact is the season was too short to properly mature the fruit. It has only been within a couple of years that any of the noble and delicious fruit of the vine was offered in our markets. The grapes generally were small, sour, unripe, ill-conditioned, and not at all tempting in appearance. They were either unbought altogether, or the purchaser begrudged five cents per pound for them.

That we have a different state of things now is

chiefly due to Mr. Knox, who is the pioneer for the introduction of almost all new and choice varieties of small fruits into Western Pennsylvania. Pittsburg had fairly beaten Cincinnati in the size, flavor and productiveness of strawberries, and there was no reason why she could not also excel in the culture of grapes. He was thus led to examine into the matter, and the result was the purchase and culture of several varieties of native vines, which began to be much talked of in the east, but which had never been seen in these regions. Large plantations were made of the Diana, Rebecca, Herbemont, Elsinburg, To Kalon, Union Village, but chiefly of the Concord and the Delaware. These two varieties, Mr. Knox was satisfied would best suit our climate; would prove most hardy and productive, and would grow the largest, finest, most luscious, and most profitable fruit, either for the table or for wine.

ANALYSIS OF LEAVES OF THE "EARLY HARVEST APPLE."—The leaves were collected September 30, the tree bearing fruit:

Silica,	- - - - -	5.775
Earthy phosphates,		
Phosphate of peroxide of lime,	4.875	
Phosphate of lime, - - -	1.416	
Phosphate of magnesia, - - -	trace.	
Silica, - - - - -	5.125	
Phosphoric acid, - - - - -	5.359	16.775
Lime, - - - - -		36.398
Magnesia, - - - - -		0.075
Potash - - - - -		13.179
Soda, - - - - -		11.616
Chloride of sodium, - - - - -		0.060
Sulphuric acid, - - - - -		0.137
Carbonic acid, - - - - -		15.200
Organic matter, - - - - -		2.850
		101.065

PROPORTIONS.

Water, - - - - -	54.341
Dry, - - - - -	45.659
Ash, - - - - -	4.194
Calculated dry, - - - - -	9.163

N. E. Farmer.

GAS TAR.—This should never be used inside of plant houses. Its fumes are destructive to vegetation. Even when used out of doors, it is sometimes mischievous when very near plants, until with time its volatile matter becomes exhausted.—*Exchange*.

[We have often noted the bad effects referred to, but the tarred work renders the house so warm,

that for early houses, at least, we have doubted whether the advantages of tar were not greater than its evils. We should be glad to see the subject discussed.—ED.]

TROUBLES OF PUBLIC PARKS.—The Central Park, New York, it was boasted, was free from the usual depressing political influences, which seem inseparable from all our public works; but by a recent report to the New York Board of Alderman, it seems that the general trouble is creeping in even here. The Park Committee complain of being so seriously interfered with that they may be compelled to stop the work altogether. To such an extent has the evil grown that *one hundred and seventy-five thousand dollars* are now due to laborers and mechanics, that have been actually appropriated for the purpose, but which seems to have been diverted to other uses.

PEARS IN BOSTON.—M. P. Wilder, will excuse us for publishing the following extract from a private letter:

“Our crop of fruit has been very large indeed. From my pear orchard we have gathered more than one thousand bushels of pears. This is a consummation I have devoutly wished and labored for. My most sanguine expectations have been realised. In fact the present season has been one of perfect fruition, both as regards the quantity and quality of our fruits—the culmination of my hopes, when the million have literally been fed with pears.”

COMMERCIAL MANURES.—Dr. Evan Pugh, of the Pennsylvania Farm School, thus sums up his views in the *Country Gentleman*:

1st. That high priced manures (those worth from \$40 to \$50 per ton,) are valuable only for the phosphoric acid, nitrogen, sulphuric acid and potash they contain.

2d. That the chemist can tell by analysis, not only the *quantity* of these substances present, but he can recognize the condition in which they exist, so far as to be able to find other sources of them in a similar condition, (in regard to assimilability by plants,) from the price of which, in the market, he can obtain the *proper commercial value* of each of them in any manure.

CHEERING SIGNS OF SPRING.—The *Winsted Herald*, Vt., says: “The tops of the houses are just beginning to make their appearance above the snow-drifts, up in Norfolk. In some instances the second story windows have already made their appearance.”

THE LATE DR. BRINCKLE.

DEAR SIR: R. B.'s notice of the late Dr. Brincklé, embraced in a small space much that was true; but I cannot allow such a friend of horticulture, and such a *man* to pass away without a line of reminiscence.

Soon after the establishment of the *Horticulturist*, I introduced my much lamented friend Downing to Dr. Brincklé, at the time residing in Girard Row, Chestnut street, then the most distinguished range of houses in Philadelphia. His dwelling was capacious and fashionable, but its attraction to Downing was a garden about as large as the parlor, and a fourth story front room looking south; in the former was contained a few raspberry bushes, on which the Doctor was experimenting; and there stood the Brincklé Orange, then bearing for the first time, half a dozen of its golden berries; others were about, but the orange was evidently his pet, and it did not deceive his hopes. That fruit alone is a passport to enduring fame; an acquisition in every sense to be proud of.

The up-stairs front room floor was covered with pots of strawberries, on which hybridizing experiments were in progress, and the Doctor told us with evident satisfaction that he could pick a bowl of fruit for a patient at all seasons. Much conversation ensued between the two lovers of improvement, and when we left, Downing said much what your correspondent has written, that Brincklé had done more for horticulture than any other person in America. If I am not mistaken, he thought more than all the rest of us put together.

Dr. Brincklé was eminently a genial man, and loved to have his friends around him. He gave, on one occasion, of a fruit growers' exhibition, the most superb fruit party ever seen in this country. All the gardeners and amateurs vied with each other to fill his noble table with their best fruits; these combined with the very recherché cookery of Philadelphia's best restaurateurs, and the best American and foreign wines, with the addition of the élite of our citizens and the gardeners, formed a scene such as I have witnessed in no country. The occasion proved a most interesting one, serving not only to make people better acquainted with each other, but to promote the cause of fruit progress.

On this occasion a pleasant *ruse* was tried upon the palate of some of our best *judges* of wine. Longworth's champagne was then a new and unknown product, and a supply had been forwarded to the Doctor. I was requested to change the tables from some very superior foreign champagne,

to Longworth's bottles, and to replace his on the European. Then came the trial! The supposed foreign was condemned and Longworth's had the preference from some of the most noted *Cognescenti*. The triumph was complete, and was long a standing subject of hilarity and joke.

Little in the way of labored panegyric need be said of our lamented friend. His own merits are established, "and his deeds do follow him."

Germantown, Jan. 18th, 1863. J. J. S.

[It is pleasant to receive this additional tribute to the memory of our departed friend, whose full history is yet unwritten as it deserves to be.

During a delightful day spent with the Doctor last summer, his first meeting with Downing happened to be one of the topics of conversation, and it was evident from the pleasure it gave him to recount all the incidents, that he derived as much happiness from the meeting as Downing did.

Horticulture, especially the fruit department of it, has not met so great a loss since Downing's death; and we have no doubt all the Horticultural Societies throughout the country, have by this time given public expression to their sense of his worth.—Ed.]

Foreign Intelligence.

WALNUTS ON A GRAPE VINE.—A correspondent sends us the following curious account he has met with in a recent French periodical:

"No, you don't say so! exclaims here every one of those readers of the *Gardener's Monthly*, who are most hungry for the latest and most incredible news. They belong to that class of general readers who delight in fat murders, rich developments, and the extraordinary and most unlikely in general. They must not take it amiss if we tell them that the *Gardener's Monthly* cannot afford to cater for their taste and so to their—"no you don't say so!" we answer at once, "yes, we don't!"

We will simply relate a freak of nature which happened last fall in Valreas, in the department of Vancluse, in the empire of France. A gardener of the name of F. Deydier, passed there through a vineyard, and found on a 13 year old vine, a shoot of walnut that seemed about five years old. Instead of letting nature have her whole swing, and returning after a lapse of seven years to gather the nuts—if any—what does he do in the anxious pursuit of knowledge, not worth having, but cut off the branch and find what he expected. Namely, that the nutty invader had gone down into the

trunk, and was growing lustily on a persecuted and wronged individual of a grape vine.

We have seen two veracious copies of wood cuts which accompany Mr. Deydier's report to a French horticultural magazine. The first shows the whole trunk of the vine, the latter cut shows the cut-off branch.

As the moral follows the fable, so the explanation follows this wonderful tale. A branch had undoubtedly been trimmed off at that particular elbow, into the cavity formed the wind blew a ripe nut, the nut took root, flourished and lived in happiness, till M. Deydier, in an unlucky hour, remarked and killed it. Could he not wait and let the world see the end of the struggle of *might vs. right?* Vegetable and dramatical justice seemed to demand it.

LIGHT ON VEGETATION.—At one period only in the life of a plant is the agency of light injurious, viz.: In the first process of the germination of the seed. A short time after a seed has been committed to the ground it begins to absorb moisture, and gives out a quantity of carbonic acid gas, even though no oxygen be present. In this case the process stops; but if oxygen gas be present it is gradually absorbed in the same proportion: at the same time the farina of the cotyledons becomes sweet, being converted into sugar. "Hence it is evident," says Dr. Thomson, in his "System of Chemistry," "that the farina is changed into sugar by diminishing its carbon, and, of course, by augmenting the proportion of its hydrogen and oxygen. During the process of germination a considerable amount of heat is evolved, which always happens when oxygen gas is absorbed. The whole process so far seems to be the work of chemistry alone. The reason, then, why the agency of light is injurious in the germination of the seed is because it tends to fix in the tissues of the embryo plant the carbon which ought to be thrown off."—*Journal of Horticulture*.

FLORAL PAVEMENTS.—There is a very beautiful fashion of floral decoration, and chiefly, I think, in Italy—originating I suppose, in the gorgeous-colored mosaics and the prevalence of glowing colors of that sunny land.

They form on great occasions there a sort of floral pavement, marking out distinctly the pattern on the ground, and then filling it in with a perfect mass of many-colored petals, Rose leaves, white and red, Camellias and Violets, Lilacs, Syringas, red Poppies, blue Corn-flowers and Carnations, all

contributing their gay and scented petals.—*London Cottage Gardener.*

NEW BOOKS. *The Miniature Fruit Garden; or, The Culture of Pyramidal and Bush Fruit Trees, with instructions for Root-pruning &c.* By Thomas Rivers. Eleventh Edition. London; Longmans.

THERE is no better indication of the increasing taste for the cultivation of fruit trees, than the repeated issue of new editions of these little books of Mr. Rivers'. When we compare the class of horticultural works that are now brought out with those that were most popular twenty years ago, we cannot but remark the greater proportion of pomological works in the present day. To have written a book on fruit trees twenty ago was to blacken paper and add to "waste;" and the unlucky wight who was rash enough to indulge in such a work might consider himself lucky if his publisher did not bring a heavy charge against him for his rashness. Here is "The Miniature Fruit Garden" in its eleventh edition, and with no indications of senility about it. We have so often reviewed this useful little work that little more is required of us than merely to announce its reappearance, and to draw attention to some novel features in this edition. Among the engravings there is a very excellent one of a pyramidal Morello cherry, illustrative of the following extract:

"The Morello cherry on the Mahaleb stock, cultivated as a pyramid, forms one of the most prolific of trees; but as birds carry off the fruit when only half ripe, each pyramid should have a bag of tiffany placed over it, and tied round the stem of the tree at the bottom. Any garden, however small, may grow enough of this useful sort by planting a few pyramids, lifting and replanting, or root-pruning them biennially, and pinching in every shoot to three leaves (as soon as it has made five) all the summer. The Kentish cherry, also a most useful culinary sort, may be cultivated as a pyramid with great success. A French variety grown near Paris, in large quantities, and known as the 'Cerise Aigre Hative,' which may be Englished by calling it the Early Sour Cherry, is a most useful kind for the kitchen. In going from Paris a year or two ago to Versailles, by the 'Rive Droite' railway, I was much struck by seeing in the market gardens between Surennes and Puteaux, on the left, large plots of dwarf trees, about the size of large gooseberry bushes, and some very low trees, all covered (as they appeared to me from the railway carriage) with bright red flowers. I found, on inquiry, that

these were cherry bushes—literally masses of fruit, of the above variety, the most prodigal bearer known. The trees are generally propagated by suckers, but succeed very well on the Mahaleb stock, and form very nice pyramids.

"I need scarcely add, that the culture of all the Duke tribe of cherries, by closely pinched-in pyramids, biennially removed, or biennially root-pruned is most satisfactory. It is, perhaps, more easily performed than root-pruning, and the trees soon form perfect pictures. I have seen nothing in fruit-tree culture more interesting than handsome compact pyramids of such sorts of cherries as the May Duke, Duchesse de Pallnau, Empress Eugenie and Archduke. One feels surprised to find that as yet but few lovers of gardening know of the existence of such trees.

"It will much facilitate the operation on their roots if the trees be planted on small mounds.

"In forming plantations of pyramidal and dwarf cherries on the Mahaleb stock, it is necessary to arrange them with a little care. The two groups, those of the habit of the Morello tribe, and those of the compact habit of the May Duke, should be planted in separate rows. Bigarreau and Heart cherries are too short lived when grafted on this stock, in most description of soils, to be recommended.—*Cottage Gardener.*

NEWEST SORTS OF DAHLIAS.—The following novelties of this beautiful autumnal flower, were brought into the markets, of England, this year, at very high prices—18s., 24s. and 27s., a bulb. Without exaggeration it may be said that the whole are paragons, each presenting in color and form either a novelty or an improvement. These new sorts have been obtained by the most celebrated Dahlia cultivators of Germany, Messrs. Sieckmann & Mardner, and are of the choicest sorts which gained prizes at the Dahlia Show, at Erfurt, last autumn.

1. GRANDIFLORA.

German Pink.—Delicate pale rose on white ground, with light purple violet; pink-like striped and sprinkled.

A. Henderson.—Dark cherry brown, with amaranthine and light violet border.

Gardener's Sweetheart.—Light gold yellow, with brownish crimson tips, delicate coloring.

Gardener's Favorite.—Dark rose peach blossoms, graceful tubular form.

Autumn Queen.—Pale pea green, with soft rose tint.

Delicate Pink.—White, with delicate lilac and

black purple, finely striped and sprinkled, charming.—*Gardener's Chronicle.*

FOREIGN FRUIT.—The last great horticultural show at Namurs, was the most remarkable ever seen in Belgium. There were more than 30,000 specimens of fruit exhibited, comprising 8000 varieties. It required 9000 plates to hold this immense quantity of fruit. The Belgian gardeners produced the finest pears; the Germans the finest apples, and the French the finest grapes.

A FRENCH CRYSTAL PALACE.—We understand that Sir. Joseph Paxton is about to construct at Passy, near Paris, for the Emperor of the French, a new Crystal Palace, of such dimensions that that at Sydenham will shrink into insignificance if placed beside it.

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING, JANUARY 6, 1863.

W. L. Schaffer, Esq., in the chair.

EARLY FORCING OF FRUITS AND VEGETABLES.

Mr. E. Satterthwait, appointed as the Essayist of the evening, in addition to a written essay prepared for the occasion, and to be presented at the next meeting, gave his views on the subject verbally as follows:

Peaches, Nectarines and Apricots can be successfully forced in almost any kind of glass structure, provided sufficient ventilation be given. Recommends growing the trees in pots, to be potted when one year old, in the fall; wintered in a cold pit or cool cellar. Next season pinch in the young growth and repot in larger pots in the fall, then winter as before. Bring them into the forcing house in December, or from that till March. A flue, or some means of heating, is indispensable to have early fruit.

By repotting every fall, pinching back, and increasing the size of pots, the trees will continue fruitful for several years. They require plenty of room and air. After the season is warm enough, and danger of the curculio is passed, they should be plunged in the open border, where they require less care than in the house. Cherries can be successfully raised in the same way. Doubts whether much can be done with Plums and Pears.

Strawberries can be easily forced. Layers the

young runners in pots in the spring; removes all secondary runners during the growing season, and keeps the pots in a cold frame covered with leaves. They are brought into the house at any time from December to March. The red spider is the principal trouble to contend with. This year is trying to force them in hotbeds; they promise well. Forces only Wilson's Albany which is highly productive.

Of Vegetables he has for many years forced large quantities—Radishes, Beets, Lettuce, Cauliflowers, Rhubarb, Asparagus, etc. Has pits sunk from 3 to 5 feet in the ground, according to the variety to be forced, the sash resting but little above the ground. For Asparagus, which is a very profitable crop; makes the pit $3\frac{1}{2}$ feet deep, of which 2 feet in depth is fresh horse manure only, carefully spread and tramped down, on which 2 or 3 inches of old hotbed soil is placed, and on this the roots, which must be *old* plants, dug up with as large a ball of roots as possible are placed, close together. Over the roots are thrown 2 to 3 inches more of old hotbed soil, in which are sowed the seeds of radish, beet, lettuce, cucumber or cauliflower, and thus two crops are raised in the same bed; for the last named the bed must be 5 feet deep. Asparagus requires a high heat and shoots rapidly; in 5 to 6 weeks it is exhausted, and the other crops succeed it. The planting is done about the first of December, and the crop can be cut, the first heads, at Christmas. Of course the roots are exhausted by this forcing and are thrown out in the spring.

Rhubarb can be raised in the same way. The bed should be 5 feet deep; old crowns, dug with as large a body of roots as possible, are planted in like manner with the asparagus, but no other crop can be raised with it, as the leaves entirely shade the ground. Linnæus and Victoria are the varieties used.

Tomatoes should be started early in the fall, in 10-inch pots, and kept during the winter. They can be had all the season. Dreer's Extra Early is a smooth-skinned, dwarf variety, truly excellent.

Plants of Cabbage, Egg-plant, Tomatoes and Sweet Potatoes, are managed in the same way. It would be desirable to force Peas and Corn, but too much room is required. Nothing is gained by sprouting Lima Beans or Corn; they will not grow until the weather is warm and settled.

Mr. Schaffer had sprouted Lima Beans with entire success.

Mr. Harrison had started Sweet Corn under glass in reversed sods, and gained several days in its maturity.

Mr. Satterthwait thought the soil for a hotbed

should be naturally dry; if water stands in it the bed will not heat. For Lettuce the soil should be 6 inches below the glass, for Rhubarb and Cauliflower 2 feet. If troubled with mice, poisons them with arsenic mixed with corn meal.

Mr. Eadie. Can enough horse manure be obtained? Is not coal better and cheaper?

Mr. Satterthwait. Has not tried it. Uses only horse manure which gives out a regular, moist heat most favorable for forcing. Has tried leaves, but found they do not yield heat enough.

Mr. Schaffer has used leaves for forcing Cauliflower with good success.

Mr. Satterthwait. Plants forced for open garden planting should have but little heat, and poor soil. Tomatoes should be transplanted into a cold frame and have plenty of air. Egg-plants also require free ventilation.

Mr. Schaffer inquired the cause of club-foot in Cabbage, from which he had lost all his first planting last year. His next lot, being dipped in a wet mixture of lime and clay, succeeded perfectly.

Mr. Harrison. The club-foot or Ambury is caused by an over rich soil, in which a succession of the same crops has been grown too long, without due correction of the acidity thus engendered.

MONTHLY DISPLAY, JANUARY 13.

Two Baskets Cut-flowers, by A. Graham, gardener to Gen. Patterson, and Thos. Meghran, gardener to Mr. Baird. The latter struck us as of very graceful arrangement and superior in combination of flowers and color to the former, although smaller and less expensive.

Mr. Southwood had two Rustic Flower Stands of growing plants; one quite small, with hanging globe, suited for a pier table; fresh and handsome.

Mr. Eadie brought a Rustic Design also, surmounted by a large table bouquet, in which the Poinsetta *puleherrima* was quite conspicuous. Also a pair of Hand Bouquets, of unequal merit, one being deficient in *verdure*.

S. W. Noble had a baker's dozen of varieties of apples, mostly old favorites.

J. M. Lauchlan, gardener to I. B. Baxter, the usual assortment of pears, including the Reading, an excellent sort for eating in February: must be put on the list "promising well."

J. McGowen presented a dish of Bellefleur apples, handsome and high colored; flavor impaired by packing in bran and storing in the cellar.

J. E. Mitchell, a miscellaneous collection of apples, among which we remarked fine specimens of the White Doctor, a Pennsylvania seedling of merit.

W. L. Schaffer exhibited 7 varieties of apples. The Baldwins were the handsomest, and highest colored we ever saw, and of truly excellent flavor. The Cann apple, a very solid, sweet apple of medium size, very good flavor, and a long keeper as well as profuse bearer; was compared with the Ladies' Sweeting, and pronounced superior to that excellent variety. As a baking apple it is nearly if not quite equal to Tolman Sweeting, and as it keeps until spring, is worthy of the attention of growers.

P. Courtney, gardener to A. W. Harrison, had the only celery on the tables; it was of good size and well blanched.

The Huttenhouse apple, a Bucks county seedling of high local repute, was sent by Mr. T. Mechan; resembles in color the Northern Spy, but more oblate in form. Very firm, white flesh, solid to the very centre, of a good, mild flavor; deserving attention.

CINCINNATI HORTICULTURAL SOCIETY.

We have not heard any thing of this body for some time, and in common with friends in this section, supposed it had "collapsed;" but in a stray local paper that recently fell into our hands, we find signs of useful vitality still lingering, and are glad to give it what aid and encouragement we can by transferring to our columns the interesting essay recently read before it, to be found on page 43.

INDIANA POMOLOGICAL SOCIETY.—The annual meeting of this association for 1863, commenced its sessions at the State House, at 10 A. M., Jan. 7th. There was a fair representation of the fruit growers of Indiana, who spent the greater portion of the day in the revision of the fruit list. Dr. Warder, of Cincinnati, took an active part in the discussions. The show of winter fruits, apples and pears, was very fine. Lewis James, of Centreville, presided, and George M. Beeler, of this city, was Secretary, pro tem.

The election of officers for the ensuing two years took place at the evening session, resulting as follows:

President—I. D. G. Nelson, of Fort Wayne.

Vice-Presidents—Joseph Orr, of Laporte, Lewis Jones, of Wayne; John C. Shoemaker, of Perry; W. H. Ragan, of Putnam.

Treasurer—J. C. Teas, of Henry.

Secretary—George M. Beeler, of Marion.

A Fruit Committee of one from each Congressional District was elected.—*Indianapolis Journal*.

THE GARDENER'S MONTHLY.

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

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VOL. V.—NO. 3.

Hints for March.



FLOWER-GARDEN AND PLEASURE-GROUND.

Pruning of Roses and other flowering shrubs will be the first operation in order. In the "summer" roses, or those which bloom only once in the season, the rule is to thin out the weak shoots and leave the stronger ones, merely shortening their tops. If pruned severely in the usual shortening style, they will not bloom freely. The hybrid perpetual roses, if wanted for early flowering, should also be served much in the same way; but as their chief value is as fall flowerers, a severe pruning now produces a vigorous autumn growth, bearing large and luxurious blooms. The Tea, China, Bourbon and Noisette roses which flower best on young wood, should be well cut in.

Pæonias, Dicentras, and other hardy herbaceous plants that have been two years in one situation, should be taken up, divided and reset in new soil, if the finest flowers are desired. There is a growing revival of the taste for beautiful herbaceous plants, which the Frenchy fashion of growing a few kinds in masses for mere gaudy display had well nigh annihilated. Herbaceous plants take a little more tying and fixing through the summer, but make up for it by variety and peculiar interest.

The edges of walks, beds and borders, should have their annual edging—not cut deeply down like a wall, but as neatly and shallow as possible; a good eye is necessary to avoid harsh lines; and a very sharp spade, or what is better, an edging iron made for the purpose, employed. Walks should be forked up with a drag or fork hoe, and an additional fine coat put on the gravel where needed, and then rolled

over. The wetter the gravel, the better for the rolling operation, provided it is not wet enough to adhere to the roller. It is bad policy to have more than half an inch of sand on the stone bed of a carriage road, as it cuts in too deeply in wet or frosty weather. In foot walks it is not so important, as the rounding of the centre throws off the water to the sides, and it soon dries hard after a rain.

Where box edging is employed, it often becomes too large and thick after having remained some years in the one place—now is the time to take it up and relay it. After digging up, the lower roots are cut off with a hatchet, and the young top shoots squared with a sharp knife. The border is then tramped hard and firm, made level or plane on the surface, a smooth cut down three or four inches into the soil, made with a sharp spade along the face of a line stretched on the surface for a guide, and then the box set in with the hand, neat and level, finishes the process. The surplus box can be sold or exchanged with the nurseryman, or employed elsewhere in the ground. Laying of turf and sodding should be forwarded at the earliest opportunity after the frost is out of the ground; the earlier it is done, the better will it be the season following.

It used to be the universal practice to dig up amongst shrubbery clumps at this season of the year, "to let in the air about the roots," but a light dressing of well-rotted manure, raked in with a coarse rake over the surface is now preferred by all the principal European gardeners, and will no doubt prove as good here.

In the more-favored latitudes, where cold wintry winds are not likely to occur again this season, planting may at once commence; but otherwise wait awhile. A bitter north-easter coming soon after a tree has been transplanted, leaves it but a poor chance for its life; evergreens especially, from the great amount of evaporating surface their leaves expose, are particularly to have attention in this respect: hence, in this latitude, few good planters remove evergreens until April, and many not till May; when, if the roots are healthy and the plants vigor-

ous and thrifty, they often do better than at any period of the year.

Nothing adds so much to the beauty of a place as plenty of shrubbery. This is the season for putting in cuttings; many kinds growing easily so. The pieces are cut to about six inches in length usually, and inserted about two-thirds of their length in the soil—much left out of the ground exposes too great a surface to the atmosphere, and if the cutting does not dry up altogether, it is a long time rooting.

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 Lilliputian, or Pomphone 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.

Whenever it is prudent to accomplish the last feat, hardy annuals may also be sown; the earlier they can be started, the finer they flower. Sometimes, after sowing, cold wet weather ensues, when the seed, if it is started at all, is liable to rot. It is best to save a few seeds in each packet, and in two or three weeks after sowing, go over and scatter in the places where the other portion was sown. Every place where seed is put in should be marked, and with the kind; when the border plants are then set out the annuals will not be disturbed. A change of soil, as we have often said, is beneficial to the flower border. With some kinds of flowers, the Verbena for instance, a new soil is a great luxury, for which they will be very grateful to you. The first two inches of the surface soil of an old pasture, mixed with about a third of the surface soil of an old wood, makes an excellent medium to grow border plants in. Not the mere rotten leaves from a wood, but the dark, black *humus* in which the roots of the trees, and other rank vegetable roots have already began to run riot among.

VEGETABLE GARDEN.

Having decided on what crops are to be in each portion of ground, and what others are to come into rotation after them, proceed with getting the soil manured and dug at every opportunity. Peas should be attended to first; the warmest aspect will of course produce them earliest—it is a first rate

system to sow Peas where Celery is intended to follow, which, being well manured, will produce an excellent crop of Onions the following season. The extra Early Peas—the same we believe as the English Daniel O'Rourke—are the best for an early crop.

Where new Asparagus beds are to be made, now is the time; the ground should be rather moist than dry, and be trenched two feet deep, mixing in with it a good quantity of stable dung, and, if the ground be inclining to sand, add some salt; the beds should be marked out four feet wide, and the alleys about two feet. If pegs are driven down at the corners of the beds permanently, they will assist operations in future years. Having marked the positions of the beds and procured a stock of two year old plants, place them on the soil nine inches apart in rows one foot asunder, making three rows in each bed; then cover the whole with soil from the alleys and rich compost a couple of inches.

To have Turnips good in spring they must be sown very early; they are hardy, and must be put in as soon as the ground can be caught right.

Salsify, too, must be in as soon as possible—it prefers a strong rich loam.

Those who have no Spinach sown in the fall should do that right away; no amount of stable manure but will be a benefit to it, though guano, in even smallish doses will kill it; guano produces excellent Cabbage, mixed with the ground while it is being dug for that crop. Cabbage, by the way, may be put in as soon as the ground is ready; and Potatoes are better in before the beginning of next month, if the ground is not too wet; many plant Cabbage between the Potato rows.

Onions are better put in early, but the ground ought to be dry, and trodden or beaten firm when the sets are planted; the ground ought not to have rank manure—wood-ashes and pure undunged loam will alone produce an excellent crop.

Parsley delights in a rich gravelly loam, and should be sown very early.

Parsnips, another crop which should receive early attention, also delights in a deep gravelly soil, but detests rank manure.

Lettuces and Radishes continue to sow at intervals.

Herbs of all kinds are best attended to at this season—a good collection is a good thing.

Having attended to the above crops, the Beet will come next, preferring a deep, sandy loam, well dunged the year previously; the Turnip Beet is best for this crop; the long Radish Beet will be best for winter use, and should be sown a month later.

The Carrot will thrive in soil similar to the Beet;

lime is an excellent manure for it—we use the long Orange. Celery may be sown about the end of the month, in a bed of very light rich soil, and Tomatoes, Egg Plants and Peppers sown in pots or boxes, and forwarded. It is as bad to be too early, with these as too late, as they become stunted.

GREENHOUSE.

This is the season when the most plants will require re-potting previous to their making their new season's growth. The difficulty always is to find the increased room the re-potting requires. Usually room is made by turning out the bedding plants into hot-bed frames, protecting them from frosts at night by mats. Much may be gained also by not increasing the size of pots, as pointed out by a correspondent; but merely changing the soil; where, however, plants are not shortened in previous to the repotting, care must be exercised in shaking out the soil, or serious results may follow. The ball of roots should be soaked in water, so that the particles of soil may fall away easily from the roots. The soil for potting, too, should be nearly quite dry, and then rammed into the pots about the roots very hard and tight. Immediately after potting the plant should be well watered, and placed in a close and partially shaded atmosphere till the roots take hold of the new soil again. Where the roots are not much disturbed these precautions are unnecessary. In addition to dry soil for potting it should be fibrous, that is it should have a good portion of old fine roots through it to give it a spongy texture. It is this which gives the top soil of a pasture such value in the eye of a good gardener for potting purposes, as the innumerable fine roots of the grass through it renders it particularly spongy or "fibrous" as the technical term is.

As the plants potted grow, those intended to be made stocky or bushy, should have their strong shoots pinched off, which will encourage the strength of the weaker ones.

The direct rays of our hot March suns are very fatal to flowers, and they soon fade unless protected. A portion of the house should have its glass shaded, and where the bloom is wished to be prolonged the plants should be removed under it. A thin paint of sugar of lead on the outside is the most permanent and best shading for glass.

New Holland plants are among the prettiest of greenhouse spring ornaments; but our gardeners generally do not have good success with them, principally through keeping the atmosphere too warm and dry. They are much improved by an

annual pruning, which should be done when they are just going out of flower. The Heath particularly is much benefitted by a severe annual cutting back. There are many good old greenhouse plants we are sorry now to seldom see. The tribe of *Aschynanthus* particularly affords some of the handsomest plants, especially for hanging baskets in the hot-house. The old *Gloriosa superba*, is also equal to the finest lily, with considerably more grace. This is the time to start *Gloriosas*. All the *Kennedias* are worthy of culture, especially *Murrayana* and *monophylla*. They do well in our climate in summer, which is an additional recommendation.

About the middle of the month *Chrysanthemums* are usually struck from cuttings to make plants for flowering early in fall. Do not forget what we urged last month, about preparing other plants for next winter flowering. *Begonias* particularly must be looked after now. The flowering Cacti, especially those of the *Epiphyllum* or hybrid *Cereus* family, are very beautiful, and should be grown by all. They should be repotted at this season in rich, sandy loam, have abundance of water while growing, and in summer placed in a warm, sunny place, not however where the air is dry.

They who grow Japan lilies in pots, generally pot them at this season, in light, sandy loam. The bulbs must be placed deeper in the soil than most other bulbs, covering them at least three inches deep. They do much better in the open air than in pots.

Pelargoniums that are required to bloom early, should not be stopped again; but if required later in bloom may yet receive another pinch. Few plants like to be so near the glass, and to have plenty of light and air as the Pelargonium.

Dahlias should be sprouted early in the month. For those who do not want a large lot of one kind the best plan is to cut off the extremities of the roots so as to make the stock go into a six or eight inch pot; and then put them anywhere where there is a heat of 55 or 60°. As soon as they sprout, split the stock into pieces, so as to keep a piece of root and a sprout together, and pot in a separate four inch pot; keep the new plants for a few days in a close, warm atmosphere, and gradually harden off.

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.

Pansies are coming now into flower. They like an airy frame, where they will not be roasted at mid-day nor exposed to drying winds, and yet have a

free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done flowering, the plants will keep healthy over till the next season.

Superior varieties can be raised from seed. Choose those with the roundest petals, best colors, and the first flowers that open to raise seed from.

FRUIT GARDEN.

Grape-vines in the open air, on arbors and trellises, should have their pruning finished before warm spring days set in, or they will bleed. It does not injure them much, but it looks bad. The pruning must be regulated by the condition of the vine. If the vines are young and the shoots weak, cut them all back, to make a new and vigorous growth. If already a fair quantity of strong shoots of last season's growth exists, cut out the weaker ones, so as to leave enough of stronger ones. The cane system, slightly modified, is best for arbors and trellises in the hands of amateurs generally. This implies a new set of canes every year or two. If, as frequently happens from bad management, all the young and strong-bearing wood exists only at the end of the vines,—and these latter have become nothing but long ropy-looking apologies for what a vine should be; the whole cane may be buried down in the soil to where the strong shoots spring from, and the young wood of last season trained up from this. The plant will then recover its good appearance quite as well as by cutting down, with the advantage of not sacrificing a year's crop of fruit.

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.

Many kinds of raspberries, especially in dry soils, have a tendency to throw up innumerable suckers. These should be thinned out. Three or four canes are enough to leave in a "hill." We like, however, to grow raspberries in rows, where each cane may have a chance to enjoy an independent existence of about a square foot of soil for itself.

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.

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.

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.

And it may be said of all fruit trees, they should be severely pruned at planting, and every other means resorted to in order to produce a vigorous healthy growth. Fruit, worthy of the name of fruit, is the result of healthy growth, the season previous, and it is impossible to obtain both the same season of planting. But this is a benefit; no fruit tree should be allowed to bear the same season.

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.

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.

Communications.

HALE'S EARLY PEACH.

BY DR. EDWARD TAYLOR, CLEVELAND, OHIO.

Will you give me a little corner in your valuable *Monthly*, to answer a number of inquiries in regard to Hale's Early Peach.

This variety originated in Summit county, Ohio,

about twenty-five miles south of this place. Coming under the observation of Mr. Hale, a nurseryman of that vicinity, he propagated from it and introduced it to the public some four years ago. The original tree belonging to a German, he first called it Early German, but his professional friends feeling that Mr. Hale was entitled to the credit of its introduction, called it Hale's Early, in which he acquiesced, and it is now universally known by that name.

I neglected at the time I had the fruit on hand to make notes of its special particularities, and can only now give them comparatively. It takes freely in the bud, and is a good, healthy grower, and ripens up its wood well in the fall. The curled leaf was very bad in my orchard this season; they partook of that disease somewhat, not so bad as many others, but worse than Crawford's and one or two others which were but very slightly affected. It is a very early bearer, frequently bearing a good crop the second year in the nursery row. It is said to be a very prolific and continuous bearer by those who have the older trees. My earliest ripening fruit of the common varieties were the Serrate E. York. The Hale was ten days earlier in ripening its fruit than that variety, and some sixteen days earlier than the Honest John or Large Early York. These trees were three and four years older than the Hale's; in size, shape, color of flesh and quality it very much corresponds with the Honest John, but is rather more highly colored. I should think it a seedling from that variety; they do not ripen up all at once, and hang well on the tree (when they have the opportunity,) and showed no indication of rot. The great demand at the nurseries here show the estimate in which they are held where known.

FUNGUS IN CUTTING BOXES.

BY PETER HENDERSON, JERSEY CITY, N.J.

Some years ago I had a request for information on this subject in your columns, but failed to draw out any thing satisfactory; since then my further experience has showed, I think, a preventive from this pest, which I will give to your correspondent "S." It is a preventive, however, that all may not be able to avail themselves of, but still a knowledge of it, if I am correct, will prevent the time lost in applying useless remedies.

My propagating-house is a lean-to, facing north; the cutting-bench is heated by a flow and return tank, which gives a *bottom* heat in the bench from 60° to 70°, and as there is no other means of heating the house but what arises from the heated sand

in the bench our average temperature in the house, during December, January and February, will not exceed 45° degrees; in these months we are entirely free from fungus. This house I have had in operation now for three seasons, with unvarying success, and have arrived at the unavoidable conclusion that the fungus cannot exist to injure in an atmosphere under 50° degrees.

Previous to erecting this house, I had my propagating houses facing south and east, and never got through a season without losing largely by it, particularly in dark, close weather; and now, even in the propagating house we use, we are troubled with it to some extent in fall and spring, whenever the outside temperature runs up to or above 60°. The only consoling advice I can give to those who have not the convenience of a regular propagating house is to pot off the cuttings at once, as soon as they show the least signs of rooting, or even before the enemy is seen, as the particular time that the cutting begins to emit roots is the time that he seems most destructive.

I am perfectly satisfied that nothing will prevent the spread or growth of the fungus if the atmosphere is congenial to its vegetation, unless something could be used that would at the same time destroy the cutting you wish to save.

We all know that different seeds will only vegetate at different temperatures. Chickweed is only annoying as a weed in spring and fall, as it only vegetates in a low temperature, while Purslane is our bane in the summer, luxuriating in the heat and drought of the dog days. My notion, then, is that the sporules of this fungus are at all times floating in the atmosphere, but that a certain condition of temperature is necessary to their development.

This is a subject of much interest, and I would be much pleased if some others of your readers would give their "experience."

HOW TO USE WASTE STEAM.

BY "MANUFACTURER," BALTIMORE, MARYLAND.

You may remember that in your first volume I made an enquiry of you whether I could not use the steam from the waste pipe of a steam engine, for the purpose of heating a small conservatory attached to my dwelling house, and that you dissuaded me from the attempt.

It has never satisfied me however to see so much waste of heat, and I have often bethought me how I might turn it to some account, but did not succeed till last year, when a hint in your *Monthly* put

me on the scent; and as I have at length turned up the same, I propose to give you the benefit of my discovery if discovery it be.

Last year you recommended that plants should be watered with warm water, and I decided to try the effects of the warm condensed steam in this way. Under the waste pipe I sunk a tub, and from this I took the water occasionally and used it in my cold frame over the Cauliflower, Lettuce, Early Radishes, &c., and the result was truly surprising. I had one frame of Cauliflowers which was not watered, that enabled me to contrast the great difference which I would not have otherwise believed could have been so great.

I have no doubt but that very much may be done by the use of hot water in forcing without the aid of much machinery or hotbed contrivances; but as some of your writers express it "I send the above for what it is worth."

SACCHAROMETERS.

BY NOVICE.

I take pleasure in replying to the inquiries contained in the letter from your correspondent, T. N., (see page 87.) The Beer Hydrometer graduated from 0° to 24°, is not Beaumé's, who made no instrument expressly for beer. Each degree of its scale corresponds with half a degree of Beaumé. The Catawba grape juice of 19° strength = 9½° Beaumé, has a specific gravity of 1.0667. That of 16° = 8° Beaumé, is 1.0556. The Isabella juice of 17° = 8½° Beaumé, is 1.0593.

The other hydrometer referred to is graduated on Beaumé's scale, but the starting point 10° represents the specific gravity of distilled water, at the standard temperature of 54° Fahrenheit. The zero of this scale represents a solution of salt, of 10 parts dry salt in 90 parts of water.

There is great confusion in the standards of graduation adopted by different inventors. The Germans have two or more hydrometers for beer; Beaumé's and Cartier's instruments are generally used in France; beside which there are Bates', Sikes', Dicas', Fahrenheits', Gay Lussac's, Guy Morton's, Nicholson's, Richter's, Tralles', Zanettis' and Twaddell's hydrometers in use, all graduated upon different scales. That of Bate is much used in England for beer, Sikes' for the excise of spirits, Nicholson's for minerals, and Twaddell's, consisting of a series of six instruments, by dyers and calico printers. Gay Lussac's is the one almost universally employed in France, for wines

and spirits, and Tralle's, (a centesimal scale), is adopted by the U. S. Government for whisky, alcohol, &c. The specific gravity of any liquid, denser than water, is ascertained from Twaddell's instrument, by multiplying the mark indicated by 5, and adding 1000. Thus 22° strength = $22 \times 5 \times 1000 = 1,110$ sp. gr. Most of the others require a numerical table to ascertain the specific gravity.

As the primary object of the hydrometer, aerometer, saccharometer, &c., is to indicate the relative density of any given fluid to that of distilled water, which is the standard, it would be very desirable that all these arbitrary, conventional scales should be discarded, and the simple *specific gravity* scale adopted. Two hydrometers, then, one for light, and the other for heavy liquids, would answer all ordinary purposes and save the annoyance of referring to printed tables. A complete saccharometer can readily be made by marking, opposite each degree of the specific gravity scale, on the same paper, the amount of sugar per 100 lbs. of the syrup. Any manufacturer of hydrometers could easily construct such a one; it might be very convenient to growers of sorghum as well as wine makers.

T. N. should be aware of the importance of temperature in saccharometry. All wine juices should be brought to the standard temperature before testing by the instrument, or a table of correction for temperature should be employed.

It is to be hoped that, at no distant day, the numerous empirical scales for the hydrometer shall give place to the specific gravity scale; it is equally important that the arbitrary and really absurd thermometrical scales of Fahrenheit, Reaumur and De Lisle, shall be superceded by that of Celsius, called by the French, who are rapidly adopting it, the *centigrade* scale. The zero of his thermometer is melting ice, and boiling water, or rather the steam rising from it, is 100°. It is thus a purely decimal scale.

In the adoption of a decimal currency, our country set an example which France was not slow to imitate, and she has extended the system to every department of weights, coins and measures. Why should we lag behind in adopting at least some of her improvements in these systems? But this is rather incidental, than germane, to a discussion of the subject of saccharometers; so if I have occupied too much of your space, or your readers' patience, remember that to be, at times, obtrusive, is the frequent failing of a

NOVICE.

CONSERVATORY ARRANGEMENTS.

BY MR. W. SMITH, TACONY, PA.

The season has now again come when the luxury of a greenhouse or conservatory, however small, is appreciated; where the charms of spring and summer in all their beauty are ever present, and howling winter without, amid the wreck of its desolation, (your once gay parterre, your beautiful landscape,) stands paralyzed to do you harm in your beautiful conservatory.

In the arrangement of a conservatory, like all other things, however beautiful, the eye courts change. Too great a sameness becomes monotonous. However successful in your cultivation, you do not get the beauty you deserve for all the care and trouble you bestow on your collections; with the same old rows of flower pots season after season, the simple and monotonous stages commonly seen, are utterly devoid either of beauty or art, which by a tasteful change in your arrangement a mixture of stages, wire and other ornamental baskets and vases, and specimens placed on the floor, would occasion the highest diversity and afford the greatest scope for an ingenious display of plants, giving an entirely different and grateful aspect, and susceptible of continuous change which the eye delights to honor, and the senses gain many a pleasureable delight, which you otherwise would not obtain.

A reformation in this branch of gardening is strongly needed. I intend to send you from time to time "groupings for the conservatory," ornamental vases and other designs, as opportunity offers, if you think them worthy the high character of the *Gardener's Monthly*; and here I appeal to your good taste and well known correct judgment.

The accompanying sketch, taken in photograph a few days since, is a very pretty object, very cheap, made in the common earthenware, the same as flower pots are made, (its true novelty) with wreaths of grape leaves and bunches, round vases, and creeping spirally round pedestal oak leaves and acorns, very easily made; the person to whom I gave my design made nothing but plain flower pots but soon fell into my plan. The vases and pedestal are so arranged to slip off and on a small fountain, by compression of air, much used in Europe for small objects, where a permanent reservoir is not at hand, and of which your readers are well acquainted.

[The design was very pretty. Mr. S. can give some valuable suggestions, and as the subject is one we have often mooted, and all feel interested in, the proposed communication will be valued.—ED.]

GRAPE VINE FORCING.

BY DAVID FOULIS, GARDENER TO E. HOYT, ESQ., ASTORIA, L. I., NEW YORK.

The cultivation of the grape vine will always be a subject of prolific interest to all connected with Horticultural pursuits, and in submitting to the readers of the *Gardener's Monthly*, the result of two experiments I have made, I entirely disclaim any attempt at teaching those older or more experienced than myself, for I consider that in the acquisition of a knowledge of the principles of grape growing, and in the practical application of those principles, the gardeners of America already hold a very high position, judging from what I have seen growing in private establishments or produced on exhibition tables.

The grapes exhibited by Mr. Egan, of Staten Island, at Brooklyn, in September last, were admirable examples of the success that may be attained by constant care and attention to the aforesaid principles, both the native and exotic varieties being produced in fine order.

One desideratum seems to be to keep the old grapes hanging on the vine until new grapes are in, as in England, where the Black Barbarossa and Lady Down's Seedling, are kept hanging until March or April; but climate may offer insuperable obstacles here to the successful adaption of this phase of grape culture.

In March of last year, I renewed the outside border of an established house of grapes here, cutting off all the roots right up to within two feet of the vines, which are planted inside, but derive very little nourishment from the inside border, by being planted very deep and close to the front, the roots naturally seeking the readiest egress to the sun and heat.

Finding six courses of brick work underneath the wall plate, I took out four courses, put in a stone coping supported by pillars instead of arches as heretofore, thus giving the roots much freer exit. I also raised the bottom of the outside border eighteen inches, as nothing can be more deleterious to the flavor of grapes than to have the roots in a deep, damp border. The leaves flagged a little during some of our scorching days in May, but by constant attention to ventilation, and taking care to keep up an abundant supply of moisture in the house, escaped without a scorched leaf, and cut a fine crop of Muscats and Black Hamburgs in the following August and September.

Being much encouraged by the success in this instance, I determined to try if I could not produce new grapes in January; so having cleared one

house in the third week in June, I pruned and started it the first week in July, and notwithstanding the high temperature prevailing at the time, the eyes broke very regularly all over the house, the vines being all worked on the short spur system. I was quite prepared to see them bleed very freely, from the sap being in full circulation at the time of pruning, but was agreeably disappointed to see the first leaves formed with scarcely any bleeding at all; certainly nothing to hurt the vitality of the vine.

During the fine genial fall weather the fruit made rapid progress, and of course took good care to place ample protection on the outside border as the cold weather set in, otherwise the berries would soon have shrivelled if the roots had been subjected to a low temperature. There were thirteen rods of Black Hamburgs and two rods of Muscats in the house; the Hamburgs bore a very fair crop of medium sized bunches, and on the first of January, were quite plump and as black as sloes, the leaves being as green and fresh as they were three months previously. The Muscats only bore a few bunches, but the berries were well ripened, and had that nice yellow tinge so desirable in the Muscat.

I intend renewing the border of this house in March, the same as I did the other, for had it been done in the fall and the house forced through the winter, I should most certainly have killed the vines, but by pursuing the system indicated instead of weakening the vine as many would suppose, I hope to renew their vitality, and let them grow naturally with the season.

The leaves were attacked by mildew in September, but by daubing the hot water pipes with wet sulphur, and occasionally strewing some fresh guano in the house, I prevented it from doing any damage.

HORTICULTURE ALONG THE WAR LINE.

BY OLIVER TAYLOR, BARRY P. O., FREDERICK COUNTY, MARYLAND.

Since I last wrote thee the army of the North has rolled past our quiet home, and within one-half of a mile more than one-half of the army of the Potomac has passed I presume, and for the first time in my life have I beheld the destructive march of mighty armies. But we have suffered no loss worth naming, as they did not camp nearer than one-half of a mile of us; but alas, many of our neighbors fared far otherwise.

So far our winter has been unusually dry, and once the thermometer was only four degrees above zero and no snow on the ground; the like I

never knew before so early in winter. Our fall and the last half of summer was very dry, so that peaches did not grow as large as usual, and some grapes ripened and withered up before frost, especially those in dry situations. The varieties of apples that form the best late winter fruit north, were better here this season than usual, but as usual they were ripe and gone before winter came.

I took to Harper's Ferry, before the army started from there, the last week in October, the last of the following varieties, viz.: Baldwin, Northern Spy, Esopus Spitzenberg, Newtown Pip., Rhode Island Greening, Dominic and Peck's Pleasant. The Swaar and Jonathan being in the same condition as to ripeness. The Ladies' Sweeting kept near four weeks later.

We were prevented by the southern army from sending specimens of fruit to the Congress, which I much deplored as the Rogers' Seedling Grapes were so fine; but many of the finer kinds were not ripe enough for the Congress, ripening up to frost, and No. 15 not getting entirely ripe then. So far I think No. 14 is the finest, though No. 34 and 33 are fine indeed. No. 4 and 3 are early and 22 later than 14 and much like it in size, &c. The above I think the most of so far. The Clinton is much sweeter to the taste when cooked than the Catawba, and makes much better marmalade, an article by the bye (of which I put up some 500 cans) that pays better to make than wine at \$1 per gallon, as it sells readily at 20 cents per quart, when but one-half of it is grape, and that including all the pulp, so of course that would not make one pint of clear wine, and in this form of food we get all the rich delights of bread and wine without the just condemnation of being wine bibbers.

The Delaware ripened here to perfection; no sign of mildew, rot or any other drawback apparent. We dried some which we pronounce pretty good raisins. The Franklin grape so far is not equal to the Clinton. The Concord is here as good as it can get, but is not equal to Rogers' No. 4, which ripens soon after. The McLean is quite a sweet fox grape, as foxy as need be for any one. The Diana has serious faults here, not equal to the Catawba, which is perfect here. To Kalon fine.

Alas for our country near here; the war has made such deep impressions I fear I will not be able to dispose of a tenth part of our fruit trees, grape vines and evergreens, badly as they are needed in our own county, before they grow too large; in fact I cut down nice, large, thrifty apple trees last spring, for pea sticks, and this spring I can furnish several thousand of the same sort. Won't

thee advertise in the *Monthly* to thy city readers, that I can furnish a few thousand such nice pea sticks to be had cheap. The grape vines, such as Cuyahoga and Delaware, I'll try and save a year or so longer, and in no case throw away Rogers' No. 34, 14 and such extras.

SYNONYMS OF GRAPES, AND LIST OF WORTHLESS KINDS.

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

Nothing can be more important and beneficial to all the amateurs and extensive growers of the grape than such a synonymy as will elucidate and arrange fully the multiplicity of existing names, and thereby allay the confusion which still pervades this favorite family of fruits :

SYNONYM.	NAME.
Amalie,	Emily,
American Muscadine,	Scuppernong,
American Chasselas,	Rebecca,
Anonymous,	Ohio Globose.
Archer,	probably Jack,
Arrott or Arnett,	Cassady,
August Isabella,	Valentine,
Baldwin,	} York Madeira,
Baldwin's Early,	
Black Bullace,	} Black Scuppernong,
Black Muscadine,	
Bullace or Muscadine,	
Bull or Bullet,	} of the south, Lenoir,
Black July	
Black Souvignon,	
Blue Grape,	probably Herbemont,
Black September,	Jack,
Bl'k Spanish (Alabama),	York Madiera,
Black German (Ohio),	Zinfandel,
Black Sonora,	Oporto,
Blue Oporto,	Taylor's Bullitt,
Bullitt,	} Bland,
Bland's Madeira,	
Bland's Virginia,	
Bland's Pale Red,	} see Louisiana,
Blue Burgundy	
Blue Grape (of south),	Lenoir,
Bloom,	Catawissa,
Burgundy (southern),	Pauline,
Bush Grape of Texas,	Vitis rupestris,
Canby's August,	York Madeira,
Cape, or Cape Wine,	} Alexander,
Cape of Good Hope,	
Carter, of Boston,	To Kalon,
Cherokee,	probably Isabella,
Catawba Tokay,	Catawba,
Christie's Isabella,	Old Isabella,
Clarence,	Lenoir,

SYNONYM.	NAME.
Clifton Constantia,	} Alexander,
Constantia,	
Clark's Seedling,	St. Catharine,
Columbia Bloom,	} Catawissa,
Creveling,	
Conckling's Wilding,	Isabella,
David Hall Grape,	Logan,
Dr. Keller,	Keller,
Devereux,	Lenoir,
Elsinborough,	Elsenburg,
Fenner's Early,	York Madiera,
Fox varieties,	all Vitis labrusca,
French Wine Grape,	Delaware,
Garber's Albiness,	Albino,
Garber's Seedling,	Mary Ann,
Genlin,	Catawissa,
Georgia Burgundy,	Pauline,
Gibb's Grape,	Isabella,
Gross,	Miller's Burgundy,
Hagar,	Alvey,
Heath,	Delaware,
Hickman,	Scuppernong,
Hart's White,	White Elizabeth,
Hanover (southern),	} Isabella,
Hensell's Long Island,	
Hermann Red Diamond,	Norton's Virginia,
Harding's Sweetwater,	White Chasselas,
Hill Grape of Ohio,	Collina,
Hull,	Oporto,
Hyde's Eliza (spurious),	York Madeira,
Isabella Seedling, of	} Purple Marion,
Mottier,	
Italian Wine Grape,	Delaware,
Jones' Perfumed,	Carol'a Blue Muscadine,
Large Blue English,	Cape May Prolific,
Lespeyre,	Isabella,
Lebanon Seedling,	Catawba,
Louisiana (true),	see Washita,
Lucy Winton,	Winton,
Madison County,	Long, of Georgia,
Mary,	} Maryland Isabella,
Mary Isabel,	
Marion Port,	probably York Madeira,
Matlock,	Miles,
Madeira of Cincinnati,	Alexander,
Merceron Seedling,	Catawissa,
Monstrous Catawba,	Mammoth Catawba,
Muscadine (southern),	Black Scuppernong,
New Hanover,	Isabella,
Norton's Seedling,	Norton's Virginia,
N. Carolina Muscadine,	Mary Ann,
Ohio or Segar Box,	Jack,
Oldhouse or Harris,	probably Lenoir,
Ontario,	Union Village,

SYNONYM.	NAME.
Ozark Muscat,	Little Ozark,
Paine's Early,	Isabella,
Pitt's Favorite,	} Bland,
Powell,	
Pungo of N. Carolina,	supposed to be Lenoir,
Raabe's Clara,	Clara,
Raabe's Emily,	Emily,
Raabe's Honey,	Raabe,
Red Muncy,	Catawba,
Red Scuppernong,	Bland,
Roanoke,	Scuppernong,
Rose of Tennessee,	Catawba,
Rothrack,	Alexander,
Ruff or Ruffe,	Delaware,
Saluda,	Isabella,
September Black,	probably Herbemont,
Schuylkill Muscadel,	} Alexander,
Muscadine,	
Spring Mill Constantia,	
Shaker,	Union Village,
Sherry of the South,	Lenoir,
Singleton,	Catawba,
Smart's Elsinburg,	Elsenburg,
Springstein,	} Lenoir,
Sumpter,	
Tasker's	Alexander,
Thurmond,	Lenoir,
Taylor,	Taylor's Bullitt,
Tryon,	York Madeira,
Urbana & Purple Urbana,	Logan,
Vernet,	Isabella,
Vevay,	Alexander,
Virginia Amber,	proved Catawba,
Virginia Seedling,	Hyatt's Catawba,
Warren (southern),	Jack,
Wemple's Seedling,	Cuyahoga,
White Chasselas,	Foreign,
White Isabella,	White Elizabeth,
Wine of Kentucky,	Kentucky Wine,
Winne,	Alexander,
Wyman,	To Kalon,

WORTHLESS VARIETIES OF GRAPES,

comprising the most worthless varieties of the Fox class (*Vitis labrusca*), and also of *Vitis cordifolia* and other species, including Foreign varieties, so far as at present tested and ascertained:

Abby Clingotten—Fox, Ada—foreign seed, American Hamburg—Fox.

Baxter, Big Ozark, Bartlett, Black Claret, Blackstone—Fox, Blood's Black and White—Fox, Brandywine—foreign seed, Brown and White Sugar—Fox, Burlington, Burton's Early.

Canada Wine—Fox, Chambersburg White—for-

eign, Chapin, Charter Oak—Fox, Chippewa—barren, Chocolate, Clappier's White—foreign, Connecticut—Fox, Coon—Fox, Crystal—Fox.

Dartmouth—Fox, Delaware Burgundy—foreign, Dracut Amber—Fox.

Early Black—Fox, Early Hudson—setts badly, Elkton—Fox, Erickson, Eudora—Fox.

Fitchburg—Fox, Fox—black, white and red, Free Black.

German Muscat—foreign, German Wine—foreign, Goodman—Fox, Gossenshippen, Gross—foreign, Gutadel—foreign.

Hensell's Early and Seedling—foreign seed, Hungarian varieties, lately imported, all mildew.

Iden or Lake, Illinois Prolific, Indian Field—barren. Joen.

Little Ozark, Lowell Globe—Fox, Luff borough, Manockanock, Massachusetts White, Massequoit, McGowan or McOwen, Miller's Burgundy—foreign, Minor or Venango, Michigan Seedling—Fox, Morin, Morse, Mountain (Penn). Muscat Catawba. Naumkeg, Neponset.

Ozark Seedling, Orwigsburg—foreign.

Pearl Grape—Fox, Pocohontas Red—Fox, Plymouth White—Fox, Purple Cluster—foreign.

Quinebang, Raccoon Black—Fox, Ranney—Fox.

Sage—Fox, Sharpe or Lyon, Strawberry—Fox, Sugar Grape—Fox, Taft—Fox.

Vermont. Waterloo.

We have on hand a chapter on Grapes by Mr. W. R. Prince, and here give the last part of the article first, as this being now about the season of planting, it will be very useful in guarding persons not well posted against setting out worthless varieties, or duplicating them under other names.

Mr. P. has bestowed much labor in classifying these matters, and he has done the public a service thereby which all will appreciate. It is impossible for any one man to make a task of this kind so perfect that all will agree with him; but in this case it comes very near to it. In the synonyms, however, we think he is wrong in classing Arrott with Cassaday, though they have some resemblance. Also, it would have been better to adopt Creveling as the received name, instead of Catawissa, though by pomological rules the latter has probably the most right. In these matters, as in general language, custom gives the law in spite of our rules; and it will be as hard to get this grape received as "Catawissa," as it is to get "New Rochelle" to the Blackberry instead of *Lauton*, or "Williams' Bon Chretien" to the *Bartlett Pear*.—ED.]

TOMATO CULTURE.

BY "ACUSHNET," NEW BEDFORD, MASS.

I notice a considerable diversity of opinion in regard to the Tomato culture. With your permission I will give my mite in the way of experience.

Last spring, by way of experiment, I made a trellis facing the south, and set in front twelve plants, (6 large red and 6 yellow); at the same time I set another dozen plants like the former, in the usual style, to run on the ground, "ad libitum." The plants were all sown in February, and shifted three or four times like pot plants, and then set out without disturbing the earth in the pots. I treated all alike, and from the tomatoes on the ground I picked a good "mess" five days before those on the trellis, and they produced during the season at least one-third more than from the trellis.

The only advantage in favor of the trellis was that the fruit escaped the "slugs," *Arion hortensis* and *limax agrestis*, and also *Helix celloria*, which latter I have frequently surprised making free with a fine ripe tomato.

DEVELOPMENT OF OUR COUNTRY--A PLAN PROPOSED.

BY L. L.

In your last number, Mr. Editor, there appeared an article headed "Taming of the Shrew," which encourages me to address you on a similar theme. The writer enumerated the difficulties of colonizing in one country the vegetable inhabitants of another country, and of improving the quality of the native ones. He has shown us also how all the world is busy overcoming these difficulties. I say all the world, but I should have said so and so many individuals. And this is the point I start from.

All those persons who travel abroad in quest of new plants, and all those who stay behind to improve such as they have at home, earn their own satisfaction, and, as benefactors of our race, the world's gratitude; but as far as "improving" goes how little can they as individuals do? Your student may experiment, that is he may try to fix permanently successful chances, and thus from two different colors of *Verbenas*, neighboring each other, he may get a new one, or from two different kinds of Strawberries, a new variety, etc. He may also look round his neighborhood and see under what auspices and conditions the best specimens, say of walnut trees, do grow, and if he have an equally good combination of circumstances within his own property, he may try and succeed to raise as good or better ones. Further, if his property offers a

variety of aspects in regard to the sun, or a diversity of level, or a variety of soils and different degrees of moisture—he may, happy mortal, go about and try any given thing under so and so many different circumstances, and by closely observing nature in her workshop, enrich himself and the world with the production of improved novelties, and the knowledge perhaps of new facts also.

But take it all in all, Mr. Editor, how narrow a field is that man's property that it could not offer any really great diversity of circumstances?

True, you will answer me, the remedy is found in the Horticultural Societies. The individuals of one and the same neighborhood, feeling the disadvantage of acting on their own hook and in a loose way, invite those of another locality to meet them, to exchange notes and ideas and thus benefit each other.

I do not deny, Mr. Editor, the benefits obtained by them. But I look to much greater benefits than these societies can ever obtain *for our whole country*. The widest range of societies is about their own State. An instance will illustrate best what I mean to arrive at.

We have as yet no wine grape. No grape that will bear as abundantly, stand well our climate, and give as true wine as the Claret grape, of France, the Hock grape, of Germany, or the Sherry grape, of Spain. Let us for a moment forget the subdivisions and peculiar flavors of the different varieties of each kind, and be satisfied with that grape which produces the average Hock, Claret, etc. Now I hold that the perfection of these grapes, and of the wine they yield, is owing to two causes. The love of gain of the growers and accident. The latter is the shape of favored localities and soils, and above all the transplanting by the elements or man, into new combinations of soil and climate. May we not assume that in our vast country, offering so many sections, there may be one or more where we might meet with a similar combination of circumstances as in the claret country, and that consequently we may produce claret wine here.

Granted, even that these circumstances are as manifold as the letters of the alphabet, and almost as hard to combine as it would be for a boy, who learns spelling, to combine a given word out of a loose alphabet. That boy will go by sound and possibly collect together the wrong word, but still a word, a useful word. So may we try and try for the right grape and the right section, may at last obtain a wine grape entirely different from its parentage, and yet have a good grape and a good

wine. But whose business is it to try? Here is the rub.

Fortunes have not yet been made by owners of vineyards in this country, so that a sufficient number of individuals in a sufficient diversity of spots, should be eager to try their hand at grapes. That sort of inducement has not yet come over us. We are therefore dependent of amateur efforts and accident. In the course of half a century though we shall probably have found our wine grape through these agencies; is that thought becoming to our country? Certainly not. Well then how can we accelerate the process? That is the question.

I am far from solving it. Agitating such questions in your journal, which I believe is read by all persons who are any way connected with horticulture, may eventually, I hope, lead to such practical steps as will eventually solve it.

I know very well that on the continent of Europe there exist societies, whose aim is to acclimatize in their respective countries the animals and plants of other countries, and that they progress pretty successfully considering their recent origin. These societies are one and all under the tutelage of government, commanding its resources and facilities both in importing and experimenting.

I am also aware that our Patent Office assumes a similar task; but I entirely look away from all government interference in the furtherance of horticultural objects. Very little good will ever be done that way, and in return a host of office-seekers, office-holders, agents and what not, will arise and swell the already overbig and corrupted body of Placemen. [Decidedly.—ED.]

And now let me jot down a few of my own ideas. In the first place I wish that there existed in our country, a central Board, consisting of say two learned and three practical members. Their business should be first to map this country, laying down the lines of rain, of heat, of cold, and the distribution of the plants, not in a sweeping way—such maps we have—but minutely, showing the differences between one part of a single State and another. *Second*, to gather the statistics of the weather all over our vast country, following the plan of the late Lt. Maury. *Third*, to put themselves in communication with all the horticultural and agricultural societies of our country, they to carry out the behests of the Central Board, under its direction in regard to experiments. *Fourth*, none but approved men to be entrusted by the societies with these experiments. Local experimental gardens, open to everybody, to be preferred as experimenting grounds. *Fifth*, where societies do

not exist, the board to find men who will volunteer to act. There need be no pay. I feel convinced that in every State or Territory of the United States, such men can be found if they are sought.

The climate and the nature of the soil once thoroughly known, the board will be enabled to distribute wisely their seeds or plants, choosing their own ground and men. Traveling members of the board will take note of the modifications each plant undergoes in each new locality, and the sum and substance of all statistics and experiments, will be given at a stated period to the anxious public.

Making no doubt, Mr. Editor, but that you endorse cordially my object, I will request you to give us your views editorially, *in extenso*, and to invite your numerous readers to let their lights shine for the benefit of each and all. No greater strides perhaps can be made towards public and private prosperity than in the direction pointed out.

FINE SECKEL PEARS.

BY S. B., MONROE CO., N. Y.

You like, I believe, to receive the results of experience, and do not object to figures if they are not "figures of speech." I picked last fall from three trees of the Seckel pear on quince, 75 pears, (the entire crop), weighing 15 pounds. Last year the same trees bore 60, (the first crop), *all large*, when nearly all of 30 varieties failed.

Can you beat my crop of Seckels?

I observe that large specimens of the Seckel are much superior to small ones in quality; it is no exception to the general rule in this respect, the difference being greater however in some other varieties.

I succeed well with Lima beans, by planting in a box in the house, or in a warm place in the garden, and transplant when danger of frost is over, *one plant to a pole*, which is better than more, and had, on October 8th, saved a supply of ripe seed for next year.

AMERICAN WINES.

BY MR. HENRY FRANK, ST. LOUIS, MO.

In the January number of the *Gardener's Monthly* Mr. Husmann makes some observations on Dr. J. S. Houghton's Report on American Wine, in which he attempts to prove that American Wines are at least equal to the best of Europe. I side with the Doctor; and do not share Mr. H.'s enthusiasm for American wine; but before I go on further I must ask both the gentlemen a question, which is: If

chemists can furnish us mineral waters that answer every purpose just as well as those which nature produces, what is it that makes wine so vile if nothing worse than sugar is added?

If the Catawba is not the leading wine grape of both the Atlantic and Pacific portions of the United States, we have no leading grape at all. I know of no vineyard in Hermann, Mr. Husmann's not excepted, where not four-fifths of the bearing vines are Catawba. Nearly all the money that has so far been made from grapes and pure wine was made from the Catawba.

We are told that the Catawba has seen its day; but many things, we were told nearly centuries ago had seen their day, are to-day as powerful as ever. I do not mean to say that the Catawba is just the grape we want; but I do say, that taking all into consideration, we have no native grape yet superior to the Catawba, excepting, perhaps, the Delaware. If the Catawba is to be discarded, three-fourths of all the cracked-up new seedling grapes ought to be cast overboard before. If the grapes of the Catawba are pressed as soon as they are crushed, and consequently made into white wine, I think it is superior to any other native wine. There may be other varieties that are not so apt to suffer from rot as the Catawba, consequently insure a more certain crop; but the wine from them will be more sour and far inferior to the Catawba. The Norton's Virginia does make a good wine; but it tastes so much like medicine, and is so strong, that it can no more be recommended for a common beverage for the people than whiskey.

If the Doctor is not used to drinking whiskey, and he will drink a common wineglassfull of Norton's Virginia, it will not only send a "genial glow" through his heart, but also a burning glow through his head. It will never do for a lady's wine. The Concord may make a good wine, but I know of no single case where it has proved itself as such. I do not believe it will ever be equal to the Catawba. The Herbemont does not taste much different to me from the Catawba; almost any body will mistake it for the Catawba, who is not told beforehand what it is. I can taste nothing of Madeira in it.

We are far, far from having as good wine-grapes yet for general cultivation as the best of Europe.

If our native wines are as good as the best of Europe, why is it that people are willing to buy foreign wines, when they can have native wines that are just as good so much cheaper? If I were to plant six grape-vines for myself, and I had my

choice between the Catawba and Herbemont, I would plant of Catawba 5, of Herbemont 1; between Catawba and Concord, of Catawba 3, of Concord 3; between Catawba and Norton's Virginia, of Catawba 6, Norton's Virginia 0; between Catawba and Delaware, of Catawba 2, of Delaware 4. These I would, of course, only want for the table.

I believe we will yet have grape-vines that will bear as good wine-grapes as the best of Europe, but we have nothing like them yet. All our native wines taste too much like the sour wines of Hungary and Germany to me. In this I fully concur with the Doctor. I believe grape-growing is here yet in its infancy. We may raise good seedlings yet from our native, or perhaps European, varieties, which will make wines as good as the Burgundy and the Madeira.

I am sorry to see that you, Mr. Editor, are against the trying of cultivating foreign grapes in this country, because you say they will never do. I differ from you there. We are raising foreign grapes here already, that are as hardy in our latitude as the Catawba. I believe that foreign grapes will supersede our natives, just as foreign strawberries are now superseding our own.

Mr. Koch, of Golconda, Illinois, has ripened the Syrian and the Grape of Smyrna (two splendid grapes) in the open air, and I doubt not that they will make a very good wine. The late Mr. Poesche, from this county, ripened the Palestine in the open air. He felt confident of its hardiness here, and its great success as a fine wine and table-grape. He thought more of it than of any other grape raised here.

Last, but not least, I must mention a grape called the Little Rhine Grape, which people have raised for years in Marshall, Clark County, Illinois. People there consider it hardier than the Catawba. It was brought there by a German. It has been made into wine, which was delicious, and it makes a fine table-grape. One of its chief excellencies consists in its great hardiness. I do no doubt but that it is hardy in most States of the Union.

Possibly this warm praise may smack of interest, but I have not a single plant of it for sale. If you make her closer acquaintance, she will not turn out a shrew, as so many of our new kinds of grapes have done. It pains me to see such strong efforts made to turn my friend Catawba out of doors. She may have weaknesses, but in general she has proved herself faithful and true. We know all her faults, and even try to deny some of her virtues; while of the new comers, we only magnify and praise their virtues, and never stop for a moment

that they, too, may have faults. Aye, faults far greater than those of dear old Catawba.

We have not a single known native grape yet that has not some great faults. But I sincerely hope and believe that we will soon have grapes, either native or naturalized, that fully come up to our expectations.

[If we have ever written that "foreign grapes will never do in this climate," it was unwittingly, and far from our intention; for if there is one character more dangerous and one more to be despised than another, we hold it to be that of a prophet. But what we do wish to inculcate is, that they "never have done well" with us; and it is because thousands—nay, tens of thousands—of dollars *have been* thrown away on experiments with them during the last hundred years, that we are anxious to save our friends from repeating these vexatious losses and fruitless experiments. That they do well for a few years in almost every instance tried, is very well known. Instances of this success may be met with anywhere any day, in every town and State; and it is this temporary success which proves the *ignis fatuus* which lures so many to ruin. The Vevey vineyardists and the Schuylkill Society were ruined by leaning on this broken reed; and latterly, Nicholas Longworth, after losing thousands on the foreign grape, if he had not had shrewdness enough to abandon it as he did for the native Catawba, he would have been ruined, too.

The mere "hardiness" of the foreign vine is not questioned. They are usually as "hardy as an oak." It is meteorological causes that operate against their *permanent* success.

Instead of prophesying that "they will never do," we would rather encourage continued experiments; but we should be derelict to the interests of the community, if we did not warn them that the whole history of foreign grape-growing in the open air of America is a long string of recorded failures.

It does not need history, however, to teach us that foreign grapes are unsuited to our climate; for we doubt if one instance can be advanced where the most successful out-door foreign grape produced fruit that would creditably compare with the worst specimen ever raised under glass. They are usually magnificent under glass, and beggarly out of doors; the plain common sense of which is, that a vinery climate is suited to the foreign grape, while the open air is not.—ED.]

FINE MAGNOLIA CONSPICUA.

BY MR. W. ELDER, PHILADELPHIA.

One of the finest specimens of *Magnolia conspicua* trees in Philadelphia and neighborhood, stands in the Garden of Dr. Henry H. Smith, South-east corner of Walnut and Quince streets, the garden running back on Quince. It is grafted upon a *Liriodendron tulipifera*, two feet from the ground, and stands erect, forty feet tall, of a beautiful conical form and finely balanced, with branches all around from to within three feet of the base. It blooms profusely every year and is full of flower-buds now, which will expand on the latter half of March or early in April, according to the weather. The blooms are much larger than those upon the same kind of trees growing upon their own roots, and for that reason it gets the appellation of *grandiflora*; but the *grandiflora* is an evergreen with thick leathery leaves of a transparent grass-green color.

[We have often seen this beautiful tree when the place was the city residence of Caleb Cope, Esq.; but did not know that it was grafted on the *Liriodendron*.

We have often thought this tree would make a good stock for weaker growing *Magnolias*, and have tried to bud them, without success. We are the more pleased, therefore, to have this confirmation of our idea that it can be successfully done.—ED.]

PREPARATION OF BONES.

BY DR. EVAN PUGH, AGRICULTURAL COLLEGE, PA.

DEAR SIR:—Your letter in relation to the preparation of bones for plants, and their value for the grape, is at hand.

My other duties at present forbid my doing justice to this subject; but, hoping to be able to touch it again, I will, in all brevity, notice the points referred to.

First, then, as to preparing bones for plants. The process is partly *mechanical* and partly *chemical*. The bones must first be reduced to a greater or less degree of fineness, by mechanical means, and then be operated upon by chemical agents, to render them soluble.

The work of reducing some bones to anything like a powder, is fraught with almost insuperable difficulties. No practicable method of doing it has as yet been devised, and yet the success of the subsequent chemical process, is often dependent upon a degree of fineness being attained, that has not been reached in any rawbone superphosphate that I have seen. To reduce raw bones by hand without the

aid of machinery, is a most laborious and unremunerative operation.

Burned bones are very easily reduced to an impalpable powder, but after reduction, could be further reduced by fermentation, as raw bones may, and by burning they lose about 4 per cent. of nitrogen, which it is very desirable to preserve.

Raw bones are very easily burned by piling them up with wood, and setting fire to the latter; a good wheelbarrow load of wood will burn a ton of raw bones, and leave a mixed white and coaly mass, which is very easily broken up with a mallet, flail or other implement, to beat them with.

The chemical part of the process is as various as are the means that may be employed to perform the mechanical part.

The bones may be fermented in a great variety of ways. They may be kept moist and warm till they are broken up, under the decomposing action of the organic matter in them. Or they may be mixed with decomposing putrescent matter, by constant contact with which they are gradually decomposed. In this way whole bones may, in the course of a few months, be reduced, and thus the labor of breaking them up, by mechanical means, be avoided; if, however, they are first somewhat broken up, it would be better, as the fermenting action is thereby rendered more intense. The bones, either whole, or after being broken into large pieces, may be thrown into a box, barrel or hogshead, and let down into the ground in a moist place, where the drainings of the cow yard, the urine from a privy, the soap suds from the wash tub, the slops of dish water, or any water containing organic matter, liable to become putrescent, may keep them constantly moist. They should not be allowed to become dry, nor should be constantly covered with water, nor should the water pass through them and run away by soaking into the earth. In filling the vessel with bones, dead animals, spoiled meat, hair, wool, hoofs, horns, or any other similar matter may be thrown in with them. The whole should be pounded down to a compact mass. It is by no means necessary that the vessel containing the bones be sunk into the earth, if kept on its surface, and the proper conditions of moisture observed, the decomposition will go on, but when sunk these conditions are more easily kept up.

Another indispensable condition is a proper temperature; that of a comfortably heated room in winter, or of the ordinary temperature in summer, is what is required. The only advantage of using warm liquids to wet the bones is the temperature

thereby attained. It is best to carry out such experiments in summer time, when the solar heat is sufficient to ensure the decomposition. It is, further, not even necessary that the bones be put into a vessel at all; a hole or sink may be made in the ground and the bones thrown in and treated as above; such a hole should not be of the nature of a *grove*, narrow and deep, but a hemispherical sink twice or thrice as wide as deep, and if convenient it should have a clay bottom.

In all the above cases a coating of fresh stable manure thrown over the top of the fermenting mass, to the depth of 8 or 10 inches, will accelerate the process, and help to maintain the conditions required. Immediately beneath this manure a thin layer of coal dust from the bottom of an old coal pit may be thrown; this will prevent the putrescent mass from evolving offensive gases, and at the same time absorb what little ammonia may be evolved. After from four to six weeks it will be found that the hard bones will have been so far reduced that a spade can be forced down through them without difficulty. Bones, which when fresh, would have required a twenty horse power engine to crush them, now crumble beneath the foot of a man. After about from two to three months they may be shoveled out, cut, pounded and mixed up with a shovel, and applied to the land.

Another process is to make alternate layers of bones and fresh stable manure in a sink, and to throw over them any of the liquids mentioned above, and to cover the whole with stable manure, and let them ferment for from 8 to 10 weeks, when the bones can be pounded and mixed up for use. Still another process is to pack away the bones, as in the first method above, in a hogshead or box, and mix good unleached wood ashes with them, (at least a bushel of ashes to a barrel of bones,) and pour water or soap suds over them; in this case they may be kept covered with water at first, and after five or six weeks this water may be allowed to evaporate, and a decomposed, soapy mass will remain, which, on drying, may be pounded up. This mass is the best possible manure for grapes, as it contains phosphate of potash, both the acid and base of which are required in large quantity by this plant.

If the bones are burned, or if a phosphatic guano, or a mineral phosphate be used, since they contain no fermentable organic matter, they cannot be decomposed by the above methods, at least not by all of them, but the application of sulphuric acid to them will convert them into superphosphates, in which state their phosphoric acid is readily assimilated.

lable by plants. Some manure makers have talked nonsense about phosphoric acid rendered soluble from mineral phosphates, not being assimilable by plants; such vagaries are altogether beneath criticism, and serve only to exhibit the ignorance of their authors.

The importance of phosphoric acid and potash for the grape, is most forcibly exhibited by the following table of analysis, recently made by a German chemist, and published in *Liebig & Woehler's Annalen der Chemie und Pharmacie* :

In 100 parts of the Ash.	Must of unripe blue grapes grown on Porphyritic soil.	Must of ripe blue grapes grown on Porphyritic soil.	Must of ripe blue grapes from Marly soil.	Must of ripe green grapes Porphyritic soil.	Skins of blue grapes Porphyritic soil.	Skins of green grapes, Porphyritic soil.	Kernel of blue grapes from Porphyritic soil.	Kernel of green grapes from Porphyritic soil.	Grape vine of the little Burgundy from Marly soil.	Grape Vine of the little Burgundy from Porphyritic soil.
Potash,	66.334	65.043	71.852	62.745	41.656	46.887	27.868	29.454	44.154	37.309
Soda,	0.329	0.423	1.205	2.659	2.120	1.618	"	"	3.449	2.436
Lime,	5.204	3.374	3.392	5.111	20.315	21.731	32.179	35.567	36.041	43.674
Magnesia,	3.276	4.736	3.971	3.956	6.019	4.451	8.527	8.590	4.768	1.049
Oxide of Iron,	0.729	0.427	0.091	0.403	2.107	1.971	0.455	0.647	0.540	0.654
" Manganese,	0.820	0.747	0.098	0.305	0.758	0.511	0.348	0.452	0.107	"
Phosphoric Acid,	15.378	16.578	14.073	17.044	19.575	15.665	27.005	21.052	7.055	9.587
Sulphuric "	5.194	5.544	2.654	4.895	3.480	3.832	2.398	2.608	1.822	3.599
Chlorine,	0.745	1.029	0.474	0.700	0.496	0.713	0.268	0.355	0.847	0.969
Silicic Acid,	1.991	2.099	1.190	2.182	3.464	2.571	0.952	1.273	1.217	0.723
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Ash in 100 Parts,	0.259	0.340	0.409	0.290	3.745	4.321	2.776	2.837	3.692	2.849

With the above table compare the analysis of an ordinary specimen of mixed raw bones, to wit :

Moisture,	6.0
Organic Matter,	38.0—with 4 per ct. of nitrogen.
Phosphoric Acid,	22.0
Lime,	33.0
Magnesia,	0.5
Soda,	0.3
Potash,	0.2
	<u>100.0</u>

These analysis explain the beneficial action of bones upon the grape.

A great many different plans of applying bones to the vine have been recommended. The most common plan is to dig holes for the plant, when placing it in the vineyard, from 18 inches to 2 feet deep, and to throw from 8 to 10 pounds of ground bones over the bottom of this hole, and cover it with earth to a proper depth to receive the plant. By placing the product of fermented bones around the plant during the winter and covering it with stable manure, and thus allowing the rains to wash the soluble phosphate down into the soil, and then removing all manure by sweeping the ground around the plant in the spring, a very good result will be attained. A still better, but more expensive plan, is to have a drain with the least possible quantity

of running water moving along in it at a distance of about two and a half feet below the surface where the plant grows; in the wet earth around, and over this drain, and immediately beneath the plant, 10 or 15 pounds of whole bones should be thrown. The moisture softens the bone and decomposes it, and the roots penetrate to the water and sieze upon the bone with the greatest avidity.

This plan of manuring promotes the growth of almost all plants to a most remarkable degree, and is extensively adopted, I am told, by some of the London gardeners, and has been tried with success in this country. If I were to venture a suggestion as to the best practical method of manuring the grape, it would be as follows:—Mix unleached wood ashes with the soil to the depth of 6 inches, around the plant in a circle of about 4 feet in diameter, taking care not to let it come too much in contact with the plant. Then spread a good coat of genuine superphosphate, (Rhodes' and Allen & Needles' are the only genuine articles I have yet found in the market) on the soil. This done late autumn, or very early in the spring, would afford the plant sufficient potash and phosphoric acid for use during the summer.

We are experimenting upon the above questions, and hope before very long to report upon them.

New or Rare Plants.

DAPHNE CNEORUM.—In our last number we notice an advertisement of this beautiful plant by Mr. Burgess, of Long Island, and Mr. Miller, of Broadway, New York. We have before called attention to it in our columns, and are glad these gentlemen have taken steps to make it more generally known to the public. Though one of the oldest plants in European cultivation, it is new to most American cultivators; but it ought to be in every garden. It is a native of the mountains of



France and most of that section of Eastern Europe. The flowers are purple and very sweet, and in Europe appear only in early spring. In this climate we have heard of it flowering several times through the season. Like all evergreens of this class, it does best in places shaded in winter; but if grown in an open spot, should have a few branches thrown over it to screen it somewhat in winter. It grows only about two feet high; but makes a dense bush, and is readily increased by layers.

LONICERA AUREO-RETICULATA (Gold-netted Honeysuckle).—Sent from Japan by Mr. Fortune, to Mr. Standish, Royal Nurseries, Bagshot. "An elegant, slender, climbing shrub. Leaves bright

green, with all the veins marked out (like network), with golden yellow." It is a beautiful plant, and the editors may well say, "It is seldom our good fortune to present two such sterling subjects in one issue," as this Honeysuckle and Mr. Veitch's Lily.—*Cottage Gardener*. [Parsons & Co. have it.]

DENDROBIUM TAURINUM (*Lindley*).—A beautiful species sent from the Philippine Islands by Mr. J. G. Veitch. The flowers, which continue in perfection for a lengthened period, are produced in long spikes. In color they are of a delicate white, shaded with pink, with beautifully reflexed sepals of a rosy purple, and, as the name indicates, having the appearance of a bull's head.

PHALÆNOPSIS SCHILLERIANA.—This distinct and magnificent species, having both fine variegated foliage and long spikes of flesh-colored flowers, may be justly termed one of the finest of all Orchidaceæ. The flowers, which are nearly as large as those of *P. amabilis*, are produced in great abundance, there being often from eighty to one hundred blooms on a single spike. From the Philippine Islands.

IMPERATA SACCHARIFLORA.—A new ornamental grass, bidding fair to compete with *Gynerium argenteum*. Found in the Amoor region (Siberia) by Maximowicz, and undoubtedly hardy. Stalks from four to eight feet high; leaves about a foot and a half long, light green, with silvery middle nerve.

CRATÆGUS PINNATIFIDA.—A large thorny shrub, found all over Northern China, the Amoor region, and the Manchourian coast, and, therefore, to be considered hardy for this country. Leaves quite oblong, and pinnate-lobed. Flowers in terminal corymbs. Seed requires one year in the ground to germinate. Can be grafted on *Cr. sanguinea*, *coccinea*, *oxyacantha*, or *crusgalli*.

PAVIA CALIFORNICA, against all expectation, will not succeed when grafted on any other *Pavia*, but will succeed admirably when grafted on the European Chestnut. Said to make a very fine ornamental tree when raised that way.

HETEROCENTRUM SUBTAIPLINERVIUM.—A small shrub from Jalapa, Mexico, 3800 feet above the sea. Of the family of Melastomaceæ. Leaves about three inches long, fine green; small white flowers in panicles.

The Gardener's Monthly.

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✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

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INJURIOUS EFFECTS OF PRUNING ON THE QUALITY OF FRUIT.

We have repeatedly cautioned our readers against severe summer pruning of the grape. On the vitality of the grape it has a most baneful influence; and as we have often said, it is undoubtedly the parent of many of the diseases the grape vine is subject to.

The last time we took occasion to refer to the matter, it was in connection with the *coloring* of fruits. We showed how thinning out the growing leaves to "let in the light and air" to color fruit, defeated its object. The blackest grapes are found in the shadiest places. A healthy vitality is the best coloring material, and this is best gained by securing healthy leaves and plenty of them.

But it seems there is another point in which the grape suffers by summer pruning, that we believe has not heretofore been noticed; and this one of immense importance to wine growers. In our department of "inquiries," a correspondent seeking information respecting hydrometers, incidentally states that he found by instrumental measure, grapes summer pruned have less sugar than grapes from vines not summer pruned. This observation is confirmed by the well known fact, that what gardeners call "shanking" of grapes, or that disease which about the time of ripening causes the bunch stems to shrivel and the berries to shrink, can be brought about in one way, by a severe stripping off of the leaves of the grape vine, and that these "shanked" grapes are invariably as sour as any vinegar can be. Of course when the stem shrivels the sap cannot flow through it, and this shanking illustration is little more than saying, if a grape bunch is cut off before maturity the fruit cannot ripen, which every one knows; but every one does not know that we cut off the fruit when cutting off leaves—cutting off, if not entirely in all cases, partially at least, by the obstructing of a full supply of certain elements essential to perfection.

It is scarcely possible to underrate this discovery so modestly stated by our correspondent, that summer pruned grapes are not as sweet as grapes "let alone." It adds one more difficulty to those we pointed out in the way of a correct analysis of grapes, as made by the United States Agricultural Department. It may account for the astonishing results of Dr. Wetherill, whose science made some grapes sour we all know to be sweet, and others sweet that the wildest fox would not even make an attempt to reach from their well known character.

Not only climate and soil may have had to do with the Doctor's grapes, but the system on which they had been pruned also.

One cannot help feeling that the whole system of grape vine pruning, and indeed of pruning in general, as heretofore laid down in books, is fast tumbling to destruction. We are taught to pinch here, stop exactly there, at that precise point we are to cut, at that twist, and just beyond turn, no one knows why or wherefore, but that the author says so, and "he knows." So many inches of wood the first year, so many score of leaves, so many bunches. The second year so many, and the third just so many more. Chapter on chapter, treatise on treatise, have been written, and what do they all amount to? The whole story may be told in a few words, and we may put it in this form:

If grape vines are let entirely alone the greater vital force of the top of the canes will soon exhaust all below, and the vine will gain a point entirely beyond our reach. Hence we *train* that we may confine the plant to the limits we wish it to finally occupy; and we *prune* that we may regulate the vital force so as to distribute it equally over the vine. Some few prune to get large bunches, but those in the secret look to vigorous roots to achieve this desired end.

To train properly requires art and skill; that is the operator must have a foreknowledge of how what he does will end. If he wants permanent arms in one place, or to have canes annually in another, he must learn practically or from one who has had practical experience where to cut to bring them forth. This is the gardeners art, taught as boys are taught to make breeches, by precept and example, and for which end practical works answer an admirable purpose. In pruning, however, when its real object is understood, science is superior to art, and we will learn more by a few hour's study with a grape vine before us, than in a whole winter night's study of the most practical work. We want only to equalize the vines strength over the whole surface of the vine, so that no square foot

shall be lost, but that as large grapes should be at the bottom as at the top of the vine, and a regular quantity all over; and we also want to keep the vine within the limits we originally laid down for it. All this can be done by a few pinches of the growing shoots in summer time, and so perfectly can the work be accomplished that very little need be left for winter work to do. When a shoot appears likely to grow stronger than another, we pinch out its young and tender point; if that is not sufficient we take it away altogether. If one appear where a shoot or bunch is not wanted we take it out entirely. All this must be done early, before the leaves have well expanded, or the vine will suffer by what would then be summer pruning decidedly. One great object should be to get as many healthy leaves as possible. Where our vine is in a small space, we have to thin out more shoots than we would otherwise do, to give room for leaves to develop themselves freely; but there is more danger generally of having too few than too many.

In pinching back strong shoots, or in stopping back any when they have reached the assigned limit to their length, the young buds just beneath the points pinched back to, will burst again. If wanted to increase in length as in the first instance, one bud can be left to grow, the others pinched back again as they grow, in order that they shall not entice away any sap from the original leaves, which must in all cases be left as long as possible on the vine, and carefully guarded from all injury from any cause whatever.

Thus we would make all pruning have an ultimate reference to the leaves, checking the strong shoots so that the weaker shoots may bear larger leaves, and thinning out shoots only that the leaves on the canes we want to preserve should have every chance for as full a development as we can possibly afford them.

We have before laid down the maxim that if we "take care of the leaves the trees will take care of themselves;" and we are pleased that our unknown correspondent has published a hint by which we are enabled to enforce the point with greater emphasis than ever.

A LEAF OUT OF THE NEXT NEW COOKERY BOOK.

As editors we have the privilege of receiving and reading and sometimes giving to the public all sorts of curious contributions. As editors we must bear the annoyance of reading ever so many totally unfit for publication. For there will always be people who have an axe of some sort to grind, and either

in an underhand or an upperhand sort of way want to be advertised gratis, by having their disinterested contributions inserted in this magazine. Their writings form the greater part of our rejected ones. The rest are of an odd mixture, and if a heap of them were subjected to high pressure not a great deal of good would run out of them. As a sample of the ludicrous, tempered with sense, we instance the following:

L. D. lays down the law of taste. He describes it based on no foundation. Fashion and appetite the only guides. He reads by the light of history, and quotes the dishes of Cucullus, peacocks, tongues, sardines, livers, etc., etc., from antiquity, without stopping for a moment at the feudal ages. He travels to modern times and likes to dwell on the French frogs, the German horseflesh, the Chinese birds' nests, the ditto genuine dog sausages, the Russian tallow pies, the Japanese candied locusts, etc. etc.; regrets the want of a proper journal for cookery in these United States—hear it army and hear it navy!—; remembers that "cookery is intimately allied with botany;" gives the preference to the *Gardener's Monthly* over the *Scientific American*, for publishing his discoveries; and finally draws the attention of a discriminating public to the discovery of marine plants—as fit for the palate of man.

Irish moss he starts with, as everybody knows it; relates that in London market he saw different seaweeds exposed for sale; that he ate of them and liked them; that the Irish, the Scotch, the Norsemen and the Icelanders, extensively chew, eat, and decocted, "drink" the plants of their seas; that he did so himself among them.

He then asserts that they (the plants of course) being gelatinous, are palatable, and "refers" to calf's foot jelly as an acknowledged gelatine. Assures the world that a proper boiling will take away from most of them their brackish taste, leaving at most no more of it than we like in oysters, or in oyster plant, their representative "on earth." And winds up with the request that, through the agency of the *Gardener's Monthly*, we shall tell him the names of the principal marine "plants and weeds" of the American coasts, with a description, and where they may be found. Also, if not too much trouble, with those of the Pacific, as he has a nephew "there."

We will do better by him, and instead of giving him our own most circumscribed knowledge of the subject, we refer Mr. L. D. to the whole body of our readers, one and all, to whom we here commend him—and leave him.

M. LAUJOLET IN THE CHAIR.

Toulouse is an ancient city in the south of France, famous for its old University—one of the few universities one meets in France outside of Paris. In this University, through the exertions of the Horticultural Society of the Upper Garonne, a Professorship of Arboriculture has recently been created. In the *Recue Horticole* we read with what pomp and *eclat* the first course of lectures was inaugurated; how the ladies of the town, and the authorities and magistrates, and the professors thronged to be present at the opening discourse of the new professor, the well-known M. Laujoulet. Amongst them, Marshal Niel, the Chief, we believe, of the French Engineer Corps, and who planned the siege of Sebastopol.

This address is not of particular interest for American readers. Its burden is the old song: Little has been done heretofore; let us be up and doing now. Most of our fruit (mind, kind reader, he speaks of France in general, and of Southern France, with its benign climate, in particular) is bad—nay, detestable. The culture of fruit—*pomiculture*—shall, therefore, be his first object to teach.

That is our cry, too, in America, and we take comfort in the thought that the knowledge of our shortcomings is the first and most promising step towards study and final perfection, if perfection be attainable in our branch or any branch of science.

But as of universal interest we take to be the following remarks of M. L., which are applicable all the world over. Every one may think M. L. addresses him when he says:

"All progress has its source in cultivation, in practice. But we owe to practice something besides progress. We owe it those joyful emotions—*ces joies vives*—which, in the solitude of the country, spring from observation, from study, and, above all, from success. There I find myself face to face with nature. I say to the tree, 'Thou hast thy laws, I impose mine on thee.' I will determine thy shape and thy size. I will accelerate or retard the time when I will gather thy fruit. And of that fruit I will, as I chose, increase the size or their flavor. Thou drawest thy nourishment from the soil, but I distribute that through thee as I like. In *this* spot shalt thou give me a shoot of such and such size and thickness. I shall ask that shoot to bear fruit, and fruit will there be on it. Again, I shall order it to assume and develop all the caprices of my imagination, and lo! forever will it bear the impress of my will. There is a power that has created thee, but I am the power that

rules thee, directs thee, and brings thee to perfection.'"

"In this sentiment," continues M. L., "there is a profound satisfaction for us. Our pride is awakened, and I would like all the world to know and to share that pride. There is also in this sentiment a religious gratitude for the large share given by the Most High to intellect and to work. And there is such fascination in it, that it would be sufficient, when known to draw the population into the country. He who cultivates the ground, gets attached to it, not always merely by a marriage, as it were, entered into for the sake of profit, and which often enough may raise the wish for a divorce, but by an alliance of the heart, which gets every day closer and closer, and precludes henceforth any infidelity. . . .

"The man who sows a seed-corn, or who plants a tree, thinks little that he sows and plants something besides; that the ground, now the depository of his hopes and joys, and henceforth his mistress, links him to it for all times by the most beneficent, and also by the most happy of servitudes. [Loud and continued applause.] You stop me, ladies and gentlemen. Let me wind up, then, by claiming of the tree all that the tree can give: money, for everybody wants *that*; good fruit, for every body likes *them*; lastly, if possible, some happiness, for surely nobody has too much of it." [Renewed applause.]

And M. Laujoulet closes his address by saying that "Progress is not confined to distant countries, nor is there a privilege for it, neither is there a secret for any body. We may beware of pride and of local prejudices; they are, indeed, the index and the cause of ignorance. But, on the other hand, there is nothing to discourage us. The same sun that shines over France ripens our fruit. We shall make progress, because, forsooth, we are compelled to it. Steam and the press have brought men and matters, ideas and interests, into such close communion, that, in the midst of this unity which enlaces all the world, it will at the present day be as difficult in France to remain alone behind as it would be to progress alone."

If we read "America," instead of "France," will it not forcibly apply to us too?

We have been led to make these remarks by the suggestive note of our correspondent, Mr. Hudikoper, in our last number, on "Following Nature." The term is so often misapplied, that it will do no harm to iterate and reiterate in so many forms as we have lately done, our idea of what we can and cannot do with nature.

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.

ACER MACROPHYLLUM—*Arthur Bryant*.—"Can you inform me why the *Acer macrophyllum* is not advertised in the Eastern nurseries? I do not recollect ever to have seen it mentioned in more than one catalogue. Loudon recommends it for cultivation throughout Europe, from which I infer that it must be hardy. Please give some information about it through the *Monthly*."

[We gave a sketch and account of this at page 182, Vol. III. Most of our leading nurserymen have it amongst their "rare trees." Why it is not as common as it deserves to be, we do not know.]

ESPALIERS—*J. C. W., Fishkill, N. Y.*—"Will the quince bear and do well when espaliered? and also what kind of pear is best to train on said trellis?"

[We have never known the quince to be trained this way. Its twiggy habit will probably be against much success. Any variety of pear can be managed by this method.]

GREAT GROWTH OF AN OSAGE ORANGE—*Mr. Aug. Fendler, of the Botanic Garden, Tower Grove, near St. Louis, Missouri*, gives us the following interesting instance of the rapid growth of the Osage Orange. "Mr. Henry Shaw wishes me to mention to you the fact, that a few days ago we found many of the shoots of last summer's growth to be ten feet long, but there was one which had reached the extraordinary length of sixteen feet. The stem from which this shoot grew was only two inches in diameter."

MISCELLANEOUS QUERIES—*F. W. C., Flora Dale, Adams Co., Pa.*—1. Is *Sarracenia purpuria* common, or found only in certain bogs? I have been hunting for it in our meadows and swamps for two years, and cannot find it. I once found it in a bog in the upper end of Huntingdon County, but have it yet to find in South Mountain.

2. Should the suckers be let grow on bulbs (Hyacinths)?

3. Under what treatment and at what age does saxifrage bloom?

4. Why is water better for plants if warmed in the sun, than if by fire-heat?

5. How can the Fern *Polypodium vulgare* be propagated so as to be well seated on a stone or block? What other plants can be grown in that way successfully in a sitting-room?

6. I have just had the July number of the *Gardener's Monthly* in hand, and must confess I cannot agree with your advice to that man about his gardener's plan for dwarf pears. I planted some each way eight years ago, and would like you to see the difference."

[1. *Sarracenia purpurea* is not common in Pennsylvania. Your elevation is too high. It is usually found in the swamps not much above the level of the sea.

2. Suckering is popularly supposed to injure the flowering of bulbs, and they are taken off for that reason.

3. If the *Saxifraga sarmentosa*, the kind usually grown as a basket plant, it flowers much about the same as a strawberry plant would, namely: after it has been made to grow somewhat, then rested and started again. This can be done in three or twelve months, at the option of the grower.

4. The rays of the sun possess a chemical action, which, in connection with the warming of water and its beneficial influence on plants, is not well understood. A modern school of doctors say, a sick person is more likely to recover in a room in which the sun's rays sometimes penetrate, than in one on a north aspect; but why, they cannot explain with certainty. In the present state of this branch of science he is wisest who knows the least.

5. The spores of ferns will grow on rocks or blocks of wood easily; when the places where the spores are can be kept at one uniform degree of moisture for six weeks or so. How this can best be done depends on circumstances. Naturally, the shade of rocks or deep recesses of dark woods, or a vein of water near effects the purpose.

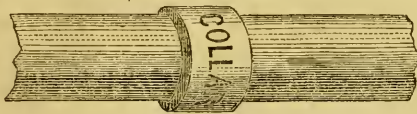
6. Much of the merits of this question depends on the plants themselves. If the quince was worked with the pear stock, say six inches or more above the ground, we should certainly not bury the quince all that way down so as to cover the quince stock entirely. We would not have such trees at all, if we could get others. But we still say, that when quince stocks are budded an inch or so above the ground, as they should be, we believe the practice of burying the stocks a little deeper than the point of working, is the best protection possible against the quince-borer, and, therefore, a com-

mendable practice. In other respects, deep planting is certainly an injury.

HEATING GREENHOUSES—*J. L.*—"Will you inform the public the best method of heating a greenhouse, size 20 by 40 feet? The kind of heating apparatus, and the kind of fuel that is the most economical—whether by steam or furnace?"

[For a small house, the best mode of heating is the old flue system, especially when the flues are made of clay pipe, as described by Mr. Saunders in a recent Report of the Pennsylvania Horticultural Society. We have seen these in use for the past three years, and are much pleased with their working. They take less fuel to heat the house than brick flues to an astonishing degree, and cost very little more at first than brick. They should be set as far away from the ground and as far away from any other absorbent material as possible, so that the air may have the benefit of all the heat they give off. There is less danger of their bursting than brick flues, in our opinion. Either will crack if a heavy flaming fire be suddenly rushed into it; as, if the inside be made very hot while the outside is still cold, it expands unequally and has to crack. In like manner, if a large quantity of very cold water be thrown on the best made flue, while it is very hot, it has the same effect. We allude to these facts because it has been made the chief objection to brick flues.

Some objection has also been made to these clay pipes on account of the difficulty of taking them apart to clean out any soot or other impediments. In this neighborhood this is obviated by fixing the pieces—which are in three feet lengths—together with moveable collars, instead of the regular sockets, as in the annexed cut.



The pieces are fitted together, and the collars slid over the joint and soldered with any kind of stiff clay. There is a great difference in the quality of these pipes. Most of those used in Germantown are made up, in main part, of fire-clay, and adapted to endure in the same way as fire-brick. Occasionally they are made of common pottery or flower-pot material.

In our region, which is a coal district, coal is the most economical fuel. Wood will answer as well where cheap. The cheapest management of a greenhouse-fire is never to let it go out in winter. Hav-

ing once got the heat up to the required temperature, throw on a few fresh coals. In about half an hour after, cover the fire entirely with wet ashes, wet sand, or any similar material, suffering the draft to remain on as before, and the fire will keep for forty-eight hours without attention, and throw out heat enough to keep up the temperature in the house, unless there be a great change outside.

There is no greater art in gardening than the proper management of a greenhouse-fire. One man will do with twenty dollars worth of coal in the house through the season that another would use forty dollars worth for, and yet have the house as warm, most of the latter's heat passing through the chimney. The proper "banking up" of the fire, and the proper preparation of the fire previous to "banking" are the chief features of the art. Many depend on draft-doors to the ash-pit, and dampers in the flues to regulate the heat; but it is not near so good as a good "banking," and we would dispense with dampers and ash-pit doors altogether.

We have extended these remarks because it occurs to us at writing, that the subject has never been before touched by horticultural authors; and as the writer spent many a winter's evening "in the stoke-hole," seeking, with the help of a piece of tallow candle stuck in a porter-bottle, his "education;" ash-pit and fire matters are amongst those in which he feels particularly accomplished.]

MISTAKES—*W. R. Prince, Flushing, N. Y.*—"I see, at page 3 of your January number, that Mr. Huidekoper, in his 'Notes on Grapes,' states that Bowker and Green Madeira obtained from me had proved exactly alike, and he then goes on and describes the fruit, which is the Bowker precisely, but *without acknowledging its identity*, leaving it to be inferred that it was not correct, and says he rejected it. On referring to our sales-book, I find that Mr. H. did buy, April 13, 1861, grapes amounting to \$3.12. At that time I was prostrated by inflammatory rheumatism, and the order was executed by the manager of the grape-houses; but I do not plead this by way of excuse, as there is no excuse for an error in a well-regulated nursery. I desire simply to state explanatory facts. First. All our 'Bowker' vines are grown from vines received from Mr. J. F. Allen, of Salem, who obtained it from Mr. Bowker, of Salem, who grew the original from seed, and, therefore, our vines are *positively genuine*. Secondly. The 'Green Madeira' was obtained from another source, and has but recently been an-

nounced, and not yet fruited with me. Whether it is identical with the former, or whether our gardener committed an error, I cannot yet solve; but I do say this, that our grapes are all *numbered by our Catalogue*, and it would be next to impossible to make a mistake, and the same precision exists throughout every other department. I am, therefore, ready to say, that if ever an error should occur, we will replace it to double the amount; and had Mr. Huidekoper ever intimated to us that there was a seeming error, he would have received prompt amends."

[We insert the above out of a desire to give the idea of "fair play" the widest interpretation, remarking, however, that we understand nothing in Mr. Huidekoper's paper that entitles Mr. Prince to any reply. Mr. Huidekoper says the two grapes proved exactly alike, and Mr. Prince himself hints they may be synonyms, and we think they are. There is no construction that can make Mr. Huidekoper's remarks censuring of Mr. Prince.]

The annoyance to the purchaser, however, is no less because it is difficult to fix the blame. Perhaps nine-tenths of the fruits propagated in nurseries are from stocks that have not fruited under the propagator's hands. Sometimes they go through dozens of hands this way, and it is impossible for the most systematic and honest nurseryman to say, *of his own knowledge*, that his plants are correct. Do his best to be *morally certain*, and he will get wrong at times, for all.]

CULTURE OF ROOM PLANTS—"A Subscriber," Delaware, writes:

"Thank you for your hints in the January number. You cannot be too plain in your directions to aid the novice in floriculture. As, for instance, I am free to confess I do not know what the Anemone section in Camellias is. Please tell us the best camellias for room-culture. Have you a hardy Blue Eupatorium in your collection? A neighboring florist tells me so. I cannot find it elsewhere. *Lopezia rosea* I find not to be had. Is it fine and worth taking trouble to procure? My gilliflowers bud, but do not bloom fully. Can you direct me how to forward them? They are thrifty plants, and not troubled by insects. How can fuschias be made to bloom in winter?"

[The anemone-flowered section of camellias embraces those which have flowers resembling the anemone, which consists of an outer row of broad petals, and the interior filled with a thick mass of short petals, usually not much above half the length of the outer petals. The Warratah is the type of

this class. The Double White may be taken as the type of the other class, in which the petals are all like the outer ones, except gradually decreasing in size to the centre. The Anemone-flowered kinds are found to force best. For room-culture, however, where great heat is an injury to the camellia and should not be allowed, we would take for six: Double White, Candidissima, two whites; Reine des Fleurs, Chandleri, Miniata, and Sarah Frost, colored. The large-flowered kinds are not so easily grown in windows, though we have included Reine des Fleurs, which is a large-flowered one, but does better than others of that class. Sarah Frost has one objection in its leaf-buds pushing out as the flower-buds open, partially enveloping the flower; but it is so hard to make its buds drop, that it is, on this account, one of the best window camellias.]

The Blue Eupatorium (*E. caelestinum*) and the *Lopezia rosea* are in most of the florists' houses about Philadelphia, and, no doubt, in the principal establishments of the Union. No one who wants cut flowers in winter will want to be without the latter after once having it. It does not bloom in summer.

The gilliflower (the Brompton variety, we suppose) has probably been grown strongly. After they have become a little more exhausted, they will, no doubt, flower all the better for it. We have never known fuschias to flower very well in winter. It is usually more the result of "haphazard" than a defined system. If any of our correspondents are particularly successful, we should be glad to have the particulars.]

SACCHAROMETERS—F. N., Sandusky, Ohio, asks:

"I am making my first effort at wine-making. I sent to Philadelphia and obtained one Bauné's Beer Hydrometers and a corresponding one of lighter weight. The beer hydrometer is graded from 1° to 24°, the other from 10° to 45°. My Catawba grapes, *not summer-pruned*, weighed 19°; summer-pruned, near two weeks later, 16°; Isabella, 17°. What is the specific gravity of Baumé's Hydrometer? I can obtain no scale at McAllister's for it. 40° on the light hydrometer is the weight of pure alcohol, tested with powder. Completely saturated, it flashed perfectly."

[In view of the practical importance of this question, we deemed it worthy of a fuller notice than we could afford it in this column; so we handed it to a friend, whose scientific pursuits give him a full knowledge of this branch of study, and

whose obliging communication will be found on page 70.]

SUMMER PINCHING GRAPES.—*W. G., Davenport, Iowa*, asks:

"Will some of your knowing contributors inform your readers which is the best time to pinch the ends of the *fruit* branches of the grape-vine—while yet in blossom, or not until the fruit is set?"

"Grape-growing is beginning to assume some importance in this locality. Last year, for the first time, the rot cut off our crop of Catawbas. Indeed, all kinds were more or less injured."

NURSERYMEN AND HORTICULTURAL PUBLICATIONS.—A correspondent, in a private letter, gives us such funny information, that we may be pardoned for making an extract:

"I find that some of the nurserymen I met here (Rochester, N. Y.) are bitterly opposed to the agricultural and horticultural periodicals,—and yours amongst the latter, in particular, because of its large circulation, on the ground that it greatly injures their business. Every new idea, plant, or fruit is blabbed as soon as out, and scores of nurserymen are annually raised up to know as much as they, till the business is becoming not worth a cent. They complain, also, of the great facilities such journals give to advertising, whereby every body knows where to get every thing, and thus individual enterprise has no chance. They growl fearfully, too, at the low prices ruling everywhere, and one was anxious to be a party to some steps whereby a combination of the principal nurserymen of the country could be made to fix the prices of all the staple articles, to which price all of them should agree to abide by. I think, myself, something of this kind might be done, and that, perhaps, you might think favorably of the idea."

To all of which we reply, that "this reminds us of a little joke." Some years ago, the brewers of Philadelphia met and agreed that beer should be sold at so much per gallon. It was agreed to unanimously. All went well for a while. Eventually it was found that one of the combiners was getting all the custom. "Was he selling below the fixed price?" He indignantly denied the imputation. But the secret came out. He gave *thirteen barrels to the dozen!*

As for the "injury" agricultural papers do the trade, that is an idea worthy of the days of Rip Van Winkle. Of course, they do a little injury,—the greatest blessings are not exempt,—but the advantages they have in extending and widening the

taste for horticulture, and thus creating an additional demand for nursery stock, more than compensate for the "increased" nurserymen it raises up.

But it is useless to argue these things. There are men who, if they ride in a railway-car and get a spot of dust from the locomotive, would get out of the train, tear up the track, smash the engine, kick the engineer, and hurrah for the old stage-coaches. These men are of little account in any community. Free competition, which means free advertising and the most wide-spread intelligence, are necessities of the age. With all the evils, we could not get along without them, and they who use them most are bound to win.

STOCKS—*W. H. W., Reading, Mass.*—"1. Does the nature of a pear stock ever seriously affect the nature of the engrafted scion? I have a wild stock grafted with Superfin, and the shoot shows long spines. I am sure I have a true Superfin scion, for I cut it from one of my own bearing trees. Shall I let it grow, or graft again?"

"2. What is the relative value, for manure, of leached and unleached ashes? How much of the latter is a bushel of the former worth!"

"3. I see you, in common with many others, pronounce the Rebecca a slow grower. Is not this only when small? I bought a fine layer last spring of Dr. Grant, which grew about *eleven feet* and ripened its wood to within a few inches of the end. I think if large and vigorous plants are set out, there will be much less complaint of its slowness of growth."

[We remember no particular instance; but it is quite possible for a slow-growing stock to make a kind growing on it more thorny; thorns being scientifically but stunted branches. Yet grafting on the quince should produce this effect on the Superfin, if it has in your case, but we have never noticed it.

2. No data can be arrived at. On some soils leached ashes are worthless; on others superior crops have resulted. The whole subject of leached ashes as manure is unsatisfactory.

3. Very good for your Rebecca. We have, at times, seen strong growths, and these, too, from plants that were originally very weak and sickly; but we think vigorous growing Rebeccas are the exception, and not the rule.

HANDSOME THORN.—A New York correspondent writes:

"I send you fruit of a thorn, which stands all

alone in a twenty-five acre lot in the centre of a stone-pile. No tree or shrub is near it, and it is really a most beautiful object, covered with its large red berries. I would give, poor as I am, two or three dollars to have it in my lot near my house if it could be transferred intact without curtailment. Will its seeds produce its like, do you suppose? How long from seed to a berry-bearing plant? Too long for my gray hairs, I am afraid."

[We had occasion to reply to this by letter, but reproduce the inquiry here to call attention to this beautiful species—*Crataegus coccinea*. It is best propagated by grafting on other kinds. All the thorns can be grafted easily. The Cockspur species—*Cr. crus-galli*—makes the best stock for either American or foreign varieties.]

CAMELLIAS, BEGONIAS—*J. H. T., N. Bedford.*
—I like flowers, and not being blessed with a hot-house, I contrive to raise and flower about 90 pots in the windows of the room, and like some of your friends would like to ask a few questions, premising that I can flower to perfection *Daphne odora*, Azaleas, Roses, &c. Can I probably flower successfully any Camellias? And if so what ones would be most likely to succeed? Can you name the enclosed plants of the Begonia family.

[1. Spotted-leaf Begonia *picta*, a variety of the species (if there are any real species in this changeable family) *B. argyrostigma*.

2. *Begonia manicata*. You can grow the plants named very well in a window. The only trouble may be the atmosphere of the room will be too dry, and you must use precaution against this.]

Books, Catalogues, &c.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA. Third Annual Report. From the Secretary, Mr. Gustavus Heins, Downingtown, Pa.

A brief abstract of the proceedings of this flourishing local Society was given at the time of meeting; but when we say that the full report contains fifty pages of important matter, it will be inferred from our brief sketch how valuable the whole report is to those to whom the privilege of membership entitles it.

CATALOGUES.

A. R. Whitney, Franklin Grove, Ill.
H. Plessner & Co., Toledo, Ohio.

Peter Henderson, Jersey City, N. J.

Augustus Scout, Smyrna, Del.

H. B. Lam, Sandusky, Ohio.

H. A. Congar, Whitewater, Wis.

C. W. Cutting, Detroit, Mich.

E. J. Evans & Co., York, Pa.

Hovey & Co., Boston, Mass.

O. B. Maxwell & Co., Dansville, N. Y.

J. M. Thorburn & Co., New York.

David Buchanan (late Reid's Nursery), Elizabethtown, N. J.

E. Moody & Son, Lockport, N. Y.

Silas Boardman, Rochester, N. Y.

S. Moulson, Rochester, N. Y.

Ellwanger & Barry, Rochester, N. Y.

Buist's Garden Manual, for gratuitous distribution. The tenth, we believe, of these useful annual serials.

Alfred Bridgeman, New York. No. 1 Vegetable Seeds; No. 2 Flower Seeds.

Hareison & Co., near Clarksville, Tenn. We are pleased to find this firm still thriving throughout all the dreary changes of the past. They have ever been warm friends of the *Monthly*, and we wish them a long-continued success.

H. Southwick & Son, Dansville, N. Y.

New and Rare Fruits.

NEW APPLES, from O. T. Hobbs, American Garden of Experiments, Randolph, Pa.—Last fall we received a set of seedling apples from this gentleman, which we have reserved till now in order to bring out their character after keeping. Three of them we think particularly well of, especially one marked "tree 91, fruit 1008;" another one, "No. 64, fruit 641," appears to be a remarkable keeper—at this date (Feb. 14,) it is as fresh and solid as if gathered from the tree. The next best is one named "Randolph Sweet," a long ovoid shape, and of large size, this also is as fresh as when first received. These we regard as very promising fruit.

THE DESERET CURRANT is of large size, a quart of the fruit would average three inches in circumference to each berry. They ripen here all through July are of fine flavor, and of four colors, viz.: black, purple, red and yellow; the red are largest, but the yellow most desirable. They require a rich loose soil, when they bear fruit profusely.—*P. Far.*

NEW FOREIGN GRAPE.—*Muscat Troveron*.—One of the finest of all the White Grapes; as such it

received a First-class Certificate at the July Show of the Royal Botanic Society. As large as a Black Hamburgh, bunches 15 to 20 inches long, with a fine rich acid and slight Frontignac flavor; one of the finest Grapes for Exhibition purposes.

THE PENN PEAR.—Native of Bordentown, N. J.

"The tree is vigorous, upright, and compact in form and growth, and somewhat resembles the Seckel, except that the branches are straighter. It yields abundantly every year, but every other year in excess, when the fruit is not quite so high flavored. It ripens gradually from early in October till first week in November, and some seasons with care continues till Christmas.

Frazer—Railroad Fuss—Butter.

Fruit medium, oblate, sometimes roundish oblate, angular. *Skin* pale lemon yellow, thickly sprinkled with small greyish and russet dots, and sometimes a few patches and dots of russet around the calyx. *Stalk* medium to long, rather stout, slightly inclined, a little enlarged at its insertion, sometimes by a ring in a large uneven cavity, often in a slight depression. *Calyx* open, segments rather short, erect; basin large, deep, slightly furrowed. *Flesh* white, a little coarse, very juicy, melting, with a sweet, pleasant, refreshing flavor, slightly aromatic, and a little musky perfume. "Very good." Core rather large, and a little gritty."—CHARLES DOWNING, ESQ., in *Horticulturist*.

Obituary.

DEATH OF NICHOLAS LONGWORTH, ESQ.

Death has been busy with many of our distinguished horticulturists during the past, and we are sorry to have again to record another great loss in the death of Mr. Longworth, who died on the 11th ult., in his eighty-first year. He has been failing for some time, and his death was not unexpected to his friends.

The personal history of Mr. Longworth need not be given here. How, when a poor boy, he travelled from farm to farm, earning his living by shoe mending at each stopping-place,—how he afterwards obtained employment in a law office, and subsequently rose to the bar in Cincinnati,—how he received "worthless" lands as counsel-fees, and which lands eventually assisted in the formation of his immense wealth. All these and many other particular points in his remarkable career are well known to all. As a horticulturist he is best known to our readers, and particularly to those interested

in the grape and strawberry. In these two points he has done more than any other man to render lasting service to his country.

How he came first to give his attention to horticultural pursuits, we have no information. Our first knowledge of him was in connection with grape-culture. This early occupied his mind, and he was one of the first to enter into grape cultivation largely, with the view of rendering this country independent of foreign wines. His first attempts were with the foreign grapes. He, like many of the present day, believed the failure of those who went before him with the foreign varieties was not from climatic influences, but from ignorance of the proper mode of managing them. But after great losses, he found that others knew as much as he in this respect, and he entirely abandoned them for the native kinds. How he succeeded with the Isabella, and particularly with the Catawba, we need scarcely repeat here. His wines are well known everywhere at home, and have even been exported in large quantities to other countries; and by his exertions alone in this line, millions of dollars have been saved to this country, that would else have been sent abroad for the foreign article.

In the strawberry line, also, his name will long be remembered.

Though he was not the first to point out that the strawberry was what botanists call a polygamous plant; that is, the plants bearing sometimes perfect flowers, sometimes male, sometimes female, and sometimes flowers of all kinds on the same plant; and though he was not, probably, the first to publish the necessity to large crops of fertilizing the imperfect flowers with more perfect ones; he was, at the least, the first to bring the matter so prominently before the public, that whatever merit may be claimed for the benefit to the public of a knowledge of this fact rightfully belongs to him. Like many discoverers of useful facts, however, his enthusiasm in behalf of his sexual theory was almost boundless. He contended that these sexual differences were the result of primary law, such as botanists consider necessary to fix the character of a species, or what they call a "well-marked variety;" while the late A. J. Downing, and, after his death, the writer of this, regarded them as the creatures of secondary or mere local laws. The practical value of this question was, that if the former doctrine was right, there could be no change, under any circumstances, in the character of the flowers after the variety was once raised from seed; and hence, if any difference in the character was

observable, it would be the result of fraud, negligence, or accident on the part of the nurseryman who sold the plants. It was a question merely of identity of varieties and the business character of nurserymen.

We refer to this "strawberry" war because it is one of the great incidents in Mr. Longworth's horticultural career. Throughout the height of this controversy the two principal parties to it (Mr. Longworth and the writer of this) remained warmly attached personal friends; and it was a source of great regret to both, that other parties, with the best intentions, should have discussed the subject so warmly, that the ill effects in the horticultural community remain to this day.

In general matters of horticulture Mr. Longworth took great interest. He was the second one, we believe (Mr. Caleb Cope being the first), to build a house for the growth of the great Amazon Water Lily (*Victoria regia*), and, we believe, the second one to flower it. He was, moreover, one of the principal founders of the Cincinnati Horticultural Society, from his fellow-members of which we shall, doubtless, have a notice doing more justice to his valuable services to horticulture than this hasty sketch allows.

GRANT THORBURN.

Amongst the horticultural celebrities who have recently passed away from us, Grant Thorburn holds a conspicuous place. He died at New Haven, on the 21st of January, aged ninety years.

Mr. Thorburn was one of the first seedsmen of the now great city of New York, and being a shrewd business man, his efforts in that line prospered. His native place was Scotland, born in Dalkeith, near Edinburg, and he came to America in his twentieth year. He amassed a considerable fortune, and for the last few years lived in retirement. He was famous for his industrious habits, and attributed his long life and strength to this cause. He had a practice of spending an hour every morning sawing wood. This he continued up to the day of his death, actually dying with the saw in his hand over his wood-pile.

RUSSELL COMSTOCK.

Russell Comstock, formerly of Mabbettville, N. Y., died in that place on the 9th of January, aged sixty-two years. His vagaries on vegetable physiology induced him to propound a new system of practice, which he called terra-culture,—vagaries

which, as horticulturists, we can well forgive, as they were the occasion of one of the pleasantest essays of the late A. J. Downing.

Foreign Intelligence.

TO GROW SALSIFY.—To grow good Salsify choose ground which has not received any manure for at least two years. Bastard trench this ground some 8 inches deep. At the bottom of the trench place a tolerable good thickness of well decomposed manure: slightly mix it up with the soil at the bottom of the trench, returning the soil lightly upon the same. Let this same upper soil be slightly forked over occasionally, as it needs pulverizing well to admit of the ready access of the first root into and through it; when you have sown the seed slightly tread the whole of the soil down firmly.

The time of sowing is an essential point, indeed, one of the many trifles the persevering study and performance of which invariably furnish the master key—success. I would not wish to fix a certain date upon which to sow; it would at all times be far better to be a week behind, than to be one day too soon, for the whole after growth of the crop depends upon the ready way in which the seed vegetates. If it germinates healthily, the plants generally grow strongly, and the embryo root the same. But when you consider the weather settled, and likely to continue fine, with soil properly dry, &c., sow by all means as early as possible, but under those conditions. These remarks apply to the usual time of sowing, from middle April to first of May.—*Gard. Chronicle.*

NEW AMERICAN PLANTS IN ENGLAND.—Many of the beautiful plants discovered by Dr. Parry in the Rocky Mts., and recently described by Dr. Gray, and to which we have several times during the past year referred in our journal, are already offered for sale (seed) in England. Amongst others, *Pinus flexilis* and *P. avistata*, *Abies Englemannii*, &c.:

Actinella grandiflora, *Torrey and Gray*.—A remarkable composite, from the Rocky Mountains. It is described by Professor Gray, in "Plantæ Parryanae," as a splendid dwarf Alpine plant, with (yellow) flower-heads nearly three inches across. Perfectly new to Europe. Height six to nine inches. Ray florets apparently marked with a black spot at base, as in *Gazania*.—*Gard. Chron.*

It will be said as heretofore, "where is American enterprise," to let foreign nurserymen get these

seeds first; but foreign nurserymen have one hundred customers, perhaps, to an American's one for such things, which takes away some of the "virtue" of the "enterprize."

Horticultural Notices.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The Discussional Meeting for February was presided over by W. L. Schaeffer, Esq., in the absence of the President.

The essayist for the evening, Mr. James Jones, read a lengthy and very interesting article on "The Preparation, Arrangement, and Cropping of Vegetable Gardens."

Chairman—Do you raise your own seed?

Mr. Jones—Yes, sir. As a general thing, good seed cannot be purchased in the markets.

Chairman—In raising early cabbages, I find it almost impossible to prevent their getting the club root. For the fall crop, I dip the roots in a mixture of lime and clay, and find that they do well. What is your experience?

Mr. Jones—Lime and salt combined will remove the difficulty.

Mr. Satterthwait—In raising celery I differ somewhat from Mr. Jones' method in the packing. I pack in by trench, and have not one-fourth the labor. In packing the celery, I trench the width of a spade, and about the depth of the length of the celery. The celery is covered with leaves, &c., to keep out the frost. The celery is set upright. I do not bury the entire length of the celery under ground, but bank up around it. Dry leaves are the best covering, as they keep out moisture and frost. Straw gets wet and rotten. Corn-fodder answers very well laid alongside, but boards would probably be best.

Lima Beans grow better with manure along the row. I furrow out and place poles along the furrow, put in manure, and plough up to the poles. After the ground is thus prepared, I plant four beans to each pole, close together, so as to more easily break the crust. I never sprout them before planting, and never let more than three of them grow. My idea of a vegetable garden is to have rows of fruit trees, with vegetables growing between the rows, and every thing cultivated with plough, &c.

Chairman—How high are the poles?

Mr. Jones—About eight feet high. When late-rais get along, I turn them back. The planting of

four beans together is a good idea. I put in about double. All the seeds grown in the Girard College gardens are put in by the boys under my supervision. Carrots and parsnips are planted the first or second week in April.

Mr. Satterthwait—I find that I can grow a better crop of carrots and as good of parsnips by planting in early June.

Mr. Jones—The advantage gained by planting early is to get crops in advance of the weeds. I sow cabbages in January in an old hotbed, and am just raising them now. None of my early cabbages go to seed. For putting away cabbages, I select the best in the fall, of those not having too much head; select a slightly sloping ground, fold in the leaves and set them on their heads in three rows, so as to touch each other, placing those having the tallest stems in the centre. I then cover them all up, putting manure on the north side. The sun on the south side during the day counteracts the effect of the frost over night.

Mr. Parry spoke of the plan pursued in Maryland, where large quantities of cabbages are grown frequently from fifty to sixty acres on a farm. All that are headed up close and solid are carted to market during the fall, as they become fit; the others that are loose and unsaleable are gathered into piles, putting four rows together in an expeditious manner, several men each taking a pole about five or six feet long, with a forked branch near the lower end to hook under the cabbage-head, by which it would be pulled over and swung to the pile, to remain thus exposed to the drying sun and wind for several days, to wilt and toughen the leaves, so as to prevent breaking when handling them. They were then hauled to some favorable place with a southern exposure. With horse and plough a furrow was drawn east and west about fifty to one hundred feet long. The cabbages were then taken singly and placed close together, with their roots in the furrow and tops leaning south, another furrow ploughed against them and well trod and packed around the roots and stems. Prepares the place for the next row of cabbages, the roots of which are placed in the furrow and heads leaning against those first put in. Then another furrow is ploughed against the second row, and earth trod around the roots as before, and so continued until they occupy a space about twenty to thirty feet in width, thus to remain until winter sets in, when they are all covered over with green pine boughs, straw, stalks, or litter of any kind, to protect them from the severity of the weather. By the latter part of winter and fore part of spring

they become firm and solid heads, and are then taken to market and meet with ready sale. Thus the cullings and inferior heads that were not fit for sale in the fall, become more profitable than those which headed up early in the season.

Mr. Satterthwaite—I pit parsnips by digging down about one foot and putting twenty-five bushels in each pit.

Mr. Lejee—In China, where the fields are remarkably productive, the only manure used is the crude night soil.

Chairman—Probably one cause of the fruitfulness of Chinese cultivation is the artificial irrigation of their fields.

On motion of Mr. James Eadie, the essay delivered by Mr. Jones was referred to the Committee on Publication, with reference to its being printed. On motion, adjourned.

DISPLAY, FEBRUARY 10TH, 1863.

The plants on exhibition comprised two beautiful collections from Fairman Rogers, Esq., and P. Mackenzie & Son. Among the former were many of the old favorite Begonia, Azaleas, Camellias, &c., in all, over 50 plants. Prominent among them was a lot of six named varieties of Chinese Primroses, very choice sorts and well grown, which carried off the prize offered for the first time for this class of plants.

Mr. Rogers was equally successful in the competition for Azaleas, and for a Hanging Basket of rustic work, containing a *Nephrolepis exaltata*, whose immense drooping fronds hang half way down to the floor. We have seen no object of its kind so beautiful and unique in a long while. *Campylobotris refulgens* was shown for the first time, similar to the *regalis*, with leaves less acutely pointed. For this and for three pots of *Anætochilus argenteus*, *pictus*, and *setaceus* special premiums were decreed to Mr. Rogers.

The new Camellia Cup of Beauty, exhibited for the first time, elicited much attention and praise. It is pure white, with a strongly-marked deep pink or rose-colored centre, both peculiar and beautiful. Mr. Edward R. Hibbert, gardener to Mr. R., deserves great credit for the uniformly neat, cleanly, and healthy appearance of his plants and pots. The tastefully-printed Card-labels attached to most of the plants are worthy of general imitation.

Those veteran florists, Mackenzie & Son, brought a large assortment of plants in bloom, containing 29 varieties, and 57 specimens, besides 22 varieties of Cut Camellias. These last received the premium. Their collection comprised 11 Acacias, 13

Chinese Primroses, 9 Camellias in pots, 6 Azaleas, and a number of Ornamental Plants, some of which, with red and yellow berries, were very pretty. Among the Cut Camellias, Jenny Lind, Towne's Blush, Sacco magnifique, and Ellen were very fine.

Adam Graham, gardener to General Patterson, received the prize for a large and richly-decorated basket of Cut Flowers.

James Eadie, gardener to Dr. Rush, offered a Table Design of a somewhat novel character, and made up of the rarest and most fragrant flowers. It is rare to see such a profusion of truly choice blooms as were woven into this attractive composition for the dinner-table. It was worth intrinsically many times the premium awarded to it. A pair of pretty Hand Bouquets, by the same contributor, were also found worthy of the award.

William Southwood, florist, had also a pair of Bouquets well made up, and a graceful rustic Hanging Basket, filled with Ferns and all manner of "creeping things" in the vegetable kingdom.

Our venerable friend, I. B. Baxter, made his usual display of Winter Pears, and took the usual prize. His specimens of the Niles Pear were excellent to look at, for they are not eatable till March or April.

Mr. S. W. Noble had on exhibition a small collection of Apples, including some comparatively new sorts of local reputation, as the Jackson, Nut, and Heister, and one new seedling from Michigan, called the Milton, somewhat like, but inferior to, the Bellefleur.

The President, J. E. Mitchell, Esq., had also a variety of Apples, of which the old Vandevere, White Doctor, and Fornwalder were very large and handsome, and, to our taste,—for we generally manage to get an invitation on the *Tasting* Committee,—very palatable and refreshing.

W. L. Schaffer, Esq., presented a dish each of Baldwin and Rhode Island Greening Apples and of Winter Nellis and Glout Moreceau Pears. We must accord the highest praise to the apples for beauty of color, freedom from blemish, and excellent flavor. When such fruit can be grown generally in Pennsylvania, we need not go to Boston or Rochester for our supplies. The pears were as fresh as when gathered from the tree. Mr. Schaeffer informs us that the fruit was placed upon the ground under the trees and heavily covered with leaves, over which was thrown a piece of old bagging, and thus protected from the frost, were all perfectly preserved. Some he has ripened in a warm room, were delicious. If Winter Nellis, which hereabouts

is usually "done for" about Christmas, can be thus kept so easily till the middle of February, and other varieties in proportion, a new field opens itself for the profitable production of that most uncertain and fickle of all Pomona's children, the "winter pear."

Mr. Edwin Satterthwait presented to the Society some specimens of his skill in the early forcing of Vegetables, in the form of Asparagus, Rhubarb, and Radishes, all of the finest quality, and amply deserving their several premiums awarded. The Asparagus was especially commended by the Committee. In our last number we gave a hasty and imperfect report of the verbal remarks of Mr. Satterthwait on this subject at the Discussional Meeting in January. We have, in reserve, for a convenient opportunity, the written Essay presented by him at a subsequent meeting.

It is gratifying to learn that, under the new régime inaugurated by the leasing of their new hall, the Society is now flourishing like a green bay tree. May its laurels ever be green!

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

This body held its Annual Session at Harrisburg on the 4th, 5th, and 6th of February, pursuant to public notice given, and was one of the most successful, in every respect, ever held. Members seemed more free in communicating their experience than on previous occasions. The Committees seemed in excellent working order. Nearly one-half the regular members,—many of them coming near a hundred miles,—were present, and a large number of new members were admitted.

The proceedings themselves were unusually interesting, and we regret that our space will permit of but a very brief and condensed account of what occurred. The full printed proceedings—a copy of which every member receives—will be looked for with interest.

The President, A. W. Harrison, Esq., of Philadelphia, opened with his Annual Address, giving an account of the progress of fruit-growing for the past year, with valuable suggestions for the future from the experience of the past. He entered into a discussion of the aim and objects of the fruit-grower, for which individual effort was necessary, particularly in the introduction of improved varieties; the spread of horticultural information, both orally and by means of standard horticultural publications and "finally by bringing at least one new recruit into the ranks of the Society." He referred

to the two great methods of fruit-culture, "no cultivation, and too high cultivation," as being both failures. In reference to the reasonings often given for different practices, he pointed out how often effects were attributed to entirely wrong causes. Neglect was the dearest of all modes of culture; expense judiciously applied, the cheapest. Strong-growing varieties often did well in strong soil; but, for general health, most kinds did best in a pure virgin loam. He preferred that system best which encouraged the most surface-roots, and would underdrain and make the soil as deep as possible. The "hole" system of planting he anathematized; would sooner plant the tree on a sort of island, with the "hole" made at a distance all around it, but preferred to make but one "hole" for the whole orchard, by underdraining and subsoiling the whole. Approved of the subsoil-plough and lifter for this purpose. The objections to roots of trees getting in underdrains he thought more imaginary than real; for it was principally confined to willows, poplars, ashes, elms, and other moisture-loving trees that were seldom to be found in orchards. He would put the drains twenty-five feet apart, and the trees midway between the drains. Fences decay, manuring must be repeated, but underdraining, at a cost of about sixty dollars per acre, endured for all time.

Amongst the business was a discussion as to the best six apples suited to Eastern Pennsylvania. Of course, there are many apples better, which the members present had not tried, and many tried by others who were not present; but while such votes do not prove that the kinds voted on are the best that might be named, they prove that the kinds elected are, at least, good and reliable ones, and, so far, furnishes a reliable guide to the novice. The six were: Baldwin, Fallawater, Smith's Cider, Red Astrachan, Hubbardston's Nonsuch, and Porter.

The opinion of experienced members was taken on others not so well known in general culture as those chosen by vote, and the following were named by different gentlemen as doing very well in their localities: Hower, of Northampton County, which, Mr. Grider said, bore well and kept *two* years, a good thing where apples produce only alternate yearly crops; All Summer Apple, closely resembling Knowle's Early, but said to ripen from July to October; Krauser, York Imperial, Keim, Primate, Hancock, Foundland, Early Joe, Rhode Island Greening (some members, however, objecting), MacClellan, Pittsburg Pippin (some members said, though superior in size and quality, was a poor

bearer, and was known in some parts of Pennsylvania as Switzer, and was supposed to have been originally from Europe), Neversink (a Reading, Pa., seedling), Fritch, Landreth (a Virginia seedling), Fall Pippin (some members objecting that the tree was subject to disease), Gravenstien (most members speaking of it as a poor bearer), Fallwatter (Mr. Garber said he never authorized Mr. Downing to say, in his work, it was a seedling of Columbia County; he received the grafts first from Chester County, into which it was originally introduced from Montgomery County; it had many *aliases*; in Dauphin County it was generally known as the Pound Apple, and in Berks County, Tulpehocken; some of the members supposed it to be a foreign apple), Strode's Birmingham (Hoopes thought a rival for Porter).

How wide apart should orchard trees be set out? brought up an interesting discussion. Some members branched their trees from the ground, and never cultivated about them. These thought twenty feet apart sufficient. Others, who insisted on cultivating, and had to trim high for this purpose, advocated thirty feet.

David Miller, of Limerick, was the warmest advocate of the close-planting system. His orchard of eight hundred trees had now been nine years on this system, and he invited comparison with any orchard of the same age that had been high pruned and cultivated under them. Trees branched low, and comparatively unpruned, in ten years, he would say, would be *double the size* of the others in the same time.

S. Miller, of Lebanon, objected to close planting and bushy culture, on the ground of not being able to get wagons in amongst them to haul away the fruit; but he admitted that close planting was more favorable to annual productiveness, in proof of which he instanced an orchard he knew which was originally old seed-beds, where the trees interlocked with each other, that bore well every year; while cultivated orchards near were often precarious.

Mr. Theophilus Fenn gave a precisely similar incident in his experience. The whole question was ably discussed, and as no agreement was apparent, the President proposed to close it by vote. A great many members did not vote; but those who did, gave as follows:

For 40 feet apart,	1
" 33 "	6
" 30 "	9
" 25 "	7
" 20 "	3

The grape question was, as usual, a very animated one. There was not much difference in the experience of members over last year, except that there was a very prevailing impression that the old Elsinburg was one of the very best for late keeping, and superior, in many respects, to hosts of the new ones. Rogers' No. 1, No. 15, Creveling, Tokalon, Clinton, Maxatawney, Cuyahoga, Graham, Alvey, all had numerous advocates; and one gentleman expressed great partiality for the Northern Muscadine, and Mr. Knox said Taylor's Bullitt was growing in favor in Missouri.

Several gentlemen were satisfied with Isabella, and others wished nothing better than Catawba, when it came good, which it "generally would do when not too severely pruned."

Mr. Knox thought the Delaware too sweet for a regular table-grape, but one of the best for wine.

The Hartford Prolife most members thought indispensable for being a few days earlier than Concord, but worthless after that good sort came in. The Concord, in fact, was the great grape of the Convention. It is, indeed, surprising that a grape that has been so villified and many ways abused, should have fought its way so successfully to popular eminence so soon. Flora was considered identical with Bland. Mr. Hoopes said they had been mixed together on the same plate and set before good judges, who failed to separate them.

The President remarked that fruit was often difficult to identify. He had seen Maxatawney from three localities last year, and all three were of different shades of color,—white, green, and amber color.

The vote on grapes was heavy, and was as follows:

Concord, - - - - -	25
Delaware, - - - - -	23
Elsinburg, - - - - -	12
Rebecca, - - - - -	9
Isabella, - - - - -	8
Catawba, - - - - -	8
Hartford Prolife, - - - - -	5
Creveling, - - - - -	3
Diana, - - - - -	3
Cassida, - - - - -	3
Alvey, - - - - -	2
Clinton, - - - - -	2

The grape question, in connection with wine, came next, opening by a report from the Wine Committee of last year, which stated that they had been converted by an article in the *Gardener's Monthly*,

by Mr. Hussman, of Hermann, Mo., and by some wine of Norton's Virginia from the same, which the Committee thought approaching closely some of the Burgundies of Europe.

Mr. Knox thought good eating-grapes of more importance than wine-grapes.

Most of the members seemed to have experience only with Clinton, Isabella, and Catawba. The last was considered best in quality, though its unreliability in ripening and small quantity of juice per pound of grapes was against it. In certainty of crop and weight of juice, Clinton was the favorite, and received double the votes of the Catawba. Delaware, Diana, Alvey, and Isabella received scattering votes, showing that wine had been made successfully by some members from them.

(To be Concluded in our next.)

MASSACHUSETTS HORTICULTURAL SOCIETY.

At a meeting of the Society, held January 17, 1863, the Hon. Marshall P. Wilder submitted the following remarks and resolutions on the death of the late Dr. W. D. Brincklé, of New Jersey, a corresponding member:

Mr. President, the demise of W. D. Brincklé, M. D., of Groveville, New Jersey, corresponding member of this Society, so long and favorably known to the public as a pomologist, has already been recorded in some of the public journals; but the death of a man so distinguished in this and other departments of life is worthy of a more extended notice than has yet appeared. Dr. Brincklé's death has made a wide breach in a large circle of friends, and his name and worth will be cherished with grateful remembrance by all who knew him. He was a gentleman endeared to us for his generous and estimable qualities, and possessed large and varied attainments. He was eminent in his profession as a physician, and had also a good knowledge of surgery, mechanics, chemistry, and other sciences. In manners he was peculiarly modest and unpretending, yet cordial and polite. In disposition kind, gentle, unselfish, and confiding. In taste refined, correct, and critical. In life, exemplary, conscientious, and faithful.

In pomological science Dr. Brincklé was known throughout our land for his enterprise and research. He was one of the founders and warmest friends of the American Pomological Society. He held the office of President for one term, and has ever been one of the most prominent and useful members of this National Association. For a long time he was intimately connected with the Pennsylvania

Horticultural Society, officially and otherwise, and until declining health induced his removal from Philadelphia to the country, he was zealously engaged in the production of new varieties of fruits from seed, and in collecting and bringing to notice good native sorts that had been overlooked by others. Many of the results of Dr. Brincklé's labors are already widely dispensed, but it is anticipated that many more, of a favorable character, may in time be forthcoming from the grounds of Groveville and Wilmington. Here are the trees and plants produced by his own hands from seed, and here are also other treasures, which he had collected from the different sections of our country.

Few have taken so deep an interest in pomology, and few have done so much to advance fruit-culture in our land. In his death the country has lost another of the standard-bearers of American pomology. His name will, therefore, ever be held in grateful remembrance, and his memory will be cherished as a public benefactor.

He had many friends, but no enemies.

With these remarks, Mr. President, permit me to offer the following resolutions:

Resolved, That the Massachusetts Horticultural Society sincerely sympathize in the profound regret expressed by the community in the death of W. D. Brincklé, M. D., a corresponding member of this Society.

Resolved, That the members of this Society would bear grateful testimony to his unblemished character and beneficent labors, his honorable and useful life, and especially to his unwearied devotions and research in the science of American pomology.

Resolved, That these proceedings be entered on the records, published in the papers, and communicated to the family of the deceased, as an expression of condolence in their bereavement.

TORONTO (C. W.) HORTICULTURAL SOCIETY.

We are pleased to note, by annual statement now before us, that this Canadian Society, under the able Presidency of the Hon. G. W. Allen, and Secretary J. C. Small, is in a most prosperous condition. The Botanical Gardens established by the Society brought an income of \$2459, while the receipts from exhibitions amounted to \$238. The disbursements on account of the Gardens were only \$1842, proving what we have always contended for, that, properly managed, these institutions, while of incalculable good to the whole community, can be made self-supporting.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

APRIL, 1863.

VOL. V.—NO. 4.

Hints for April.



FLOWER-GARDEN AND PLEASURE-GROUND.

The turning out of plants into the beds and borders is the thing now to be attended to. Plants should not be taken out at once, from the shade and moisture of their winter quarters to the sudden extreme of the open air; it is better to place them for a few weeks in a frame where they may be protected if necessary for a few days, or placed somewhere out of doors in a sheltered spot; the hardiest kinds will of course be set out first, the tenderest following. In planting for masses, the plants should be set in thickly. All annuals not yet sown should be done at once—the second week in May will be time enough for such tender annuals as *Thunbergia*, *Cypress Vine* and *Amaranthus*—the seeds of the *White Cypress Vine* should be sown with the crimson, for effect: some very pretty results are often obtained from this plant, trained on fancy trellises. Annuals or other seeds that have been forwarded in a slight hotbed or under protection, should be set out whenever a shower affords an opportunity. Where it is desirable to have a mass of flowers in some shady places, the *Hydrangea* or *Hortensia* answers admirably, continuing in beauty the whole season. We have seen a bed of the *English Ivy* in such deep shade with a singularly pleasing effect—there are not many plants that will thrive in such situations, and what will should be prized. As a vine for shady spots there is nothing superior to the *Bignonia capreolata* or *Golden Trumpet Vine*—clothed with brilliant flowers in summer, and maintaining its verdure the year

round. *Gladioluses* are deservedly increasing in favor; a number of new varieties have been lately added to collections—they like a rich loam, rather moist. Where *Hyacinths* or *Tulips* were planted in beds in the flower garden in the fall, and are now coming into bloom, bedding-plants may be planted with a dibble or trowel in the spaces between them, so that in a few weeks after the former have done blooming, the latter will come in, maintaining the interest through the whole season. The *Tuberose* and *Tigridia* or *Tiger Flower*, may be treated the same way—moles and ground-mice make sad havoc amongst these roots: a lump of tow dipped in gas tar and sunk a few inches in the soil in the neighborhood of the roots, will make the marauders shy of coming about. Whenever the ground “cakes,” after a rain, the ground should be lightened with a hoe and rake; it mixes the air with the surface soil, and as that is a non-conductor, it prevents the soil from losing so much moisture by evaporation, or of becoming so hot and hard, as it otherwise would.

The lawns should be mown as soon as ever it is long enough to bear the scythe, if a continuous “green carpet” be desired; when suffered to grow long before the first cutting, a face of brown stumps are left which shows at every successive mowing.

GREENHOUSE.

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 engender 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 growths 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 benefitted 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; *Devonensis*, 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.

VEGETABLE GARDEN.

Tomatoes, Egg-plants and Peppers, raised under glass and gradually inured to the open air, may be put out late in the month. For the two last prepare a sandier soil than the former. Lima Beans are also fond of a light soil; they frequently fail from being put in too early, planting the beans too deep, or the stiffness of the soil preventing their coming through easily—guard against these. Bush or string Beans also require attention; the Valentine is the earliest, the Six Week nearly as early, but more productive; and, the White Royal Dwarf the best for a crop of beans for winter use. The main crop of Carrots and Beets may go in at this time. Early in the month a few dozen of the Stowell Corn may be sown for table use, which should be repeated as often as each sowing appears above the ground. So also with Peas, Radishes, Lettuces, &c., of which a succession is desired. Cucumbers, Cantaloupes, Melons, and Okra may be sown about the third week in the month—in the southern of the Middle States.

Many plant Squash seed in their potato rows; we prefer them by themselves; they too like a very rich loam. If a few large Pumpkins are desired, they may be planted in the rows of Lima Beans: feeding on different elements, they do not interfere with that crop. Some of the fall crops must be looked after. Drumhead Cabbage, Purple Brocoli, White Cape, Granges white, and some Walcheren Brocoli, may be sown in a bed of light soil. Also, the main crop of Celery, and some curled Endive, in a similar situation. Wherever Asparagus is used for forcing, a bed of seed should be sown every year to keep up the supply. Hoeing and weeding of all crops should be attended to early, for the benefit they receive from loosening of the soil as well as to save much after labor in eradicating weeds.

These hints must be understood in a general sense; as the state of the soil is of more importance than the day of the month. The rule is to sow only after the soil has become warm and dry.

FRUIT GARDEN.

Those who have vineries will have them, at this time of the year, in various stages of growth. The "extra early" houses will have their fruit ripe; but we suppose most of our readers whom these hints are likely to benefit, will have the crop about coloring as their earliest efforts. It is the critical period, as if any check be experienced by the roots, they will not color well. Hence, great care must be taken to keep the foliage healthy. Sudden bursts of sun on tender foliage, or red spider, are the chief points to guard against. The roots in the outside borders also, if the borders have been covered with litter through winter, should be aided by having the covering removed. If, however, any of the litter has decayed, it should be left as a covering to the roots. The outside grape border should never be disturbed by digging. Hundreds of graperies are ruined by this "surface culture." No grape grower of any excellence digs up his vinery borders that we know. The importance of keeping grape roots at the surface is now so well understood, that it is very common for good grape growers to uncover and lift their roots occasionally; and to do this and yet get a first class crop of grapes the same season, is considered by the English journals an eminent achievement. With reference to the coloring of grapes, most good gardeners use the syringe very sparingly, and admit more dry air during this process than at any other period of grape growth.

Other houses of early vines, started later, have the berries about setting, as soon as which is accomplished, thinning out of the berries with a slender nosed scissors should be forthwith proceeded with. The bunches should not be handled in the operation, as it predisposes the berries to rust.

In late houses, where there is no artificial heat, grapes are often injured by the houses being kept too close. The temperature rises under warm suns, and the buds burst only to be sadly affected by our cold March and April nights. Many try to remedy this by flues; but the best way is to keep on all the air possible to keep down the temperature of the house, and where practicable, the canes may be laid down along the front of the house out of the suns reach.

In the orchard-house proper, Peaches, Nectarines, Apricots, Plums, Cherries, &c., as they grow must have attention given to pinching back the strong shoots as they push, and taking out altogether those not wanted. The green and black aphid are liable to be troublesome; light doses of tobacco smoke,

repeated at two or three days intervals, will keep them well under.

In the department of hardy fruits, the Strawberry may have any mulching thrown over it through winter, removed; the beds neatly raked over, and any that may have died through the winter, replaced. Raspberry or grape vines that may have been buried under soil in winter, should be brought to the surface, and after being suffered to lay a few days only partially covered, tied finally to their trellises or stakes. Disbudding of strong shoots of other fruit trees should be attended to at times, so as to regulate the strength and form of the tree. Attention to this at this season checks a too luxuriant growth, and saves much winter pruning.

If choice grafts have been preserved, the operation of grafting may be continued long after the stocks are in leaf, and often with greater success than when done too early.

Communications.

ROSES.

BY A CONNECTICUT CORRESPONDENT.

In northern latitudes and localities, where the Tea, Bourbon and Noisettes classes are too tender to remain continually in the open ground, an easy and simple method of growing them will be to plant in the open ground, in April or May, and with a little trouble of hoeing and weeding, will bloom profusely all the summer and fall. After the leaves are somewhat injured by frost, say first November, dig them up, prune their roots and branches, and pot in 5, 6 or 7 inch pots, if intended for blooming in windows or greenhouses; but if intended to merely keep for winter, heel them in close together in any dry, sheltered place *on the surface*, covering roots and branches with tan bark (well rotted) or saw dust, or even common earth, if the other articles are not convenient, over which place a thick layer of long manure, straw, or fallen leaves of trees; this will keep out the frost most effectually. They may be raised again the following spring on the approach of mild weather, planted in the open ground, and if placed in good, rich earth, will bloom unceasingly from June to November.

A collection of fifty to one hundred plants, treated in the above manner, will not cost any more extra trouble than about two days labor—one to take them up in the fall, and another to replant them in the spring; and with twenty to twenty-five varieties will afford a most gorgeous display of flowers in

such variety of color and beauty of form, as every lover of this beautiful "Queen of flowers" can appreciate much better than I can describe.

Planting. If in parallel beds, a good way is to plant three rows in each, about eighteen inches asunder every way for Tea, and Bourbon, and Hybrid perpetual. Remontants, Bengals and others of strong growth require more room. Here it may be well to remark that plants of all kinds of roses, now grown in very small pots by nurserymen generally, suffer not from being in *small* pots, provided they are immediately turned out in the ground or properly treated until it is time to do so. These very small plants, if well grown, make a good sized bush after the first season's growth, and at the same time give a good display of bloom.

It is always best not to mix roses of different classes in the same bed. Sufficient variety may be obtained by planting Tea exclusively in beds by themselves, Bourbons, Bengals, Hybrid Perpetuals, &c., also in beds separate from those of any other class. There is an aristocracy, not of feeling but of habit, among Roses, that will not tolerate a mixture of the "classes."

AMERICAN WINE.

BY DR. J. S. HOUGHTON, PHILADELPHIA.

Much progress appears to have been made in the manufacture of wine in the United States, within two years past. I have received from Mr. George Hussman, of Hermann, Mo., samples of wine made from Norton's Virginia Seedling grapes, which I have submitted to the examination of competent judges of wine, who all agree that it is a true wine, apparently without the admixture of sugar or spirits, and that it resembles very closely in character the red Burgundy wines of France. I obtain this opinion, especially, from Mr. Petry, the well-known dealer in French wines, in Walnut street above Third, and from J. E. Mitchell, Esq., President of the Pennsylvania Horticultural Society, who has travelled in the wine districts of Europe, and is familiar with the peculiar qualities of French and German wines. I think this is the best astringent red wine yet made in America. Fine Burgundy is perhaps the best red wine made in Europe.

I observe that the Cincinnati people will not admit that the Norton's Virginia wine is superior to the Catawba. They might, at least, admit that it is an excellent wine of a different character.

Wine from the vineyard of Messrs. Kohler & Frohling, of Los Angeles, California, has recently been introduced into the Atlantic cities, and is attracting much attention. The Hock wine made by this

firm, is similar to the white Hock of Germany, and the white, sour wines of Hungary, so much used as a daily drink by the people of Europe. In this view it is worthy the attention of grape growers and wine makers. I cannot ascertain what variety of grape is employed in its manufacture.

The Norton's Virginia wine, from Hermann, Mo., and the California Hock, may be taken as emblems of the two leading table wines of Europe,—the red Burgundy, and the white Hock of Germany.

To Mr. Henry Frank, of St. Louis, I will say that I have no disposition to undervalue the Catawba wine. I still consider the Catawba the leading wine grape of the Atlantic States, in the breadth of territory occupied by its vineyards. But I am pleased to find that wine of a different character, resembling some of the most popular light wines of Europe, can be successfully made in several localities. Mr. Hussman has sent me some wine made from the Concord grape, which resembles red Hock; and there are some fancy wines, or "ladies' wine," made in California, called Muscatel and Angelica, which no doubt will be very popular as sweet wines for occasional use at parties. Some true wine (without sugar) has also been made in this State, during the last year, which approaches the character of Hock, and is almost "good."

Thus we exhibit much progress in the difficult art of making genuine native American wine, all of which I hail with much satisfaction in view of its important economic and healthful influences.

[The California wines are made almost exclusively—perhaps wholly from grapes of the foreign varieties, which seem to thrive very well in the California climate. These therefore should produce wines equal to the best foreign ones, and are scarcely fair competitors with the native American kinds, which, so far, we seem to have to confine ourselves to in the Atlantic side of the Union.—ED.]

A PRETTY NATIVE SHRUB.

BY M., PHILADELPHIA.

No one who has seen the White Berried Dogwood, only in fence rows, where it naturally grows, can have any idea of its great beauty when afforded the scope and care of an ornamental shrub on a lawn. It is fully equal to the famed Laurustinus, of Europe, the absence of which on our lawns, we Americans are so disposed to lament. The leaves are of a shining green, about the size and shape of the Laurustinus, and indeed the flowers have the same appearance and pure white color. On the beautiful estate of J. E. Fisher, near Philadelphia, I saw some fine specimens last year, in full bloom. A word from you would call attention to a plant, I am sure, well worthy of the distinction.

MORE ABOUT THE PLUM KNOT.

BY MR. JACOB STAUFFER, LANCASTER, PA.

In your number for February, in the article by my worthy friend S. S. R., I feel challenged to say a word on the Plum Knot, as also on the fungus of the Cedar Apple.

Somewhat of a Botanist and Entomologist, the subject has interested me from both points of view; and I will briefly state the conclusions I have arrived at from personal observation, aided by the interesting experiments of Dr. Keith and others.

One thing at a time, however. First, what causes the *black knot* on the *Plum tree*? Vegetation, like animals, is subject to diseases—such as blight, smut, dropsy, gangrene, etiolation, suffocation, contortion, consumption and natural decay.

Late in winter, or early in spring, when the soil is free from snow, and greatly saturated with water, a few warm days of southern winds and a bright sun, thus warming the earth with its genial rays, waking up the dormant energies of the plants and stimulating a flow of sap, which ascends more copiously than can be elaborated or appropriated by the delicate tissues of the branchlets. The twigs being hence surcharged by an excess of juices *dropsy* may be induced, especially if subsequent cold northern winds suddenly arrest this flow. Alternate freezing and thawing occasion a diseased tissue also, and in those trees exuding a gum, like that of the *plum* and *cherry*, a viscid gummy deposit unites the double alburnum; that is, first a layer that has been injured by the frost, and then a layer that passes into the wood. These conditions are variously modified by electric or atmospheric temperature, often causing splits or chinks at certain points, forming a *nucleus* to which the sap is more copiously drawn, and inducing gangrene;—which may also arise from the too rapid growth of a particular branch, depriving the one next to it of its due nourishment, and hence inducing its decay.

The knot, however, is ordinarily caused by a dropsical swelling, cleft by frost, which degenerates into a *chillblain*, that discharges a blackish and acrid fluid, and is the direct cause of those ill-favored excrescences, the *Black Knot*.

It is equally true that the same injury may be occasioned by the bite or sting of insects, while the shoot is yet tender; and as no vegetable ulcer heals up of its own accord, excrescences will necessarily result. This accounts for the galls caused by the various gall-flies; and the analogy will readily lead men to assign the one to that effect caused by another with which he is acquainted, and accounts for

the belief that insects are the cause of the black knot on the plum, cherry, etc.

I would make one remark about my friend's removal of the knots, that "were only cleanly shaved off," that he might expect the result stated, as it only augments the disease. No ulcer will heal unless after the excision of the parts affected, they are protected from the action of the rain, air, etc., by means of a coat of *grafting wax*. This should be immediately applied to the wound, and is the only remedy known. It however often happens that the entire tree has become gummed up in its cellular tissue to such a degree as to prevent the healthy flow of the sap, and the tree dies a lingering death, being past recovery.

Much more might be said to elaborate my views, but brevity induces me to stop. Every reflecting mind will be satisfied with a hint upon which to exercise its own powers. Nor, do I mean to open a controversy, being fully aware that the larvæ of insects have been found in the fresh knots; of which the *curculio* has frequently availed itself as a nidus for the deposit of its eggs, since the fresh juices of the yet green knot answers a similar purpose to that of the green fruit: but this proves nothing as to the primary cause.

With regard to the "Cedar Apple," which is so common on the *Juniperus Virginiana*, or Red Cedar, illustrated in Loudon's "Journal of Botany," Vol. IV., plate 12, and described as the fungus *PODISOMA MACROPUS*, (Order III., *Coniomyces*, Fr., and Sub-order V., *Pucciniae*). Being a genus established by Link, among the *Cohors* of *Sporiferous Fungales*. There seems to be no question as to its character.

In reference to the fact that I have discovered the larva of a species of *Lepidoptera* in these fungoid excrescences, only proves that the parent insect has availed itself of it, as a nidus, as have the *curculio* of the plum knot, nothing more.

Since then I have also examined a species of *Pine*, (sent to S. S. R.), in which a resinous excrescence was formed on its terminal bud, in which was imbedded a *Lepidopterous* larva, very much like that found in the "Cedar Apple," apparently identical. I have not yet succeeded in raising the moth from either of them; but the character of the larva leaves no room for doubting it to be that of a *Lepidopterous* insect. Though the larva is charged with causing the excrescences, I am as yet inclined to doubt it.

In conclusion, I will add, that during the period of several summers, I have paid especial attention to, and collected numerous follicles, excrescences

caused by aphidians and gall insects, as well as fungoid productions, carefully drawing and coloring them, many of which are already described, while others may be wholly unknown, about which I may have something to say on another occasion.

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ESSAY ON THE PREPARATION, ARRANGEMENT AND CROPPING OF A VEGETABLE GARDEN.

(Read before the Pennsylvania Horticultural Society.)

BY JAMES JONES, GARDENER TO GIRARD COLLEGE.

[Our limited space compels us to present only a condensed summary of the interesting essay of Mr. Jones, which was quite full and detailed. The author had published in the "Year Book for 1860," his plan for a garden of one acre, and in the *German town Telegraph*, of March 20, 1861, an Essay on a Four Years Rotation of Vegetable Crops, to which the audience were referred for further information.—Ed.]

The best site for a vegetable garden is one sloping to the south or south-east, preferably the former, as better protected from the northwesterly winds, and the aspect being to the sun, earlier crops may always be obtained.

The soil should be naturally rich and deep, so that the long roots of beets, carrots, parsnips, salisfy, horse-radish, and the like, may easily penetrate beyond the influence of long droughts; for with good deep cultivation, plenty of well decomposed barn-yard manure, and good seed, you will not fail of good results.

Whatever the aspect, if it have not a natural slope sufficient for surface drainage, be sure to French shore (?) so that the surface water will easily run off. Plow or spade at least eighteen inches deep,—better still, twenty-four inches;—deep tilth is indispensable.

As in most gardens a general assortment of vegetables is required, they should be arranged according to the *height* of the different crops, so as to protect against the effects of too hot suns and high winds.

The ground can be worked either by hand or horse labor, observing, as an inflexible rule, never to work the soil while wet. The Girard College garden is cultivated by horse labor; it consists of four acres, divided into five parts; one for permanent crops, like asparagus, rhubarb, and herbs, and for hot-bed frames along the borders for nursing early plants for table use and transplanting; these are indispensable in every well regulated garden.

After reserving one-fifth, as stated, divide the remainder into four equal parts, for a regular rotation:

Plot No. 1. Having well worked the ground the preceding autumn, plow or spade it up, as early in spring as the weather permits, generally, in this latitude, from March 1st, to April 1st., and apply from thirtyfive to forty one-horse loads of well-rotted stable manure, broadcast, Plant potatoes in drills 3 feet apart, and the sets 8 inches apart in the drills. Cover and rake smooth, leaving them 6 to 8 inches deep, according to the lightness or heaviness of the soil. When the plants are about 4 inches high, hoe-harrow or work with a spading-fork, leaving the soil a little drawn up to them. When the flower-buds begin to break, again earth them up, and give no further care till the roots are ready to dig. At the second earthing up, the space between the rows can be planted with any of the Brassica tribe, cabbage, etc., beginning in June with Red or Purple Dutch Cabbage, White and Purple Cape Broccoli, and continue till mid-July with Flat Dutch and Drumhead Cabbage, Drumhead and Curled Savoy, Green or Purple Sea-kale, etc. The leaves of the potatoes protect the young plants from the burning sun and the black fly, which is very destructive at this season.

When cabbages or other crops are planted between the drills the potatoes cannot be gathered by means of the plow but must be dug with the spade, the tops being previously all cut off with a common grass sickle or a brier scythe. The soil thrown out in digging up the potatoes, serves, at one operation, to earth up the cabbages, which then need no further care until ready to gather, save keeping down the weeds, which should be removed as fast as they appear above ground. Thus one manuring serves for the two crops, which is a great economy. The latter crop covers and shades the ground, which is also an advantage, and but little impairs the soil. One bushel of salt added to each five loads of manure, and well mixed by spading in while turning over the compost heap will much improve it.

As soon as the cabbages, etc., are removed, say late in October or early in November, throw the soil up into deep and narrow ridges for winter.

Plot No. 2. Prepare in the fall and work over in the spring, the same as Plot No. 1, and thoroughly mix the manure with the soil, pulverizing and distributing it as evenly as possible. Lay out drills four feet apart, and plant Early Sugar and Stowell's Evergreen Corn, using enough seed to allow thinning out to four stalks in a hill. These two kinds come in at different seasons, say two weeks apart; but one working answers for both. Squashes and Pumpkins can be grown between the corn, as follows: between every other hill and every alter-

nate drill, plant the Bush or Pattypan Squash, or the Long Green or White Crook-necked variety of pumpkin. This allows working and weeding every other row with the horse-harrow. Two or three thorough weedings will suffice. Remove all suckers from the corn at the time of thinning out. As soon as the ears are all gathered, cut down and remove the stalks; the squashes will now have begun to run very much and soon cover the ground. As in Plot No. 1, the manuring and cultivation required for the one crop, answers for both. Next adjoining the corn, I invariably plant Lima beans, the ground prepared and manured in the same manner, the beans being put in immediately after the corn, in drills four and a half apart, and the poles four feet asunder. Mark out the position of the poles by means of small sticks or twigs. Make a deep, wide hole with a crowbar, and plant the pole firmly, earthing up afterwards so as to leave a ridge along each drill, on the top of which plant the beans, using enough seed to insure four plants to each pole, and thin out the rest as they appear. Draw the line on each side of the bean poles and set out lettuce plants, the earlier varieties on the sunny slope of the ridges. On the top of the ridges, between the poles, sow cucumber seed on the two outside drills, and, next in succession, sow summer radish seeds in the centre of the furrows, previously loosening the soil. If well attended to there will be little chance for weeds. As soon as the young plants appear they should be well dusted with a mixture of equal parts of lime, soot and guano, to prevent the black fly and other insects; do not wait till the insects are seen, but apply early, as stated.

When the plants are of sufficient size, gently stir the soil between them. With care there need be little loss by tramping of the radishes, which, with the lettuce, will be ready for use from the middle to the last of June. The beans will then require to be put around the poles; if they are too smooth, a few hacks with a sharp hatchet will sufficiently roughen them to form a support for the vines. When they commence to flower freely, pinch off the ends of the leaders; this will cause more lateral shoots to form and much increase the crop.

I have recommended that tall-growing plants, such as Lima beans and corn should be planted near each other. The corn grows more rapidly than the other plants, shades them from the sun and assists in keeping off insects. With Lima beans in close proximity, high winds have but little injurious effect. Thus planted and treated, with the mixture advised, I have never suffered loss, either from storms or insects.

About the last of October, these last crops will be ready to clear off, and the ground should be ridged up as before described.

Plot No. 3. Prepare as prescribed for previous plots, well rake or harrow it and mark off drills, one foot apart; plant every four drills with onions and every fifth one with some small salad, as Pepper Cress, White Mustard, Long Scarlet or Red or White Turnip-rooted Radish, which come up much earlier than the main crop. Extra Early Beets, as well as Spring Spinach, should also be sown in four drills, like the onions, leaving the fifth for Egg plants or peppers. Sow also Early York and Sugar-loaf Cabbage in drills, two feet apart each way.

The plants are all worked alike; the cress, mustard, and early radishes will be ready for use by the time the main crops require more room. As soon as the onions, beets and cabbages are gathered, prepare for planting celery, which will occupy those drills previously sown with the radishes, etc. On the ground occupied by the cabbages lay out drills five feet asunder. Lay out the trenches eighteen inches wide; remove the earth one spade deep and work in, deeply, with the spade, four inches of well-rotted manure, and dibble the plants in about 8 or 9 inches apart in the drills. The seed should have been previously sown in the border about March 15th to April 1st, and when three to four inches high, pricked out into a new bed, after shortening both tops and roots. Thus treated they make thrifty well-rooted plants with short upright stalks, and seldom need shading after being transplanted, especially if set out just before a rain. As soon as fairly rooted, stir the earth around the plants gently and with care not to disturb the roots. Have ready two rods each 16 feet long, 1 inch thick and 2½ wide, and when the plants are six inches high apply these rods, set on edge, to each side of the row of celery, and earth up against the rods, which serve to keep the dirt from getting into the heart of the plants and causing them to rot; press the earth gently with the hand, lift the rods, and repeat the operation along the trench till all are thus served. Then carefully taking each plant in one hand, mould up with the other and finish off with the spade. After about three weeks, if good growth has been made, repeat the operation, rather more heavily than before; a third moulding up will be required, at a like interval, and, if the season prove late, and the plants still growing, it may be advisable to earth them up for the fourth time, leaving only three or four inches of the tops visible. In this manner it will endure without injury 6 or 8° of frost. After two weeks take up the celery on a fine

dry day, and set upright in drills, as when growing, placing the plants close to each other. Next, place against their sides about three inches of earth, and another layer of celery, repeating the process until the trenches are about eighteen inches across the top,—they will be much wider at bottom,—dress up well with the spade, put long stable manure on each side, and cover with two wide boards like an inverted trough. Over the boards throw long litter, straw, leaves or the like, and lay a few light poles on the top to keep all in place.

Another method for long keeping celery, is to lay them in rows, three or four plants wide, on a sloping piece of ground, commencing at the highest point and resting the tops of each row upon the next upper row, about two-thirds of their length, the reverse of thatching or a shingled roof, and so continuing down the slope till the trench is filled. Next strike a line eight inches from either side and mark it off with a spade, cutting out and laying the dirt on the sides of the celery, and putting the finest on the top, forming a sharp ridge, thus *A*, smoothing it off with the back of the spade. On the approach of frost cover with long stable manure. Either of these methods is effectual and simple.

If desirable, on that portion of the plot where early cabbage and spinach were planted, in place of celery you may set out tomatoes, or egg-plants between every four drills of the spinach, or every two drills of the cabbage, four feet apart in the rows. Peppers of different varieties may also be grown, three feet apart. The last cultivation of the soil among the early cabbages, beets and spinach, about May 1st, prepares the ground for other crops. Okra, nasturtions or martyrnia and horse-radish, can also be sown in the same way; the latter will be ready to gather about the last of October or early in November. The spring crops on this plot being of uniform height, the cultivation and weeding are easy and simple; as the second plantings are made while the first are still growing, the young plants are well shaded from the sun until all are well established. The ground is now ridged up for winter as before laid down.

Plot No. 4. Supposing this to have been manured and cropped the previous year, like the other three plots, no manure should be applied on that portion intended for peas or snap beans, but instead use a mixture of air-slaked lime and salt, in the proportion of 10 bushels of lime and 5 of salt, per acre. It should be well plowed or spaded in, raked or harrowed smooth, and the drills laid out for peas, four feet apart. The early and late varieties should all be sown at once. The Extra Early May, Prince

Albert and Champion of England, are the varieties preferred, and for a fourth sort use Bedford's Imperial or some other Marrowfat. These will come into use at intervals of about two weeks. Sow in drills four inches wide and four deep. One quart of seed will plant twenty-one yards of such drills. When about four inches high loosen and earth up with a broad hoe and earth up a little; then rod or bush them, if in a small garden,—if in field culture two weeks later, harrow a second time, and use no rods. Snap beans can be grown in the same manner, and as soon as over, pull up the vines, work over the ground and sow a second crop which will come in about the same time as the Marrowfat peas.

For all except these two crops manure precisely like the former plots. It is of the first importance that the manure for the following crops be short and fine, and most thoroughly worked in and raked over smooth. Lay out drills one foot apart, and sow alternate rows of Long Radish Beet or Blood Beet, and early or late Radishes, until you have the quantity required. In place of beets sow carrots, parsnips, salsify, etc., alternately with radishes, all receiving the same culture. As soon as the seeds are up stir the soil gently every two weeks. The beets, carrots and salsify for winter use must be sown about April 15th to May 1st; the summer radishes will be ready to pull in four or five weeks. Now thin out the beets, etc., hoe over the drills and in two weeks loosen the ground full six inches deep with a spading fork, taking care not to disturb the roots, and keep the surface clean and mellow until the crop is ready for gathering in October.

After cleaning off the peas and beans I have the ground well spaded or plowed up, and three hundred pounds per acre of Phaine applied, harrowed or raked, rolled, and the surface then ridged up 2½ feet apart, the ridges lightly pressed down and drills laid out upon each ridge. Turnip seed is then sown in them and slightly covered. When 4 to 6 inches high the plants are thinned out, leaving them 4 to 6 inches apart according to their early or late sowing. If wanted large, and the season should prove long, the greater distance is best. If the ground be not all wanted for turnips, plow and manure as if for them, but sow spinach or snap beans again for fall use. Finish up the plot in the fall the same as all the others.

Having thus stated the method of cropping, it only remains to explain the rotation pursued.

The crop planted on Plot No. 1 the first year, consisting of potatoes, cabbages, etc., is put on Plot No. 2 the second year, on No. 3 the third year, and so on in regular succession, returning to the original

plot after a four year's rotation. In like manner the crops grown upon No. 2 the first year are transferred to No. 3 the second year and so on.

This method has been pursued by me for the last thirteen years on the same four acres of ground at the Girard College, with no diminution either in the quantity or quality of the crops. The family of the college, consisting of nearly five hundred persons, has been liberally supplied from this four acre garden, with every kind of vegetables except potatoes, which are a large item of consumption. I know of no other person who practices the method above described. It provides for a general rotation and change of all the crops, which horticulturists and agriculturists agree to be the true system of cultivation. The culture given to the first crops is an admirable preparation for the next following.

It is worthy of note, that all the vegetables required to be preserved through the winter are pitted on the same plot where the Lima beans, corn and squashes will be planted in the following year: it being the last one required to be planted in the spring. Vegetables pitted in the open ground keep fresher, firmer, and sweeter than if stored in a cellar. The land too, is much improved by the deep spading and throwing up of the soil, and the frost, penetrating deeply into the ground around the pits renders it looser and more friable for the coming year. A large quantity of manure is used to cover and protect the pits from frost; and, when removed in the spring, it is piled up, and turned over at least once before using it. It thus becomes well decomposed and fine.

No plans of walks, borders, etc., have been given, nor has it been attempted to present the details of cultivation of every variety of vegetable, as neither time nor space would permit. It is hoped that the experience of twenty-two years in the vegetable garden, as herein set forth, may prove instructive and profitable to many.

HARDY CHERRIES.

BY MR. J. G. BUBACK, PRINCETON, ILL.

I have just been through a portion of my orchards with a view to determine the condition of my trees and the prospect for fruit the coming season, and I found, upon examining the fruit buds of a number of varieties of cherries, the following result, (by dividing the buds in the center), I find them uninjured, partially killed and entirely killed, in this order:

Early Richmond, English Morella, May Duke,

Belle Magnifique, Rumeys Late, Early Purple Guigne, Dutchesse Pallnau, Arch Duke, Royal Duke; all uninjured.

Royal Duke, Carnation, Reine Hortense; partially killed.

Governor Wood, Napoleon Bigarreau, Yellow Spanish, Belle de Choisy; all killed.

For the benefit of such as have not given this subject much attention, I would say that this result was produced on the night of the 13th of February, when the mercury fell to 10 or 12 degrees below zero, followed by a cloudless day. If it had been followed by a cloudy day the injury would have been much less.

I could add that I have tried many other varieties belonging to the Heart Bigarreau such as Tartarian, Black and White, Coe's Transparent, &c. &c., in nursery and orchard, and not only the buds but the trees themselves have succumbed to the severe climate.

About one-half of the peach buds are killed in exposed situations on the prairies, &c. In cities and towns, where more protected, much less are killed.

If you deem the foregoing of any importance to the readers of your invaluable journal, it is at your service. I feel like doing something, if possible, for the good cause of Horticulture, for as man's fall was in, and his expulsion from the garden in consequence, so must his restoration to his lost estate lead through it.

[It is valuable knowledge that teaches us the hardiest kinds of fruits to plant. We should be glad of similar notes from other localities. We doubt though whether it is in all cases the sun that causes the trouble, though it is difficult to account for it on any other hypothesis.

We saw recently a nursery where every two year old Pennock apple tree had the bark split on the south-east side from the ground, two inches upwards, during the cold spell of 4th and 5th of February. No other kind seemed injured. No record of the weather is kept there; but six miles distant a register table is kept for the Smithsonian Institution. At 7 A. M., on the 4th, the thermometer was 4°; on the 5th 3°; on the 6th 50°. Here was a great change. But the same register shows that the weather was cloudy the whole time and until the 10th, when it was clear for a few hours at mid-day. As the register shows it to have been *very* cloudy all that time, there is no doubt it was cloudy also six miles off. Rapid thawing may have done the injury, but why it should be confined to the south-east is the mystery.—ED.]

CIRCULATION OF THE SAP.

BY D. MITTENEAGUE, MASS.

I have been patiently waiting for your long promised views upon the circulation of sap. It seems that your correspondents have dropped the subject, and you may have forgotten your promise. This being the season for making observations, many would like your views upon the subject, so that they may be able to test them by experiment. A few facts in regard to the flow of sap from Sugar Maples, may not prove uninteresting to some of your readers.

It is acknowledged by all sugar makers, that in order to get a full flow of sap, the ground must be covered with snow, and also that the days be warm and the nights cold.

To my mind this indicates that the roots that are below the frost collect sap through the winter. After the ground is in a state so that the surface roots can act, and the warm sun has opened the cells of the tree, this sap will ascend. A cold night suddenly checks this flow and the pressure from below forces the sap out of the vent made in the bark. If the nights are warm and the ascent of the sap is not checked, little or none will flow out.

If there is no snow on the ground, and the night is cold enough to check the sap in the surface roots and lower part of the trunk, the result will be the same. I believe that the sap ascends from the roots through the inner bark of the tree, the water passing off through the leaves, and the substance that was in solution together with the carbon inhaled by the leaves, descends through the sapwood, and also after the first flow of sap through this inner bark. If we strip the bark from the white Pine in the spring, we find a thin, sweet liquid; a few months later, after the water has been evaporated, we find a thin, pitchy substance.

If any of your readers are so situated that they can cut a white Pine at different times in the year, and report the quantity of sap or pitch that flows each time from the sapwood, I think it might throw some light upon this subject.

What the force is, whether light, heat, electricity or capillary attraction, that *before the leaves put forth* makes the sap ascend, I would like to see freely discussed in your valuable *Monthly*.

[So many subjects press on our attention, that we are unable to refer to as many as we like without intruding on ground we devote to other matters; but we shall not forget the subject hereafter; and, in the meantime, leave it to the handling of some of our correspondents.—ED.]

GRAPE GROWING IN NEW ENGLAND.

BY JAMES S. LIPPINCOTT, HADDONFIELD, N. J.

The attentive readers of horticultural journals will have remarked the increasing attention paid in reports by individuals and the active committees of the numerous Fruit Societies, to the adaptation of certain kinds of fruits to certain sections of our wide and varied country. While much stress is laid upon the importance of a proper selection for each section, no one, that I am aware, has attempted to advance any sound theory by which those who seek information on this subject may be guided. As yet we are compelled to accept the opinions of growers only, who may, in their respective sections, have met with success or failure under circumstances which may be peculiarly local, perhaps confined to the farm of the reporter, and unknown to his immediate neighbor. In the neighborhood of the minor lakes of western New York, a difference of few feet in elevation and exposure is all that has been observed between successful and unfruitful vineyards.

It must have become apparent to those who have reflected upon the subject, that there are certain definite laws affecting the growth of plants and fruits, and that the various sections of our country are adapted to their production in greater or less degree of perfection from the regular operation of these laws. These laws may be local in their influence from peculiarity of soil; geological, depending upon the presence or absence of certain rocks over a larger area; or climatic, arising from exposure, elevation, dryness or humidity, or varied, regular or extreme temperatures.

The importance of definite knowledge of the fitness of certain varieties of vines for certain regions, has become painfully apparent to all who have for many years failed to obtain fruit in northern latitudes, from plants which they have trained and nursed with tender care and hopefulness, to find at last that they have started wrong, and that their efforts are futile. When a Wilder states that he has not had a ripe Isabella in his garden near Boston, for twenty years, and a Hovey has not for twenty-four years succeeded in ripening the same grape in the same section; why should unskilled cultivators continue to waste their efforts upon a variety so incorrigible. "But may not I succeed," says an ardent grapist, "who am removed from the influences of the ocean winds, safely ensconced in the interior, on the high southern side of a mountain, open only to gentle breathings from the south?" Do not deceive yourself my fond enthusiast, you cannot grow the Isabella in perfection in any part

of New-England, at a very few localities excepted, and these not upon the sunny slopes of any mountain side, nor in the interior sheltered from sea-side storms. Nor can the Catawba be ripened in the open air in any part of New England, however favored.

If then, these varieties, so much esteemed by their respective admirers, and when thoroughly matured certainly leaving little to be desired by the lovers and judges of fine fruit, cannot be ripened in New England, where shall we turn for the kinds adapted to endure our short summers, rigorous winters, drenching rains and inconstant climate? Are there any grape vines hardy throughout New England? "The Lenoir is hardy in New England," says one who has written much on grapes and who ought to know. Is New England a small locality, whose climate may be described in a few words, or pronounced fitted throughout for the production of a certain grape? Is it not rather a vast territory, extending through six degrees of latitude, from mild and equable Nantucket on the south, with a mean annual temperature of 50°, a mean known in many parts of southern Pennsylvania, and seldom falling below zero in winter, to the mountains of Maine, almost to the valley of the St. Lawrence, and including the regions of New Hampshire, where wide extremes prevail, and an entire day has known a temperature of 32° below zero and 40° has been indicated below that point so suggestive to southern feelings of the last degree of hyperborean cold.

The loose mode of expression heretofore common may with propriety be dispensed with, and some definite understanding arrived at respecting the adaptation of New England to vine culture.

There are classes of grapes fitted by their hardiness and early ripening of wood and fruit, to endure the climate, and remain healthy and productive from year to year, except under the influences of highly unfavorable and exceptional seasons of extreme humidity or dryness, or of unusually late spring or early autumn frosts. But no class of grapes, nor any one variety of grape, is fitted to endure the climate of New England throughout its length and breadth. Nor while its northern sections are totally unfitted for vine culture, will all parts of its southern border ripen even the hardest kinds.

How then shall we learn where the kinds adapted to northern culture may be planted with assurance of success? Inquirers into the peculiarities of the climate in which the wine grape is ripened in the highest degree of perfection, have learned that a certain mean temperature for the four months

during which the grape is forming and maturing its fruit, is absolutely necessary to the production of grapes, having all the qualities desired by the vintner, or the consumer of the fruit in its natural state. Also that if an average temperature is not maintained nearly as high as that necessary to perfection, the vines will not even ripen inferior fruit. The districts of middle Europe, where these temperatures regularly occur, are, as definitely ascertained, as are the districts in our own land, where rice can be grown, or where the sugar-cane may be planted with certainty of a profitable return in sugar.

Not only can we define with approximate correctness the northern limits of vine culture in the United States, but the bounds beyond which our several classes of grapes cannot be successfully grown, can be delineated with a close approach to accuracy. If the reader will open before him the map of the New England States, and with pencil in hand place the point upon Gardiner, Maine; on the Kennebec river, trace a line south-westwardly to Great Falls, on the Piscataqua, following the trend of the coast a few miles therefrom northwest of Portland and Saco, and from Great Falls continue the line westwardly to Concord, New Hampshire, and thence west and northwest to the valley of the Connecticut, as high as Lebanon, he will have defined the limit of grape culture in Maine and New Hampshire*. The very hardest varieties of native grapes, and those only, will ripen in Maine and New Hampshire, as high up as this line in favorable seasons, at places having a moderate elevation above the sea. As this elevation is increased a few hundred feet, or the exposure becomes more northward or eastward, these varieties will not mature their wood or fruit.

The position of this line in southern Vermont has not been accurately determined, but it is presumed that, owing to the extension of the Green Mountain range beyond the southern bounds of the State into Massachusetts and Connecticut, this line should descend the valley of the Connecticut river on the western side, at greater or less distance therefrom, depending upon the elevation of the region. Williamstown and Westfield, Mass.; West Cornwall, Wallingford, Middletown, Columbia and Pomfret, Connecticut; are some of the places that may be named as located upon this line, which if thus traced will be found to curve in upon itself in a spiral coil. This arises from the fact that the po-

*Intimate knowledge of the topography of the country would enable us to trace the line with precision; the present is but a near approximation or index to the general position of the bounding line.

sition of the line is determined by the elevation above the sea of the places noted. Its extension from west to east, therefore, does not imply that the territory north of this line in Massachusetts and Connecticut, is unfavorable to grape culture. As we follow the line southward through Vermont, Massachusetts and Connecticut, we find it at high elevations along the mountain side, and should bear in mind that it is not there a line limiting culture to the east or west, but indicating points at which a mean temperature exists during the grape season, unfavorable to the less hardy grapes, and that all places in these States, having the elevation of the places named as located on this line partake of the same peculiarities. Thus, Williamstown, Mass., is nearly 800 feet high, and is quite too cold to ripen any cultivated grape; Westfield is also upon the line, and from its too low mean temperature unfavorably situated, though its height we do not know. West Cornwall, Connecticut, is 1000 feet above the sea, and will not ripen tender or half hardy grapes. Wallingford and Middletown are lower and may grow very hardy kinds to perfection. Columbia is more favorably situated, but Pomfret is again 1000 feet high, and too cold for the very hardiest native varieties; while Princeton, Massachusetts, is 1113 feet above the sea, has a mean summer temperature nearly four degrees lower than that of Boston, and is less favorably situated for grape culture than some places far "down east" in Maine.

The line above described passes through those places at present known to have a mean temperature of 65° Fahrenheit, for the months of June, July, August and September, the months during which the grape is forming and maturing its fruit in New England. If the temperature for this season falls below the average of 65°, no cultivated grape will ripen. Below this line thus traced through southern Maine, across New Hampshire, and extending into Vermont, the Delaware, Clinton, Perkins, King, Logan, may be successfully cultivated, except where in Vermont, Massachusetts and Connecticut, an elevation of 700 feet and upwards above the ocean is attained, proper attention being at all times paid to those circumstances necessary to success to be hereafter hinted.

On either side of the line thus traced in Massachusetts and Connecticut, we find a district lying lower and therefore more favorable to grape culture. As there are no peculiar local influences, as expanse of water, modifying the effects of high northern latitudes, a hardy class of grapes only can be cultivated in this region, though a class requiring

a longer summer for maturing both wood and fruit, than that before named. The general lay and trend of this district may be indicated thus: Pencil in hand and map spread as before, place the point upon Manchester, Mass., and trace a line through Londonderry, New Hampshire, Cambridge, Boston and Bridgewater to Nantucket, Mass. Again from Manchester, Mass., trace a line nearly south to a point a little below Worcester, and thence southwest to Springfield. Again, from Cambridge, Mass., trace a line southwest through Mendon, northwest of Providence, R. I. to Norwich and Saybrook, Conn., and along the coast to near Georgetown, and thence west to the State line. This line, if continued, would ascend the valley of the Hudson at some elevation in the lower part, descend to the level of the river at Kinderhook, and follow it to Spencer, there entering the valley of Lake Champlain, continue therein almost if not quite to Montreal. Places on this line have about a mean annual temperature for the grape season of sixty-seven degrees Fahrenheit, and these two lines define the two kinds of climate as respects the temperatures adapted to the cultivation of certain classes of hardy grapes in the New England States.

In the region indicated as lying generally in lower latitude, and having a lower elevation, and therefore more favorable from the higher heat and longer summer, a less hardy class of grapes will mature in addition to those before named. Thus York Maderia, Marion, Oporto, Northern Muscadine, Hartford Prolific and Concord, may generally be ripened throughout this district, at proper exposures on soil properly prepared, &c. In favored localities, Union Village has ripened; also Rebecca and Diana have succeeded on dry, warm soils with generous culture, fair summer exposure, and careful winter protection. In the valley of Lake Champlain, the summer temperature is as favorable as that of most places on the Connecticut coast, though much farther north. In gardens, the Delaware, Northern Muscadine and Hartford Prolific, are successfully cultivated; but as we approach a higher latitude, as at Burlington, Vt., the Concord, owing to the short summers, is deemed uncertain. Recently the Adirondac has been introduced as a substitute for the Isabella, as it ripens at Plattsburg, New York, two or three weeks before that variety, thus escaping the early frosts, it may prove valuable in the more temperate districts of New England. Being about as hardy as the Isabella, it must be covered in winter. Rogers' Hybrids (the early ripening numbers) are pronounced by M. P. Wilder, as having withstood the effects of winter cold in New

England, in places where Isabella and Diana have been much injured. No. 4 of Rogers' Hybrid, is described by the same authority as perfectly hardy, and in the opinion of many judges, No. 15 of the same series, is the best out door grape if it continue to do as well as at present. Its promise is excellent, ripening as it does before the Concord and Diana by its side; but let no one attempt to raise it above or beyond the line of 67°

If the Isabella can be ripened anywhere in New England, it is in the extreme south-western corner of Connecticut. Here the season is prolonged, and a mean summer temperature prevails similar to that known throughout much of the interior and south-eastern portion of Pennsylvania. Where the Isabella will ripen many other varieties will succeed. Diana, Hydes' Eliza, Maxatawny, Union Village, Cuyahoga, Rebecca, Creveling, Rogers' Hybrid, Elsinboro', Lenoir, and a few others will mature their fruit below the line of 70° for the grape season, which passes through the south-western extremity of Connecticut.

Thus it appears that latitude constitutes a very uncertain index to the character of the climate of New England, and we are not to suppose that a variety of grapes successfully grown in Boston, may with equal success ripen throughout the length of Massachusetts to the western bound, nor even at all places south of the latitude of Boston. That city and its neighbor Cambridge, appear to be warmer during the grape season than New Bedford, where only the very hardiest kinds can be matured. Perhaps the effects of chilling winds from the sea are felt more keenly at the latter place. Vines trained upon a trellis are here often seriously injured by the strong cutting sea winds. This some ingenious cultivators have prevented, by training the vines above a level mass of stones, a foot or more in thickness, and of extent corresponding to the dimensions of the trellis. Vines thus trained ripen earlier and escape injury by the wind. This is the mode successfully practised in Palestine and at El Paso, on the Rio Grande, in Mexico.* Worcester is in nearly the same latitude as Boston, but its elevation upwards of 500 feet above the sea, reduces its mean temperature for the grape season below that of Boston, and its cool, damp air, though it render it desirable as a summer retreat, is unfavorable to earliness. At places a few miles inland on lower ground, strawberries and other early fruits ripen two weeks before those at Worcester. It is apparent from the limited choice of varieties

of native grapes open to the grower in New England, that this is not the favorite home of this best of fruits, Vineland, though it may sometimes be termed. The Fruit Committee of Massachusetts Horticultural Society, for 1860, reported it as their opinion, "that the cultivation of hardy grapes has thus far been nearly or quite a failure." Much of this ill success has doubtless arisen from an unwise selection of kinds and ill chosen locations. If our remarks will prove useful to any grape growers in warning against planting half-hardy and tender vines, where the very hardy only can succeed, we shall not have written in vain. Another cause of ill success attending this culture, may be ascribed to the unfitness of the soil, imperfect drainage, and inattention to summer shelter from winds, and exposure to sunshine and winter protection, by covering with earth, &c. A heavy, unctuous, black loam, abounding in vegetable matter, upon a clay sub-soil, cannot produce an early ripening grape, nor a well ripened wood on many varieties of late growing kinds. A sandy loam, not very rich, on a gravel or stony bottom, proper shortening in of the late growing kinds, low training, and covering in winter with earth or boughs, at localities favorable from their low elevation above the sea, and below the line bounding grape culture on the north, and on the mountain side in middle and western Massachusetts and Connecticut, cannot fail in the average of seasons to meet with more success, at least, than has heretofore attended attempts to raise good out door grapes in New England.

Throughout the range adapted to very hardy grapes, the "Delaware" bears the palm as the best of all varieties yet introduced. It ripens its wood early, is almost perfectly hardy to the very northern limit, quite so in the lower range of the district, and even on the utmost bound it is not killed to the ground if not covered. It has no superior for the qualities required in this section. If any planters have been disappointed in it when grown within the limits defined in this paper, it has been because they have purchased vines forced injudiciously under glass, and grown from young immature eyes or buds. Such plants seldom make good vines, their constitutional vitality having been much impaired by this continued forcing under unnatural conditions. The only vines fitted to succeed under circumstances in the least unfavorable, and adapted to a climate such as that of New England, are layers from very strong vines or plants from *out door ripened* eyes, that have been started with a gentle bottom heat, and turned out into the open ground as early as the season will admit, and properly cultivated in a soil fitted to

*See *Country Gentleman*, Vol. XX. No. 4, page 57, (for July 24, 1862.)

produce a strong, healthy and abundant development of roots and branches. Such vines can be had and are greatly to be preferred to all others.

It should be generally known to buyers of the "Delaware," that the original vines are growing in the State of New Jersey and Pennsylvania, near the Delaware river, and are now upwards of fifty years old. Also that the stock obtained directly from these old vines is offered for sale at as low rates, quality being considered, as that from those forced through a dozen hot-house generations, and requiring many years to attain the size and strength that the strong out door grown attain in one year. The writer speaks from dear-bought experience of the worthlessness of some of the forced spindling straws called "Delawares."

Those who reside at places indicated in the above paper as favorable to the Delaware, Concord, &c. will not have reason to complain of indifferent growth of their plants, should they select the hardy stock grown from wood taken from old and well established vines; and those growers who disregard the indications of temperature, exposure, soil and treatment, here pointed out, and act counter thereto, will not succeed with any kinds of vines worthy of cultivation, however hardy and however produced.

The writer would respectfully solicit correspondence with the grape growers of New England, narrating details of success and failure, &c., for the more full elucidation of the subject of which the foregoing is but a meagre outline.

THE GRAPE IN THE WEST.

BY DR. L. FRITSCH, EVANSVILLE, IND.

All that I have read about the different grapes in eastern journals, cannot be applied to it here on the lower Ohio. One degree farther south than Cincinnati, we have already a different climate. The fate of the Delaware will be decided this year. Our summers are long and hot enough to ripen every grape, and many that have received in the east so great praise are worth nothing with us. The Catawba is the only one in general cultivation, and gives a great harvest where the *curculio bacchus* does not molest it. The Isabella is the most miserable of all. Many of the foreign grapes do well here in the open air, but they must be used to a severe climate like that on the Rhine. The plants we receive from the vineries of England, are spoiled children and do not thrive as well; thus it is with many other plants, like the gooseberry. Import sound plants from German vineyards, and you will

have better success with its cultivation here in open air. I prefer German plants, because the nurserymen there are reliable, educated, and the climate is colder and not so damp as in England or France. The Rogers' Hybrids are great growers here, and we will not have fruit from it before next year. I have many seedlings that will bear this year for the first time. After many years of experience I have adopted a new method of raising seedlings. My seedling grapes have grown the first year from seed from 5 to 6 feet, and the second from 16 to 20 feet, and will bear fruit the third in the open air. If it can be of any utility to your readers I shall communicate it. [Pray do.—ED.]

Why do the eastern nurserymen not discard all the insignificant worthless trash of fruit, and grapes in particular? Is humbug and refined theft their only object of life? It seems so to me. The legal fraud has so pervaded or soaked, you may say, this society, that their foul smell is perceived all over our globe. Why do you not see our grand agriculturists, with their little brains, animated by any great idea? Horticulture must solve the great problems of national economy; it is the grand practical science for the life of man.

Horticulture is also model agriculture. Let us take one important step in regard to enlightenment of agriculture among our people. Distribute gratis, by our Agricultural Department in Washington, works of Pomology, Horticulture, Agriculture, and the best there is. Let every man have such books for small, trifling prizes; that is better than to distribute them for nothing by our Congressmen. We find our agricultural reports generally in our out-houses, and they are really not worth anything else. What is a statistical fact worth at which we have arrived through the source of men that cannot distinguish a root from a branch of a tree?

Which is the best work on grape culture? It would do well to tell your readers that it is Kecht's. Whoever is able to read a little German, he may buy that small work. Kecht is the Humboldt among the writers on the grape. It is so much superior to any that has been published here and elsewhere, that all the other works sink into insignificance in comparison with it.

Who can translate it? I have no time for it.

[We seldom express dissent from our correspondents' opinions when they do not accord with our own, unless we believe them to be very injurious. We prefer to invite full discussion than to nip it in the bud. In this article we should find much to express dissent from, as well as many suggestive hints to commend. Why, for instance, the Ag-

ricultural Bureau should not distribute agricultural works as well as agricultural seeds, is a very pertinent enquiry.

We have never seen Kecht's book. If any friend will send us one by mail, we will return it with thanks for the favor.—Ed.]

“DESPISE NOT THE DAY OF SMALL THINGS.”

BY MR. WALTER ELDER, PHILADA.

One of the best sermons I ever listened to was from the above text, which is applicable to my subject.

BIENNIAL AND ANNUAL FLOWERS.

The very extraordinary improvements made upon them within the past ten years, would surprise as well as delight those who are not in the habit of seeing them. The sizes and numbers of the petals of the improved Genera, compared with the old sorts, are like a silver dollar piece to a dime, and a full egg to an empty shell; it would occupy too much of your valuable space to mention all of them so I will only notice a few.

Of biennials, see the brilliant colors and dazzling beauties of the improved varieties of *Autirrhinum*; of all shades, from pure white to dark crimson, and the enlarged sizes of their bloom. The same with *Aquilegia* (Columbine), Canterburybells, Foxglove, Sweet Williams, &c.; of double sorts, there are Sweet Williams, Wallflowers, Gillyflowers, China Pinks, of sorts, and many others as double as the finest roses, and of shades from white to maroon spotted, striped, blotched, &c., in the most beautiful manner,

Of annuals, what can be compared to the *Camellia Balsam*, as double as a rose; no wax work nor any other imitation of man, can compare with it in rich appearance and dazzling beauty. The white and scarlet spotted is unequalled among flowers. Larkspurs, perfectly double, from white to indigo blue. Phlox Drummondii, of all shades and enlarged blooms. The same with Portulacca, (German improved), Chinese Asters, &c. Of Eschscholtzia, deep and pale yellow, white, &c.; Pansy, commonly called “Johnny Jump Up,” with petals as large as a silver half dollar piece; from white and yellow to maroon, and as rich as satin velvet. The improved varieties of Collinsia, Gaillardia, Gomphrena, Iberis, Papaver, Senicio, &c., and the improved double Zinnia, Petunia, &c., and the new sorts of Verbena, and hundreds of others are worthy of all praise.

New or Rare Plants.

NEW LEAF PLANT—*Fuchsia Metcor*.—We have already one leaf plant among the Fuchsias—a white variegated. Here we have a new style—leaves yellow and shaded with bronze. Unlike most new things to which we call attention, in order that our florists may import and propagate for our readers, this is already for sale, as we notice in Mr. Henderson's advertisement in our last number.

BEATON'S GOOD-GRACIOUS DOUBLE BEDDING PANSY.—The long-lost Double Purple Pansy has been frequently alluded to in our columns, and was figured and described in the *Florist and Pomologist* of December last; but that our readers may form a correct idea of this highly ornamental plant, we have now the pleasure of giving them a representation of its appearance:



The stock of this plant is in the hands of Messrs. Carter & Co., of Holborn, who have given it the name of “Beaton's Good-gracious Double Bedding Pansy,” by which appellation we trust it will become as generally known as it deserves. The outer or guard petals of the flowers are about the size of a good Pansy, and the inner gradually diminish towards the centre, forming a double flower. There can be no question that it will form a valuable plant for beds and borders, more especially as we understand that it has proved a profuse bloomer.—*Cot. Gardener*.

TROPEOLUM BALL OF FIRE. Raised by Mr. Harman, of Uxbridge. Profuse bloomer. Flowers intense scarlet.—*Floral Mag.*, pl. 129.

The Gardener's Monthly.

PHILADELPHIA, APRIL, 1863.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

For Terms of Subscription see second page cover.
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Volumes 1, 2, 3 and 4, furnished for \$1 each.

DOES SOD NECESSARILY IMPOVERISH AN ORCHARD?

In our January number, we offered a few remarks on the position of our contemporary, the *Horticulturist*, on orchard culture. In the last number of that journal, it replies to some of the "misapprehensions" of "our contemporaries." As we believe the *Gardener's Monthly* was the only one of "our contemporaries" that specially referred to the course of the *Horticulturist*, we may be pardoned for assuming that the recent article was intended for the especial benefit of one contemporary in particular. Our friend observes that "we (the *Horticulturist*) do not belong to that class of men who delight in loud words," from which we infer that our remarks gave offence. We are sorry they have done so. Our journal belongs to no class of "men," and is not in the habit of talking "loud," or in any other way; but in view of the great national importance of the subject, we did wish to express our views in as forcible a manner as possible,—without any intentional disrespect to our contemporary, but with all the earnestness the subject demanded.

The *Horticulturist* now gives us what it terms its "thirty-nine articles of faith" on orchard culture. Unfortunately for the implied comparison, nine-tenths of the religious community dissent from the thirty-nine articles; and if no better fate awaits the idea in its pomological character, it will not be surprising if that, in this Quaker city at least, contumacy should already begin to appear.

It is the result of the *Horticulturist's* experience that the perfection of orchard culture is to have the ground entirely uncropped,—it should be continually cultivated, but nothing but the fruits—not even a blade of grass—should ever be permitted to grow among the orchard trees.

Such an orchard never came within our experience, and we have strong doubts that it ever will. It is very pretty as a theory, but we have a suspicion that the warmest advocate of this "belief"

would hesitate before he practiced it. It is very much like the belief of a certain manufacturer of a patent lightning-rod, we know of. He was pressing its perfect security on a celebrated ship owner. It would carry the electric fluid down the ship's mast and away in the most satisfactory manner. "May I put part of a cargo of barrels of gunpowder against the mast in safety?" asked the ship master. "Most undoubtedly," was the reply; but as a measure of precaution I do not advise it to be done if there is room for it elsewhere.

And thus it is that in the "last trying hour" mere "articles of faith" desert us, and a lingering suspicion that "all is not right," will steal over us in spite of our belief in the sentiment as taught.

We say we doubt whether it is safe to hold up such an orchard as a model of perfection, or as an example for imitation. An orchard may not be quite as "perfect" when it is laid down in grass, anymore than a lot of onions be as good when early radishes are grown among them; but our market men will do the latter, and fruit growers do the former; and when they see their fruits and vegetables models of health and productiveness, and their pockets borne down by the weight of the proceeds, it is hard to convince them of the error of their ways. If we can get our trees healthy, long lived, vigorous and productive, and at the same time get but a ton of good hay to the acre; there is no reason why we should not reap the benefit though a bushel or even a barrel of apples less resulted. There is no compromise of principle in this as there is in tearing up the roots to get crops, merely that manure may be partially supplied to the trees; but rather a harmony of interests—interests that work well together. "Doing one thing at a time," is a sentiment very well in its way, but like other good things can be pushed too far. There is no good reason why a locomotive that goes with passengers, should not bring along their baggage at the same time, though it might be objectionable to have heavy freight on the same train.

We have adopted this argument, assuming that a perfectly cleared and cultivated orchard might approach absolute perfection; but beyond this assumption for the argument sake we do not go; for we believe grass to be a benefit, and not an injury to an orchard. It is not a fact that orchards laid down to grass, "suffer more in time of drought than one well cultivated," except under special and unusual conditions; nor is it a fact that "grass robs the trees of nourishment very little if any less than some root crops." And we have no doubt that it is on these erroneous opinions that what lit-

tle remains of opposition to grass, and advocacy of continually disturbing the surface, is based. Any one who will, during the summer months, try for himself, with a thermometer, six inches or a foot under a *tough* sod, will find the soil cooler, and at the same time see that it is moister than one kept "well stirred" and clean; and it is well known that the higher forms of vegetable life will feed on decaying vegetable matters of a lower type, and obtain from them organic and mineral elements that they could not take from the soil itself so well. All nature in the animal as well as in the vegetable divisions, is sustained only by the decay and decomposition of lower and inferior orders; and of this low order of vegetation, and to this end, nothing serves the purpose of the farmer so well as grass. Grass crops take very little of the mineral elements from the soil, unless suffered to approach maturity before cutting—one of the special cases we have before excepted to; while its innumerable surface roots, which are annually formed, and *annually decay*, furnish the roots of the fruit tree with an inexhaustible supply of food in a better condition than the soil itself would do. Our readers will remember that this is not mere "belief," but a recognized fact; not perhaps as "asserted in the ritual," but as adopted in *practice*. Every nurseryman knows, or may know, that no matter how well a piece of land may have been cultivated—whether in corn, potatoes, or mere fallow—the young fruit trees he sets out in such ground, never thrive *half* as well as when planted in newly broken up sod; and in agriculture, to "lay down in sod" means to renovate by that means worn out ground, that no manner of manuring could ever do so well. Whether the grass is turned under, as in breaking up a piece of sod, or grows as we would have it in an orchard, makes little difference to the improvement of the soil. We would, perhaps in every instance, mow twice a year; and for the little loss taken away by the green cut herbage, add an annual top-dressing that would more than compensate.

And now in conclusion we would beg of our contemporary not to put a tongue to our pen and imagine it "talks loud." We have ever held its kindly spirit and genial nature in high esteem, and assure it our only object is to combat a very dangerous error, as we believe, in an important pomological operation.

FLOWER MARKETS.

Our intelligent Paris correspondent has struck on an important topic in his present letter.

It is very surprising to us that, in our large cities,

there are no distinctive "flower markets." As it is now, most of the time the public—the whole public—does not know where to find the florist, or the florist where to sell his flowers. The consequence is the florist suffers. He has his regular few score of customers, who have learned where to find him by time and experience; and with little competition for his plants, his sales are uncertain and his profits small. With one regular market, the whole public know where to get the best things, and demand for them is thus kept alive. The public taste becomes educated,—flower sales increase,—and the florist knows just what the whole public wants, and how to anticipate it.

There is a good idea here, and we should be glad to see some of our correspondents take it up and go into the details.

BIGNONIA VENUSTA.

Availing ourselves of a standing invitation kindly given to us a long time ago, to "call whenever convenience permits," we seldom, no matter how much hurried, go by the grounds of Harry Ingersoll, Esq., without turning off from the main road to see the orchard-house trees, now in their fourth year of very successful cultivation.

On a recent occasion we saw there the grandest specimen of *Bignonia venusta* we ever saw in bloom; and as we think there is a peculiar point in the successful culture of this plant, which has been well met in this instance, we have Mr. Ingersoll's permission to refer to the plant in our journal.

As every one knows, this beautiful winter-flowering plant requires a heat of over 55° to bring it to perfection, and is therefore a warm conservatory plant. This one is in a warm greenhouse. The spot on which the greenhouse is built was originally an old stone quarry; and the house was, with the pretty ribbon-garden in front, erected to improve this desolate spot at the suggestion of the late A. J. Downing, Esq. We mention the nature of the ground, as it has an important bearing on the success of this plant. The house is a lean-to structure, and is supported through the centre horizontally by columns and arches. Up and around these columns, and over the arches, a single plant of the *Bignonia* had been trained, and extending from these to the rafters in every part of the house. The flowering shoots hung in the wildest profusion. From a count we made of a small part of the space, we estimated there were at least one thousand bunches of these magnificent flowers,—one bunch alone of which is a nosegay in itself.

And now for the treatment. The plant appeared to be about ten years old, and was planted out at the foot of one of the columns in the "open ground" forming the floor of the conservatory,—nothing more.

Many will say there is nothing peculiar in this: hundreds have so treated their Bignonias, which grow well but do not flower. But in this instance, the main peculiarity is that the said soil is particularly poor; in fact, comprises little,—nothing we may say, but the spalls comprising the old original quarry. This poor soil is no doubt the whole secret. The house is warmed by a hot-water boiler, and the boiler is sunk in the ground, outside the house, in close proximity to the roots of this plant; and of course the roots are kept very warm and dry in winter during its flowering, and this also may have an additional influence on the success we witnessed. Altogether it was a treat to us of the richest kind, and we here take leave of it by remarking, that if we were confined to one plant for a conservatory climber, that one would certainly be *Bignonia venusta*.

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.

GRAVEL WALLS—*T. W., Kinderhook, O.*—"Are you acquainted, or have had any experience with the gravel wall? Do you think it would make a substantial wall for a basement to be used for preserving fruits and vegetables?"

[We have seen the gravel or concrete walls for many years past in different places, but do not know how they stand as foundation walls. Dr. Houghton, near this city has constructed much wall of this character. We should be glad to have the experience of friends who have had them several years.

HOTBEDS—*T. W., Kinderhook, O.*—Can you recommend any thing for hotbeds for forcing early plants, etc., instead of manure?

[Leaves, tan bark, or any vegetable substance that will putrefy, will do as well as manure. Even sawdust, if mixed with gelatinous matter, after the mode prescribed by Dr. Uhler, in our first volume.]

YELLOW OR SAND LUPINE.—A correspondent inquires where seed can be had. It is used as green manure in Germany.

Books, Catalogues, &c.

A HANDBOOK OF VINE AND FRUIT TREE CULTIVATION, as adapted to Sir Joseph Paxton's Hot-houses. By Samuel Heremon. From C. B. Miller, Horticultural Agent, Broadway, New York.

This is an illustrated English work of sixty pages, and we may as well start by saying that every one who has or wishes to have glass-houses will pursue interest by reading it.

Orchard-houses in particular have become a necessary luxury to all persons of even moderate means, and it becomes an important study how to erect them cheaply, and yet to the purpose. In England, this occupied the attention of Sir Joseph Paxton, the gardener to the Duke of Devonshire, and designer of the first Crystal Palace; and the result was an entirely new principle of construction.

So completely did he keep the objects of his contemplated improvements in view—namely the most universal application of glass houses, that his new houses are arranged on principles which admits of their being placed on the ground, and of being taken down and transported with as much ease as a piece of parlor furniture; thus giving those who merely rented ground, an opportunity of having a glass house without the fear of the landlord claiming it as his property, when a removal was desired.

From plans furnished us by an attentive foreign correspondent, we were enabled to give a full account of Sir Joseph Paxton's new houses, with copious illustrations in our first volume, in advance of their publication by even the English horticultural journals; but the subject does not seem to have attracted much attention among our American greenhouse builders. It seems a painful fact that even where one's own interest is concerned,—a good idea has to be repeated over, fold upon fold, before we can understand its value, and notwithstanding the expense and trouble we put ourselves to, to get the earliest and most complete information, we doubt whether there has been a single house built on the plan in the Union, while in England they are to be seen "everywhere,"—a convincing proof that there is some merit in them.

The principles on which Paxton's houses are made, are not given in Mr. Heremon's work. To make the whole matter complete, we give below a full explanation of them.

Sir Joseph Paxton, M. P., who has probably as

good a knowledge of the requirements of horticultural buildings as any man living, has patented a set of improvements in their construction. In carrying out his invention rectangular glazed frames are used, and are by preference longer than they are wide. These frames are combined in pairs at their upper ends by hinges, in such a manner that their lower ends may be set apart at different times to a greater or less distance, according to the horticultural purposes to which the buildings are for the time applied, and their upper ends are so arranged as to form good ridges, where two of the frames go together. Each pair of such frames is confined with the neighboring pair by distance-pieces of a few inches in length, which are made to lock or hold the neighboring pairs of frames correctly together, leaving an open space between; and it is by means of these openings that ventilation is obtained for the interior of the buildings. The openings are arranged to be covered, or for a time partly covered, by doors or flaps hung to the sides of the frames, such doors being by preference made to open or close in parts to facilitate the adjustment of the ventilation from time to time. The lower parts of the frames, when of wood, are shod with zinc or other metal. In some cases, such frames as are above described are placed one above another, the upper ones forming a roof, and the lower ones forming inclined sides sustained by uprights. The ends of such buildings may be made of angular glazed frames, so arranged as to form different angular ends, or the ends may be made of wood, or of mats, or of other material.

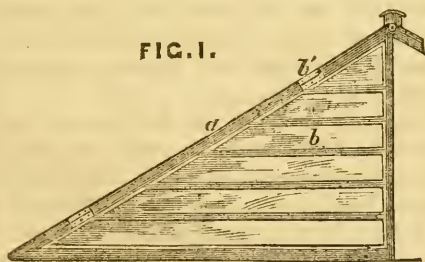


Fig. 1, of the annexed engraving, is an end view of one-half of a horticultural building or glazed structure, constructed according to Sir Joseph's invention. *a a* are the side frames, which are hinged together at their upper ends, and are in this structure inclined at an angle of 30° to the ground line, *b b* are triangular glazed frames, forming the ends of the structure; they are hinged to the side frames at *b' b'*. If it is desired, the side frames may be inclined at an angle of 60° to the ground line, and the end frames, to adapt them to the

change of inclination in the change, may be turned one-quarter round.

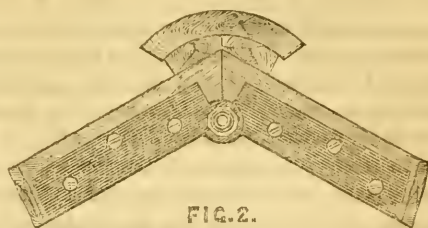


FIG. 2.

Fig. 2 is an end view of one of the joints employed to combine together in pairs the side frames, *a a*. In this figure, the joint is in the position which it assumes in fig. 1.

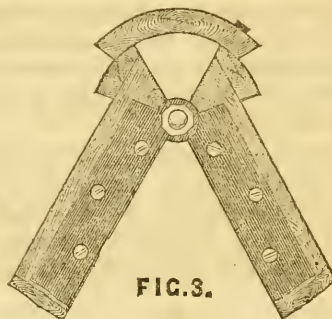


FIG. 3.

Fig. 3 is a similar view of the joint in the position it assumes when the side frames are at an angle of 60° with each other.

The frames have each a metal eye fixed to them, and a thumb-screw passes through the eyes of the two frames, and screws into a nut beyond. Each frame has also a wooden block, with a curved upper surface fixed to its upper edge; and a curved ridge-piece is employed, which, resting on the curved blocks of the two frames of each pair, makes a tight joint at whatever inclination the frames may be set. The ridge-piece is held in position by pins at intervals.

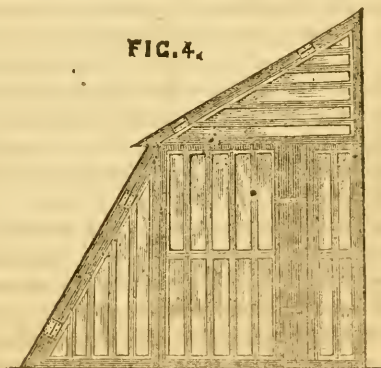


FIG. 4.

Fig. 4 is an end view of one-half of a structure, formed from the same frames, *a* and *b*, and in which frames, *a a*, are placed one above another, the upper ones forming the roof, and the lower ones the inclined sides. In this structure a fixed framework, *A A*, is employed, and the roof is fixed to this by screws, and the side frames may be hinged to the upper part of the fixed frame work, *A*, all round in a similar manner to that in which the frames *a* were before hinged together in pairs.—

Having got this far in the knowledge of the principle, Mr. Hereman's book gives the whole manner of putting things together, and is filled with many designs for their modification.

One of the most interesting parts of the book is the portion devoted to the discussion of boilers and heating arrangements. But the whole subject of orchard management is practically treated, even to the finishing of a Monthly calender of operations for the whole year.

We conclude with the following cut taken from the work, as with the illustrations above given, it will render the understanding of what these houses are, more complete, and induce a greater desire to get full particulars from the little book itself.



CATALOGUE OF FRUITS OF THE NATIONAL POMOLOGICAL SOCIETY, for cultivation in the United States.

The main part of the "proceedings" are not yet issued, but this part has just appeared on our table, and is the result of the labors of the general fruit committee, in seeking to find out the different localities where certain varieties of fruit seem most at home. This has long been felt a want, and is we believe the first attempt of any moment on the part of the Society to supply it.

Like all first attempts it is not perfect, but is much nearer so than we supposed it could be; and the gentlemen in whose hands the matter was placed may feel proud of the result.

On looking over the list, it is curious to note that while most varieties seem confined in their good

conduct to very limited localities others seem to do well almost everywhere in comparison.

Among apples for instance, we find Red Astrachan marked as doing well in 23 out of the 35 stations; other apples that are also given this widespread character, are Baldwin, Yellow Bellefleur, Benoni, Bullock's Pippin, Carolina Red June, Early Harvest, (27 stations), Fall Pippin, Fameuse, Gravenstein, Hubbardston Nonsuch, Large Yellow Bough, Maiden's Blush, Rambo, Rhode Island Greening, Roxbury Russet, Smith's Cider, Summer Rose, Vandevere, Wine Sap; so that one going to a new locality, with no guide as to what is likely to do best there, will be least likely to go wrong by selecting from among them.

In the pear list the following seem to have the best distribution for success:—Bartlett, Belle Luerative, Beurre d'Anjou, Buffum, Doyenne d'Ete, Flemish Beauty, Lawrence, Louise Bonne de Jersey, Madeline, Seckel, Vicar of Winkfield.

Cherries—Yellow Spanish Bigarreau, Coe's Transparent, Kentish, May Duke, Reine Hortense.

Peaches—Crawford's Early, Crawford's Late, Early York, Large Early York, Morris White, Old Mixon Free.

The reports of apricots and nectarines, are nearly confined to New York and Indiana. The Plum also seems very local, as there are very few reports from any States but New York and Pennsylvania. Coe's Golden Drop and Washington, however, are reported as doing well in 18 States. The last in Connecticut, Delaware, N. Indiana, S. Indiana, N. Illinois, S. Illinois, Maine, S. Michigan, Massachusetts, E. and W. New York, New Jersey, N. O., Central Ohio, S. Ohio, E. Pennsylvania, W. Penn., Rhode Island and Vermont—quite a wide range.

In grapes, but 17 of the best known kinds are classified. Of these the Delaware, Diana and Concord, seem to generally do well. Ohio still speaks well for her Catawba, and Isabella does not seem to do so badly as reported; as with the exception of Ohio, most of the States having no good word for it, are chiefly the extreme northern ones.

The gooseberry, with the exception of Ohio, seems to be nearly ignored by the west, and the currant is evidently most at home in the northern States.

Of raspberries, Brincklés Orange wears the highest honor; and in Strawberries, Wilson's Albany has the widest range, carrying 17 stations, while its old competitor for wide spread popularity, Hovey's Seedling, has but 14.

Altogether it is a very valuable document, and

we guess those who are members of the Society, find the small investment necessary to become a subscriber "pays" this year at any rate.

SCHEDULE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY FOR 1863, from Secretary Harrison, Philadelphia, we wished particularly to notice. We have only space now to say that there is to be a grand exhibition, open to all the Union, at the Academy of Music on the 15, 16, and 17th of September; and that among the distinguished Horticulturists who are yet to deliver the monthly addresses, on the first Tuesday of every month, for the balance of the year, we notice the names of Messrs. Henry A. Dreer, James Eadie, William Parry, Wm. Bright, Wm. Saunders, Robt. Scott, Profs. J. C. Booth, and S. S. Rathvon.

DREER'S GARDEN CALENDAR FOR 1863. 72 pages, for gratuitous circulation.

BUCHANAN'S SEEDLING PETUNIAS, (colored lithograph), which, beautiful as they look, we can say, having seen the flowers last summer, are no more so than the real living things themselves. They will have a great "run" we are sure.

CATALOGUES.

- Eugene Baumann*, Morrisania, N. Y. Trees, etc.
Fleming & Davidson, New York. Seeds.
Thos. Morgan, Stamford, Ct. Trees and plants.
Daniel Brincherhoff & Co., Fishkill Landing, N. Y. Bedding, House and Stove plants; 22 pages.
L. Atwood, Lake Mills, Wis. Sheet Catalogue.
W. Tompkins, Germantown, N. Y. Sh't. Cat.
T. C. Maxwell & Bro., Geneva, N. Y. Fruits.
Geo. Clapp, Auburn, N. Y. Russell's Strawberry.
E. Y. Teas, Richmond, Ind. Wholesale list.
A. F. Conard, West Grove, Pa. Fruits, etc.
A. Bridgeman, New York. Gladiolus.
Geo. Bulser, Toledo, O. Fruits and Ornamentals.
A. S. Fuller, Brooklyn, N. Y. Small Fruits.
H. A. Dreer, Philadelphia. Vegetable and choice flower seeds.
 Do. do. Novelties from general seed list.
James Vick, Rochester, N. Y. Flower and vegetable seeds.
Washburne & Curtis, Harrison Square, Mass. Beautiful seed catalogue of 50 pages, with handsome engravings of many new plants.
S. Moulson, Rochester, N. Y. Wholesale list.

SERIALS, MISCELLANEOUS.

We have so many good things this month that our notices must be brief on each, and we shall

refer again to some hereafter, particularly *Silliman's Journal* for January, which we have wished to notice particularly in detail, for the last two months, as this number contains scientific matter of great value to practical Horticulturists.

Domestic Intelligence.

GRAPE GROWING IN IOWA.—The success which has attended grape growing upon the bluffs and highlands of the upper Mississippi, has established the fact that they are much better adapted to the purpose than our more open and level country, even in much lower latitudes. Being in Lyons a few days since, we visited the grounds of H. A. Truax. They are located a mile from the river upon the west bank, and have a general northern inclination. Six acres are enclosed and every foot is occupied—principally with grapes. The soil is about twelve to fifteen inches deep, underlaid with yellow clay. In the fall of 1859, it was covered with a dense growth of hazel brush. It was trench plowed and thoroughly pulverized, and on a portion of it ashes spread. The principal crop of grapes is composed of the Catawba and Isabella, both of which are in a very healthy condition, several hundred of them now fruiting very heavily, without any appearance of disease or blight. The Delawares are growing very finely. Mr. Truax is propagating largely from them, allowing only a few of them to fruit this year. His success in *propagating by cuttings*, in the open air, has been so successful, that we here give his method of procedure as kindly furnished us by himself:

'In the first place I take my Delaware cuttings off in the fall, which are cut from thoroughly ripened fruit wood, after the leaves have dropped, and cut them into lengths of 3 or 4 eyes, am not particular to an eye, then cut them close under an eye to make them root more readily, then take them and bury them in sand in a cellar where it freezes slightly through the winter. I prefer burying them in sand as it helps them callous over through the winter. The first week in May, the ground beginning to get warm, I take my cuttings out of the sand in the cellar, the eyes having been kept back by the cold sand and not swelled any. I then take the cuttings, which must be kept from the air and not allowed to dry, as that is fatal to them, and put them in trenches, which are made as follows: Lay off the ground intended for the cuttings, (I have the ground spaded to the depth of fifteen inches, or as deep as the spade can be driven in the ground),

the ground is then leveled, and trenches are dug 6 inches deep, and just the width of the spade; take common coarse sand and fine chip dirt, and mix them together, and scatter along in the trenches to the depth of two inches. I then take my Delaware cuttings and set them along in the trenches about six inches apart, in a slanting position, setting them well down in the chip dirt and sand, so there will be but one eye above ground, when the trench is filled up and leveled off. I then fill in the trench with three inches of fine mould, and tread the mould to the cuttings gently, then put on the other inch of soil and leave that loose, so that the rains and sun can penetrate and act upon the cuttings; this last inch of soil brings the upper eye even with the surface. Then take some short straw and shake it over them loosely, so as to shade the eyes from the sun and drying winds until the eyes start, then remove the straw, weed them out nicely, and loosen the surface soils to the depth of an inch, and keep it mellow to that depth through the summer. By this plan we don't lose twenty cuttings out of a hundred, and should not lose any if the wood was all ripe, and all put in the trenches alike, trodden and covered evenly.

Delawares raised on this plan make fine plants in the fall. I think the whole secret of raising the Delaware, or any other close grained grapevines from cuttings, is having the wood thoroughly ripened, proper care taken of the cuttings after cut, and the preparation of the soil and trenches, where you wish to raise them out of doors. I would say in addition to this my ground all lays to the north-east, and my cuttings are all raised on the north side of a six foot fence. I prefer that to any other part of my grounds. The cuttings don't start quite as early, but they are more apt to live after they do start, as the soil gets plenty warm enough after the first of June, and the soil keeps moist all through the summer, making fine plants by fall."

The Dianas and Concordas are flourishing as well as could be desired.—*Prairie Farmer*.

Foreign Intelligence.

A NEW WINTER GARDEN FOR PARIS.—A company is now being formed in Paris, according to the *Journal du Harve*, for the purpose of transforming the garden of the Palais Royal into a winter garden, like the immense greenhouses annexed to the palaces of the wealthier Russian nobles. The company proposes to bear the whole expense of making

the garden a place of recreation unequalled in the world. It would be devoted to concerts, games of all kinds, artistic exhibitions, &c. In May, every year, the glass roof would be removed, and the garden opened to the public as usual.

STRELITZIA NICOLAI.—I have at the present time a seedling *Strelitzia* sending out its flower stalk. The seed was sent to me from the Cape, some ten years ago, under the name of *S. albiflos*, but which Mr. Van Houtte says is the same as his *S. Nicolai*. It is like *S. Augusta*, except that it has no stem, and that the leaves are much longer. The spathe is upwards of a foot long, in form similar to *S. Reginae*. I have never heard of its having flowered in Europe. *St. Bertin, Clos St. Bertin, St. Omer, France*. [*S. Nicolai*, which is said to be a Cape plant, has been flowered at St. Petersburg, and named there by Dr. Regel. It has large, white flowers, and leaves which are somewhat heart shaped at their base; and at length it acquires a tall stem.—*Gard. Chronicle*.

NATIONAL HORTICULTURAL SOCIETIES.—The English are moving in this matter. They do not want to interfere with existing societies, but in connection with them have grand migratory exhibitions, just as our National Pomological Societies have. American Pomology would never be what it is but for this principle; and it would be well for our Horticultural leaders to consider whether the whole range of horticulture might not thus be improved as well as the fruit department alone.

HORTICULTURAL SOCIETY OF LONDON.—Dr. Lindley, who has been for forty-one years Secretary of this institution, has recently resigned. It has had an immense influence on the present proud position of Horticulture all over the world, and the learned Doctor may well claim a large share of the merit due. N. Wilson Saunders, a distinguished English Horticulturist, was elected to succeed him. The Duke of Buccleugh is the President of the Society.

THE CULTURE OF ACHIMENES, GLOXINIAS AND GESNERIAS.—As these three species are so nearly related with regard to treatment, it is unnecessary to treat each separately; what is required for one does for the others. At the present time they should all be comfortably stowed away for their season of rest in a dry place. A shelf fixed in a fire house is very suitable, or they may be put with their sides turned up, under a stage. If in the

former they will require watering a few times to prevent their getting shrivelled. Let them remain till the beginning of March, when put them in a warm house near the glass, to prevent them drawing. It is a plan with some to part them after they have started; others, directly they are removed from their winter quarters; the latter I prefer. For the compost, use loam, peat and decomposed dung, in equal parts, with a sprinkling of silver sand. Use pans or pots with wide tops, and leave nearly an inch for mould to cover them. There is nothing to come up to a pit to grow them advantageously, made either with tan, dung or leaves; the latter is preferable, being a nice sweet temperature. Use the syringe well for two purposes; firstly, it tends to promote vigor, also it keeps the thrips in check, which do great havoc to Achimenes, in eating the colored surface of the blooms. When they are in bloom it must be let off. Gradually raise the heat up to May, to 70° by day and 60° by night. When they are well up in bloom, remove them to a more conspicuous place. A few sorts of Achimenes I will quote, which are very good, and a nice distinction: Ambrose Verschaffelt, Longiflora major, Margaretta, Pietta, Patens, Meteor, Sir Tcherne Thomas, Leipmanni and Eekhautei. In the shape of new sorts there are eight kinds of hybrids, raised by Mr. Breeze, which we recommend for winter blooming, the names of which are as follows: Adonis, Comet, Aurora, Denton Beauty, Delicate, Mars, Erecta multiflora, Mazeppa. Gloxinias, of which there is a charming variety now in cultivation, are well deserving a place in every house where there is warmth. The erect-blooming kinds are very interesting and useful for Bouquets. For Gesnerias, you cannot have better for sorts than Merkii, Cinnabarina, Zebrina splendens, Donckelaari, and that neglected tubiflora, which is well deserving of notice, the fragrance of which is delightful. All that is required is care, with a trifling outlay in getting a collection; then your plants will repay for the trouble bestowed upon them by adorning your house during the autumn with their exceedingly interesting bloom and foliage. —*London Gardener's Weekly.*

HOLLYHOCK PROPAGATION.—Cut down the stems at once, and manure the ground round the plants liberally. Hollyhocks may be propagated from buds, and although July is the proper season for doing so, yet we should try it now with some of the greenest of the stems. In July the following is the mode of proceeding: When the hollyhocks are tied up to the stakes for the last time, all the

inferior stalks, or those that are likely to hide the rest too much from the sun, or, indeed, any that are too much crowded or ill-placed, were cut away as useless formerly, but now they are made into cuttings to increase good sorts, or save one the trouble of sowing seeds of them every year. Every leaf on a shoot will make a cutting, if you take a part of the stem and the eye at the bottom along with it; but the easiest way is first of all to cut the shoots into as many pieces as there are leaves or joints, then to split the pieces down the middle, so that every half has its own bud and leafstalk; the blade of the leaf is not necessary, but it is best to keep two inches of the leaf talk; the soft pith in the centre of the split parts should be scraped out, as it is liable to cause damp or mouldiness; the pieces are then planted an inch deep in sand, under a hand glass or a cold, close frame, and sometimes with no better help than the shade or shelter of a north wall; part of the leafstalks are above the sand and mark the centre of each cutting; the bud at the bottom of the stalk will soon push, make roots, and be in all respects as good as a seedling, besides being true to the sort. —*Cottage Gardener.*

HERR FRANZ FOSCHT, in Tetschen, Bohemia, near the frontiers of Saxony, is the owner of a magnificent collection of Orchidaceæ, numbering over six hundred kinds. He had the new idea of selecting such as seemed to him the hardiest, and to let them live out doors through the season, though in a sheltered situation. He puts them out on stumps of trees, such as oaks, and by the aid of creepers, like Cissus, ferns and Selaginellas, he adds variety to the novel sight. He has a movable canvass roof to save them from strong heat or rain. Also waters them carefully. As the thermometer has various times fallen to 5° Reaumur, Mr. Foscht infers that a good many tropical orchidaceæ can be successfully kept in the open air during the season, in temperate latitudes without any injury. A further conclusion as to acclimatizing them gradually would be too hazardous.

IMPOSTERS.—Two men of the name of Balme, deserve to have their name embalmed in the record of horticultural impostors. They took a large store, on a fashionable Boulevard in Paris, and professed to sell the choicest seeds, taking enormous prices and giving the public the most worthless seeds for their money. Thus they sold to General Mellinet, 2400 francs' worth, and to the gardener of Princess Mathilde, 800 francs' worth. Spring revealed the fraud. *Peledium Elegantissimum*, *Pæonia superba*

nova variegata, *Andromeda variegata*, engravings of which were shown, proved trash, and were the subjects of a suit against them. Condemned to a fine of fifty francs and one year imprisonment. If, on getting out of prison, new suits are proffered, they run a chance of seeing little daylight for the rest of their lives.

HOW TO KILL TREES.—When trees are purchased, it should be as late as possible in the planting season. By this method the purchaser will make pretty sure of obtaining the weakest and most ugly of the stock left in the nursery, after all the foolish people, who like to keep their trees have had their pick. When the trees arrive home, lay them anywhere, and be sure their roots are not covered. The more the air, frost and sunshine act on their roots the better. When they are planted, take care to have the ground in a wet, pasty condition; do not prune them; let all the bruised and jagged parts of the roots remain; plant them very deep, do not tread them firm, and take care not to stake them.

They will certainly begin to grow rather late in the spring, and endeavor to overcome the various impediments to their well doing, which have been imposed upon them by the first conditions. This lengthens out the process of killing, and increases the interest of the task. Dig about their roots frequently all the summer. If they are in the kitchen garden crop as near to them as possible. You may as well have plenty of cabbages and cauliflowers off the same ground as the apple and pear trees occupy, and so let there be no scruples about using the spade where their roots run, and even quite close to their stems, as the more you destroy their surface fibres the better. It will not kill them quickly, but only cause them to send down tap roots into the cold sub-soil, and this will favor disease which increases the fun. If they are in the border next the grass plot, you have a fine opportunity to practice a little torture. Grow climbers of some sort at the root of every tree—sweet peas will do very well, or honeysuckle, convolvulus, clematis may be used; and to train them up the stems use wall nails, and nail up the trailing plants with shreds, just as if they were growing on a wall. This will make plenty of wounds in the bark and cause canker nicely. Then, if any of your rifle-shooting friends want practice, let them aim at the stems of the trees, and see how many bullets they can plant in the wood; and if you want to try one of Saynor's knives at any time, scoop out pieces of wood from the stems. If a branch grows where

you do not want it, snap it off; if there is any fruit produced knock it off with a heavy stick—this will bruise the fruit and the trees at the same time, and serve as healthy exercise.

There are quicker methods, such as cutting a tree down, and soaking the roots with sulphuric acid, &c. &c., but these are not artistic, and they make an end of the matter too quick to be amusing.—*London Gardener's Weekly.*

Foreign Correspondence.

From Our Occasional Paris Correspondent.

PARIS, February 15th, 1863.

. . . . You may be right, friend Mechan, but certainly not altogether. Shall I go on writing you letters full of peace, even to gardens, the very emblems of peace, and their echo from my native country still coming back with the sound of war, horrid war and no end of it? . . . Floriculture is progressing in America. I am glad to hear it. You instance the wonderful increase of florists' stores in New York, the increased sales of Bouquets, etc. etc. I would rather hear of an increased demand for pot plants. They are for the million and I want the million to get the taste for horticulture. I verily believe there is not one pot plant sold in all New York, to one hundred here in Paris. Don't be afraid. I am not going off now into a disquisition concerning the educational and refining influences of flowers on the masses. I am talking business and would like to see that branch of raising pot plants for market getting improved with you. Shall I tell how flowers are sold here?

To begin; there is every-day flower market in one or more spots of the city. But in one and the same spot you have it but once a week. Consequently our florists here can make custom in every part of the city, and are regularly found every day in another fixed place.

Number two: the pots are not squatted down on the pavement as they come handy, but are put either on the flags or on shelves, in a sort of amphitheatrical fashion. The smallest in front, then the larger ones and so on, the largest forming the rear. The buyer thus takes in the whole of them at a glance.

Thirdly: to ensure to each plant its individual merit, and to avoid a confused mass in which the gaudiest flower eclipses the whole, each plant is surrounded by a sheet of white paper at its back. It thus stands in a sort of niche, isolated, on its own merits. This is applicable to any except the large

ones. A comparatively small sheet will do it, put up like a half section of a paper bag, point down, held by a pin in front or above it, according to size of plant.

The idea of a regular flower market ensures competition to both buyer and seller, ensures a good assortment to choose from, and draws of itself custom. People having no idea of buying go perhaps a little out of their way to enjoy the sight and often buy.

Our flower sellers are of the female sex, and it is no slander, is it, to say that women like to talk? They use this gift to advantage in praising the beauty of their wares, and there is something in that. They are no nymphs, no "models" for painting "Flora and her train," and very seldom indeed would the painter find here his interminable "flower-girl" alive. Contrary-wise, there is a strong sistership in outward looks between our flower-seller here, and the ladies selling fish and vegetables in the Philadelphia stalls. Nevertheless they are better hands to effect sales, both there and here, than the men. It is the beauty of marriage among florists, that *mater familias* sells the offspring of *pater familias* in open market.

What do they sell most?—Anything you know and a few more seldom seen in your cities, such as Myrtles, Aucubas, etc. The adored Rose in all its varieties, and in shapes often out of taste, Pinks in great varieties, against your one or two; Mignonette in greatest profusion, and a few Cacti.

But *treve aux pots!* From pot plants to shrubs is but a step. Why are shrubs so much neglected in your country? Our gardens here, in the suburbs; and wherever they don't exceed an acre, contain almost nothing but flowers, creepers and shrubs. The rest are low growing trees, such as red-flowering Chestnut, and without which no garden here is considered possible; Laburnum, dwarf fruit, and a very few big trees, one for a small place, a dozen for an acre place. I see you take up the cause of shrubs in your journal. The wonder is it needs taking up at all. In distinction from American taste, people here can't get enough lilacs in their ground; they are *passionement* fond of them, and by the bye, the new varieties of shades advertised every year amount to but little indeed. Rhododendrons are the gems of gardens here and do very well. The new kinds successively getting into market, stimulate the more people's partiality for them.

People in the country, or as we call it, in the province—Paris being considered *la France*, and all the rest of the land mere by play, subordinate,

la province—get wofully taken in by "new kinds." "Agents," the pest of all countries, the just detestation of local nurserymen, travel about into every part and section of France. They divert trade from the neighborhood where they happen to be, by various means. For instance, they undersell, what if their stuff either arrives in bad state or is named wrongly, is of inferior kinds, and but too often in addition to all that is poor and dies off within the season,—people, at least a good many, think "distance lends enchantment to the view," and prefer an indifferent article from afar to a good one to be had close by. For this very same reason these agents take two prices for one wherever they find a chance, and I often have the opportunity of seeing people, otherwise business people, pay extravagant prices, merely for the pleasure of seeing things come from a distance. Again, they delude people, gullible human nature, (not particularly *French* nature), by sheer imposition, offering the natives all possible and impossible things; twice bearing apples and pears; currant bushes, bearing the true currant for cakes and puddings; roses to bear flowers as big as your baby's head; Weigelias, rose-scented; early cucumbers to cut in the month of May, and the like. Algeria, approaching California, in the line of monsters, real and fabulous, very often lends a name and a snare. Now I have seen some agents in my time, at home; but, odoriferous as they are, they can learn a trick or two by coming over here. They need not fear the superior intelligence of the Illinois farmer over our Gascon or Breton; let them but change a name or two and the same morsel will be swallowed whole *there* as well as here. As long as "spiritual rappings" continue, I don't despair of American gullibolooistudiness.

"Order! order!"—Was it you, friend Meehan, singing out "order?" Bless your horticultural soul and body, I am sitting down already; I never said anything, and am, notwithstanding,

Ever Yours,

M.

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING, MARCH 3d, 1863.

Mr. W. L. Schaffer in the Chair.

CULTURE OF PEACHES AND NECTARINES, IN VINERIES AND ORCHARD-HOUSES.

Mr. Charles H. Miller presented the following Essay on the subject:

FIRST SEASON.

Much depends on the selection of good trees and their management the first year. To begin well is the first step towards success. Procure two year old trees if possible; if they are not to be had, choose good, healthy, one year old maiden trees, well formed and furnished with laterals. Shorten each lateral shoot to two or three buds, with the exception of those near the top, which should be cut close to the main stem. Shorten the top so that the tree will be about four feet high; pot in 12 inch pots, in a compost of three parts sandy, turfy loam, and one part well rotted manure; the top spit of an old pasture is what is here meant by turfy loam. A little quick lime may be added to the compost heap with advantage. Enlarge the aperture at the bottom of the pots, place a few branches or small sticks across the bottom over the holes, and a few fresh lumps of sod on the sticks. Owing to the enlarged holes very little drainage is necessary. The roots will soon be through the bottom of the pots and will prevent the soil from falling through. In potting, ram the soil firm about the roots, get as much soil into the pots as possible, the wood will be all the more firm and shorter jointed than it otherwise would be if potted loosely. If this operation is performed in the fall the trees will have a good chance to become partly established by spring.

About the middle of November, (or even later if the weather is not severe), they should be removed to the vinery or some other place, where frost will not injure them; they are thus disposed of for the first winter.

About the middle of March is a good time to start them the first season. Syringe freely as the buds begin to swell, and continue to do so throughout the season, to encourage growth and to keep them clear from insects. The red spider being a very troublesome enemy to fruit trees under glass. Presuming the shoots to have been cut back to two buds, as recommended at the time of potting, these and the stems will give numerous shoots during summer. The buds near the top will push first and be the strongest; and now comes the struggle for balance of power. These foremost shoots will require stopping at about the fifth or sixth leaf, in order to give the lower branches more headway, which seldom require pinching before the leading shoots need it a second time.

Any branches that are weakly and lagging behind, will not require pinching, but should be cut away at the winter pruning if not wanted.

This constant summer pruning or pinching the young shoots the first season, will lay the foundation of the future form and habit of the tree, that of a cone or pyramid as it is generally called.

About the first week in summer they should be removed from under the shade of the vines to the open air, and plunged in the soil to the rim of the pot, in some sheltered spot where they may remain until the fall. Frequent syringing and little weak manure water, about once every ten days or so, will add much to their benefit during summer. Mulching or top dressing the pots, should also not be forgotten; a good mulching will save a deal of watering with much more benefit to the trees.

About the latter part of September, they may be taken up, and any roots that are through the bottom of the pots should be cut away. This will facilitate the ripening of the wood; give them a good top dressing, removing a portion of the old soil, and replacing it with good compost. As cold weather approaches remove them to the vinery, withhold water and stow them away at one end of the house for the winter. Cover the pots with leaves or long stable litter, to protect the roots from being frozen, and the pots from being broken by the frost; but if the soil in the pots is moderately dry this will not happen. Give plenty of air day and night when the weather is not severe.

SECOND SEASON.

The pruning of the Peach and Nectarine, require a somewhat different treatment from most other stone fruit. For instance, the Apricot and Plum bear fruit on short, stunted wood or spurs, for a succession of years, or as long as the tree is in a fruitful condition; whereas, the former fruiting on the preceding season's growth, it becomes necessary to promote a healthy, vigorous growth of young shoots, independently of the fruit bearing wood.

If this is not attended to, and the tree is allowed to bear fruit on all the branches, the only bearing wood for the next season, of any consequence, will be the terminal shoots of the existing fruit-bearing wood. Thus it will be seen in a few years the trees will become naked, unsightly objects. Therefore the proper way is to cut back half of the branches to a good, strong leaf bud, in order to obtain good fruiting wood for the next season, leaving the other half nearly the whole length of the shoots for the purpose of fruiting.

In shortening the branches for fruit, care should be taken to cut to a double bud, that is a leaf bud alongside, or between two fruit buds. It so hap-

peas, sometimes, that some of the branches have only single fruit buds and the terminal leaf bud; these shoots should not be shortened, as the fruit would drop and the branches die back to the next leaf bud or to the main stem.

If fruit is required in June, begin to force in February; if the trees are started about the first of the month, the fruit of the early kinds will be ripe the first week in June. Begin with a temperature of forty-five; very little fine heat is required the first two weeks; syringe twice a day until the blooms open; give air freely on fine days closing early in the evening. As the blooms expand syringing must cease till the fruit is set. Steaming the house, by throwing water on the pipes or flues, will be found beneficial to the expanding blooms. When the fruit is set syringing must again be resorted to, and continued until the fruit is nearly ripe.

The temperature of the house must now be regulated to suit both the trees and the grapes. A high temperature of fifty-five, running up to seventy in the day, is all the trees require at this season.

The grapes will now be in bloom and would be benefited by an increase of temperature, say sixty-five at night, and eighty by day. A compromise may now be effected by opening early in the morning and closing early in the evening.

The thermometer may be allowed to rise to eighty degrees, or more after midday, without injury to the trees; but such a high temperature I have found highly injurious in the morning, the fruit often dropping from this cause. Closing the house in the evening, when the glass stands at eighty, and syringing the trees with tepid water, operates like a warm spring shower, and diffuses a genial atmosphere throughout the house, that both grapes and trees delight in. Particular attention should be paid to ventilation, when the fruit is undergoing the process of stoning, as any sudden check or increase of temperature may cause the fruit to drop.

When the operation of stoning is well over the fruit should be thinned, being careful not to overburden the trees. The leading shoots may now be stopped at the fifth or sixth leaf, and all other branches should have another pinching. After which they may be left for the balance of the season.

The vinery being now too shady for the fruit to color or ripen, the trees should be removed to the open air and fully exposed to the sun, in order to give flavor to the fruit. The pots should be sunk in a border of good soil, where the roots will quickly find their way through the bottom of the pots much to their benefit. Mulch with well-rotted

manure, and syringe the trees every evening until the fruit is ripe; also after the crop has been gathered.

THIRD SEASON.

Shifting. Some of the trees will now want larger pots or tubs; those in twelve inch should have sixteen or seventeen inch, and the others in proportion. I find tubs much more convenient for large trees than pots. Remove a portion of the old soil from about the roots and repot with good compost. October being the best month for this operation.

Any of the trees that may have become weakened and destitute of good fruiting wood, by overbearing or other causes, should have a severe pruning, a portion of the old soil-shaken from about the roots and planted in the open ground, where they will quickly recover themselves, and make good bearing wood during the summer. In the fall they may be again taken up, potted and forced the following spring. I have taken them from the open ground in this manner as late as December, and had a good crop of fruit on them; they were about two weeks later in maturing, but were equal to the others in flavor. The potting and pruning is best done in the fall, say October. A judicious management of this part of the business is necessary, so that, not only a proper supply of fruiting wood be retained for bearing the next season, but also a foundation for years to come. The bearing wood should be kept as near to the centre of the tree as possible; if this is not attended to a great portion of the tree will soon become naked and bare of fruit buds, and in place of neat, compact bushes, long, straggling branches will be the natural consequence.

When pruning is completed, or some time during winter, the trees should be washed or painted over with a mixture of soft soap, sulphur and tobacco water, as a preventive against red spider and the brown or black aphid. This latter pest, if allowed to multiply, will give considerable trouble. They generally attack the trees in force about the time the blooms begin to open, and if not kept under will destroy the young shoots as fast as they appear. Being nearly the color of the ripe wood, they sometimes appear in large numbers before they are observed. I find fumigation the best way to get rid of them; smoke the house several nights in succession, washing the trees forcibly with the syringe every morning following.

When the buds begin to swell the temperature should be gradually raised as before recommended, being careful to open the house early in the morning, closing early in the evening; a little air should be left on all night.

As the season advances the sun will be more powerful. Very little fire heat is required in the day time; the safest way is to rake the fire out early in the morning when the day bids fair to be bright and sunny, as the intense heat, caused by the sun operating on the heated flue, is very injurious to the blooms and young fruits. This caution must be observed at the time the fruit is stoning, as any sudden increase of temperature at this particular time, operates very much to the injury of the young fruit, often causing them to drop off. The floor or border of the vinery should be on a level with the passage way. If a border, the trees should be plunged therein, placing a piece of slate or tile under each pot to prevent the roots from getting through. It is a very important matter in forcing peaches and nectarines, to keep the roots cool and moist. The pots should never be placed near the pipes or flues.

When the young shoots have pushed about five or six inches in length, (with the exception of the leading branches), they will require stopping, and if there are any shoots that are not wanted, let them be taken away altogether, leaving only such branches as are required for fruit next season.

The advantage of taking clean away so early in the season, any shoots that are not wanted, is manifest. If allowed to grow the whole season, and then cut away at the winter pruning, a great portion of the strength of the tree would have been spent in a useless manner, when by an early removal such a loss could have been prevented.

When the operation of stoning is well over, a second pinching of the branches should be attended to. The principal leading shoots should also now be stopped in order to strengthen the lower branches.

When the shade from the vines becomes too much for the trees, and the operation of stoning performed, they may be removed to the open air as before recommended; the fruit will ripen as quickly as in the vinery and be much better flavored. The vines will also be benefited by their removal.

The following varieties I have found to do well under glass:

PEACHES.	NECTARINES.
Early York,	Early Newington,
Acton Scott,	Elruge,
Troth's Early,	Fairchild's Early,
Noblesse,	Old Roman,
Barrington,	Pitmaston Orange,
Grosse Mignonne.	Violet Hative.

Opinion appears to be divided as to the best method of cultivating fruit trees in orchard-houses. Some

advocate planting them in the borders prepared expressly for them, while others give pots or tubs the preference. The advocates of the border system claim the advantage of permanent location, requiring less cost and labor in their management.

It certainly does appear at first sight, that increased advantages may be obtained by planting the trees in the borders' and I am not prepared at present to say that these ideal advantages may not prove of ultimate reality, as the trees become more aged they certainly will grow less rapid, and consequently become more fruitful.

It appears to me, however, that several years are lost before the trees are in a bearing state, owing to rank, excessive growth, caused by rich borders, a genial atmosphere, and otherwise generous treatment connected with their culture under glass.

It seems impossible to keep them under control, for no amount of root-pruning or summer-pinching will arrest their rapid progress for the first few years, until they have expended some of their superabundant resources in making annually long rank shoots as large as a walking-cane, with plenty of strong leaf-buds, but minus the fruiting-buds. As these large shoots have to be cut away at the winter-pruning, the trees present any thing but the desired appearance of neat, compact bearing bushes.

To those who prefer planting their trees in prepared borders, I would recommend a soil of sandy, turfy loam, (no decomposed vegetable matter whatever should be used); the border may be slightly raised above the passage way, and the soil packed and beaten hard as a well trodden footpath. The trees may then be planted in small holes dug for the purpose, thus in a measure confining the roots in a given space; forking or otherwise cultivating the soil should be dispensed for awhile. The hoe and rake being sufficient to keep down weeds and impart a neat appearance to the border. Another and perhaps a better plan would be to plant the trees in boxes or old tubs; an old flour barrel cut through the middle would make two such tubs, and answer the purpose well. They may be sunk in the border and allowed to remain until they were rotten. The trees would have the appearance of being planted out with all the advantage of being in pots; with the additional advantage of a good border from them to feed on when they most require it. The size and growth of the trees may be regulated with the greatest ease; over luxuriant growth would be held in check, and kept under control; and, before the tubs were rotten the trees would be in good bearing condition, when they may be allowed to have the whole range of the border.

The principle object of planting fruit trees in pots or tubs is to check excessive growth by confining the roots in a given space, thus bringing them into an early bearing condition, so difficult to accomplish, when they are planted in the border. Once in a good bearing state their growth will be less rapid.

To persons fond of horticultural pursuits, I know of no glass structure that would afford the same amount of pleasure and satisfaction as an *orchard-house*, or rather a *well constructed vinery*, for the cultivation of fruits. Grapes can be grown on the rafters in the usual way; plums, peaches, apricots and nectarines may be grown in pots and tubs, forced in the vinery in the spring and removed to open air in summer, where they would form beautiful objects."

Mr. Harrison inquired if Apricot trees were peculiarly subject to bleed. Had some trouble with them.

Mr. Miller—Yes, if pruned late in fall. They should be pinched during growth to form fruit spurs.

Dr. Burgin inquired concerning the destruction of insects, by fumigation or otherwise. Also concerning the peach grub. Had known boiling soap suds used effectively upon them. Alkaline matter saponifies animal fatty matter. The yellows have been successfully treated by the same method.

Mr. Miller—Peach trees are not subject to yellows when grown under glass.

Mr. Schaffer—Would not root pruning check root growth sufficiently.

Mr. Miller—Not as effectually as confining the roots in a pot or tub, which I like much better than planting in the open border.

Mr. Schaffer—In France, cherries are successfully dwarfed in the open ground by root pruning.

Mr. Meehan—As a general thing, trees grown in the open border, under glass, are not successful. Pots or tubs are better, the roots being more under control; and they afford better opportunities for changing sides to the light, and cleaning of insects.

Mr. Harrison—Trees in pots are easily grown in a cold vinery, wintering them in the cellar.

Mr. Miller—Has apricot trees, on plum stocks, of dwarf habit, and now full of flower buds. Formerly kept his trees in the cellar, but finds it not necessary. Prefers to keep them in the vinery. A slight frost does them no injury, if not severe enough to burst the pots, should not fear it.

Mr. Schaffer—The nectarine is readily dwarfed on plum stocks.

Mr. Miller—A great evil to be guarded against is

overfruiting. Last year allowed too many fruit on his trees and lost a year's time by it.

Mr. Harrison—All kinds of fruit may be grown in a vinery, perhaps not as successfully as in separate houses, still with good results. Many persons cannot, afford, or have not room for more than one structure, which may be so arranged with a flue, as to permit a great variety of fruits and even vegetables to be grown in it; such kinds should be selected as would mature before the vines shade the house too much.

Dr. Burgin—Thinks all those kinds requiring about the same degree of heat and moisture at the same time. They need plenty of air also, as they luxuriate or carbonic acid gas, a constituent of the atmosphere. Has seen all kinds of fruits, including coffee, successfully grown under glass.

Mr. Meehan, in reply to an inquiry concerning the root pruning and shifting of trees in pots, stated that it was not required for some years. Removes two inches top soil and renews with fresh soil. If the trees are moved at all it should be in the fall, carefully washing away the ball of earth with water so as not to disturb the rootlets. Prefers 14 to 15 inch pots.

Mr. Miller—Would fruit four years in the same pots, putting on new top soil twice a year: uses 17 inch size.

At this point, as but few persons present had much experience in orchard-house culture, the discussion took a wide range on general topics.

Dr. Burgin had grown potatoes 15 or 16 years on one piece of land, with never-failing success, although "contrary to all the rules." He doubled the crop of his neighbor who followed the old fashioned rotation and buried his manure. Puts the manure on the top. Never earths up but cultivates flat. The tubers form *near the surface*, and if earthed up, new ones form each time and you have a plentiful crop of "small potatoes." Potatoes need much alkali. Found nitrate of soda a good manure for them, also potash and marl.

Peach growers in New Jersey, put boxes of sand round the base of the tree to prevent the deposit of the egg of the borer.

Apple trees on his place some years had plenty of bloom but no fruit. Farmer thought it due to change of climate. Not so, as weather tables for 100 years past demonstrate. Fruit all stung by insects. There were too few forest trees and too many gunners about. In the old times of plentiful fruit, birds were plentiful. Bought a lot of hungry chickens, and after ploughing up his land turned them in. They devoured the worms as they came

out of the fallen fruit and worked their way into the ground. Also put boxes into his trees for the birds. Always has good fruit and plenty of it. The yellows are considered contagious in New Jersey.

Mr. Schaffer—A friend has cured the yellows by top dressing the soil with oxide of iron.

Mr. Harrison had cured a tree of the yellows by boiling water. Thinks it sometimes originates in the diseased seed of sickly trees, even when planted in good ground. It is regarded by many good physiologists as a disease of defective nutrition or exhausted soil.

Mr. Ritchie had known trees die of the yellows, on soils abounding in oxide of iron, as indicated by the sorrel growing on it. Jersey men attribute it to overbearing. Some ascribe it to the borer, but incorrectly. Described the appearance of trees affected with the yellows, and stated that he thought the disease caused by overbearing on a poor soil with a wet sub-soil. It is quite common in New Jersey. A large portion of West Jersey consists of a poor, sandy soil, underlaid by a stratum of clay, sometimes 18 inches below the surface, and often only two inches thick. This retains all the water and causes disease in the roots.

Mr. Schaffer—A friend, in Delaware, remembers peach trees in his youth, bearing well for 50 years. Now they do not last over about five years.

Mr. Ritchie—The first settlers invariably cleared up the rich bottom lands along the rivers, not the hill tops, which are comparatively poor. On Mr. Reybold's farm, which is on a river bottom, there are many old trees healthy and productive.

Mr. Meehan—The yellows are not contagious, nor caused by want of nutrition, but by obstructed circulation of the sap. Mr. Ritchie's wet subsoil, injuries to the wood (as we see in ringing), injury to the roots, the action of frost on immature wood, are many other causes of sap obstruction. Protected by glass peaches have no yellows.

Dr. Burgin—Farmers in New Jersey say they have the best success by stirring the soil.

Mr. Eadie—In rich borders, in Europe, has seen yellows on trees the first year. That it is often seen on poor soils is no proof that it is caused by exhaustion. A rapid, late, fall growth produces it very readily. Ploughing or cropping orchards is very objectionable. They should be kept in sod and top dressed. Young, strong growing trees, 4 to 7 years old, are more liable to yellows than old trees which grow more slowly.

On motion adjourned.

A. W. HARRISON, *Rec. Secretary.*

CORRECTION.

In the report of the Discussional Meeting of the Pennsylvania Horticultural Society, at the March meeting, by a friend, who took notes of the proceedings, in the absence of the regular reporter, Mr. Jones was made to say that he raised his own seed, as no good seed could be had in the stores. This is exactly the reverse of what he did say; he always buys his seed of the leading seedsmen. This was not an error of the "types," but a misapprehension of the gentleman who kindly undertook the Secretary's duties in his absence from town. In justice to Mr. J., as well as to our experienced and honorable seedsmen, we gladly make this correction.

MONTHLY DISPLAY, MARCH 10TH.

In the midst of a driving snow storm the hall was crowded with visitors, who seemed delighted with the brilliant offerings of competing members and friends.

One entire side of the room was occupied by the various collections of plants in bloom, contributed by E. R. Hibbert, gardener to Fairman Rogers, Esq., consisting of Azaleas, Cinerarias, Begonias, Camellias, Selaginellas, and a general assortment of Ornamental-leaved plants. The committee decreed premiums to Mr. H. for a Hanging Basket, a collection of six plants, and for second best Azaleas; also a special prize for a stand of plants in bloom. Of nearly equal extent, on the opposite tables, was the floral display of James Eadie, gardener to Dr. James Rush, comprising mainly Azaleas and Ornamental Foliage plants. A large and costly Basket of cut flowers, which took the first prize, and a pair of Hand Bouquets, above the prescribed size, were much admired. The first premiums were also awarded to him for six ornamental foliage plants, six Azaleas, specimen ditto, and a special premium for a stand of plants. The specimen Azalea, *Hibbertia purpurea*, was worthy of the highest praise. Beautifully trained in the form of a bell, the foliage and flowers presented that equal balance and proportion so pleasing to the artistic eye. A long, naked stem, surmounted by a huge ball of blossoms, unrelieved by bright green leaves, however attractive to a professional eye, is by no means an object of admiration to a cultivated unprofessional taste. A "mass of bloom," to our thinking, should be relieved by a "mass of foliage," gracefully but not too regularly, interspersed. The strife for a profusion of blossoms often leads to an undue excess, and a perversion of nature's graceful teachings.

From the garden of Gen. Robert Patterson, his gardener, Adam Graham, brought a rich and varied contribution of Azaleas, Beautiful leaved plants, Baskets, &c.

A somewhat novel design for the parlor or conservatory, was made up of a pyramid of plants in pots, on a base of ferns and mosses, rising in several tiers, and surmounted by a Pandanus, or some plant of the Pine Apple family, with long, gracefully drooping leaves. His collection of 12 plants was pronounced "best" by the judges and rewarded accordingly. Special premiums were also decreed him for an exceedingly graceful basket of cut flowers, and for the stand of plants just named.

What shall we say of Mackenzie & Son's cut Camellias, 50 varieties in all? Simply that, during our experience we have rarely seen them equalled. They comprised all the standard and later sorts, and two entirely new ones never before presented in bloom in this city, the *Conspersa* and *Maculosa*. The first is of medium size, very fully petalled, white, finely pencilled with carmine. The latter has a large flower, similar to but fuller than *Imbricata*, of a full rose color, blotched with white; both decidedly desirable acquisitions, of marked character.

Two new contributors of flowers, Mr. E. Satterthwait and Remi HERRISE, gardener to Lewis Taws, Esq., found a welcome place upon the table. The former secured the first prize for a pair of neat, highly fragrant Hand Bouquets, and a special one for a stand of Roses and Begonias. The latter had a small but very attractive Basket, whose graceful form, and harmonious arrangement, and combination of colors, gave token of a lady's tasteful labor. Many considered it as the finest in the room. It certainly well merited the extra prize awarded to it.

Fruits were represented only by collections of apples from Mr. David Miller, of Montgomery county, and Mr. Samuel W. Noble. A number of sorts of local reputation, came from Mr. Miller's flourishing orchard. The Heister, Ox, Landreth, and especially the Hancock, were pronounced "good."

In these days of chicken salad, it does one good to see such bouncing heads of Lettuce, as those presented by Mr. Satterthwait; tender and crisp to a fault, large as a good sized early cabbage, white, succulent and sweet, they possessed all the virtues necessary to the character of a perfect salad, and would be found acceptable with either fish, flesh or fowl. (The salad is one of our "particular vanities," and we may give an Essay, some day, on that branch of Horticulture!)

With the announcement of the awards to Mr. S. for his fine Radishes and Asparagus, to Mackenzie & Son, for Rhubarb, and Remi HERRISE, for mushrooms, we must close this somewhat extended notice with an expression of renewed confidence in the auspicious future of the Society, and the hope that *all who can* will contribute generously of their productions to these monthly displays, where the competition is open to all.

STATED BUSINESS MEETING, MARCH 17TH.

Messrs. Lewis Perrine and William Donohue, both of Trenton, New Jersey, were elected members, and seven new candidates proposed.

At the social meeting on the 24th, a full, appreciative and deeply interesting biography of the late eminent Pomologist, Dr. William D. Brincklé, was read by his lifelong friend and admirer, E. B. Gardette, M. D., which we hope to present to our readers in a future number. It was listened to with rapt attention by a large audience of the friends of the departed gentleman, who, it may be truly said, was the Bayard of the horticultural world; "*sans peur et sans reproche.*"

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

[Concluded from page 96.]

A novel question was then put to the meeting and discussed:

"IS PRUNING INJURIOUS TO FRUIT TREES, AND IF SO, WHAT SYSTEM IS LEAST INJURIOUS?"

Every speaker seemed to take it for granted that for the grape vine it was injurious,—that it was a necessary evil,—that the only use of it was to keep the vine within bounds, to get the trellis covered with good bearing wood from top to bottom, and to ensure fruit on every spot. These objects accomplished, the less pruning the better for the vine. The difficulty was to fix any system that would apply to all vines. Mr. Grider said that the pruning necessary to a Delaware, would be death to the Concord; and Mr. S. Miller said the Catawba could not be had anywhere to bear certain crops, except from totally unpruned vines. Mr. Knox thought 48 square feet of surface not more than enough for a single vine.

The sense of the meeting was taken on the best method of pruning the vine; and it was decided that neither the spur nor the renewal could be recommended for every instance, and that the best system was that which comprised both according to the character of the vine and the objects to be

accomplished, and that *judicious* pruning did not induce disease.

"ON THE IMPORTANCE OF SHELTER TO ORCHARDS,"

A wide range of observation was indulged in; but on the main question every speaker gave his experience to the effect that sheltered orchards, or sheltered trees or vines, were much more successful than others; by shelter meaning protection from cold winds.

"THE BEST KIND OF TRELIS FOR GRAPE VINES."

Mr. Knox's vines were in six feet rows and eight feet apart. He used locust posts, 12 feet long; he has a strip nailed at bottom and top of 16 feet scantling sawed in two. As the vines grow he uses thin strips 8 feet long, set upright from the bottom to the top strip, 9 inches apart. Sometimes he does not put up the trellis till the second year—a stake doing all that is necessary for the first year or two. His trellis cost about \$200 per acre, and runs north and north. He does not paint his trellis, and thinks it would last twenty years.

Several other gentlemen described their trellises, some using wire, others simple posts, &c. After hearing all, the vote was taken, and Mr. Knox's trellis unanimously recommended.

"PRESERVING FRUITS."

Several gentlemen described how they kept grapes till spring, almost agreeing in every particular, namely: gather as soon as ripe, let them sweat in single layers for a few days, then place in boxes or kegs two layers deep, with paper or dry leaves between each layer, and keep cool, but from frost. So far as apples and pears are concerned, there seemed also to be little difference of opinion, some preferring leaves, some straw, some chaff, others cork dust, or plaster; but all seemed to agree that thin layers of fruit, then packing material, then more fruit, more packing material, and then a cool place, was all that was necessary for preserving fruit.

Mr. Hoopes related, as an instance, of the value of such meetings as these, that he had never been able to ripen well some kinds of pears, till last fall's meeting he heard Mr. Charles H. Miller's account of ripening in thin layers under straw, and since then he has ripened his hard pears this way to perfection.

"SHOULD ORCHARDS HAVE CONTINUAL CULTIVATION? IF NOT, WHEN SHOULD IT CEASE?"

The question was debated with a good deal of spirit, the meeting wishing to make a distinction

between vineyard culture and other orchard trees. Finally, a vote was taken on "whether vineyards should be continually cultivated." Only twelve voted, but all these were in the affirmative. During the debate, Mr. Fehr, of Reading, and Mr. Grider, of Bethlehem, gave instances of some vineyards that had been in grass, that improved wonderfully by cultivation.

"Should orchards be continually cultivated?" was then put to the meeting, and decided in the negative, by 16 against 3 in favor. It was the opinion of the meeting, with the exception of the three votes recorded, that an orchard should never be cultivated in Eastern Pennsylvania, after the trees commence to bear. As trees of some varieties come into bearing early—Early Joe and Smith's Cider, for instance, while others like Northern Spy and Rhode Island Greening, are several years coming on, the meeting declined to fix the number of years after which cultivation should cease.

A resolution, proposed by Mr. Mitchell, expressing the sense of the meeting of the loss of Dr. Brincklé to the cause of pomology, was unanimously adopted. Also one by Mr. Knox, that the Society had heard with satisfaction that one of its most respected members, Mr. W. Saunders, had received an appointment under Mr. Newton, at Washington.

The officers elected for the ensuing year, were
President—Rufus A. Grider, of Bethlehen, Northampton county.

Vice-Presidents—A. W. Harrison, of Philadelphia; J. Baldwin, West Chester; D. Engle, Marietta.

Recording Secretary—W. Hacker, of Cheltenham, Montgomery county.

Corresponding Secretary—C. Dingee, of Avondale.

Treasurer—R. Otto, West Chester.

We very much regret that our space allows us to give but such a meagre account of these interesting proceedings. The character of the meeting may be understood when we mention as among the most prominent members who took part in the meeting, the following gentlemen: A. W. Harrison, Rufus A. Grider, Josiah Hoopes, Rev. J. Knox, Isaac Jackson, Charles Dingee, W. Hacker, J. E. Mitchell, Samuel Miller, David Miller, (of Limerick), Casper Hiller, J. Fehr, H. Bombaugh, J. Harshberger, J. B. Garber, Tobias Martin, H. Engle, S. Franz, L. Otto, Dr. Gros, Dr. S. Kellar, H. Potts, J. H. Berryhill, H. A. Kelker, G. Small, M. Bernheisel, Jacob Conklin, and others, whose names we did not learn.

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THOMAS MEEHAN, EDITOR.
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Hints for May.



FLOWER-GARDEN AND PLEASURE-GROUND.

Of all the spring months May is the best for transplanting evergreens; it is the time when the young shoots are about starting into their season's growth, and the roots pushing at the same time, nothing or very little is lost by evaporation while waiting for the new fibres to grow.

Evergreen shrubs are not considered generally successful in our climate; but this is rather owing to our perversity in exposing them to the winter's sun, or planting them in too dry a soil, than to any insuperable difficulty of climate.

Evergreen shrubs, such as Mahonias, Yews, Eucalyptus, Tree Box, etc., should be planted only on the north side of buildings, fences or screens; or under the shade of trees or bushes. The great danger in the latter case is that they will become too dry in summer, by the roots of the trees abstracting so much moisture from the soil. This is the common cause of failure with the Rhododendron, Kalmia and similar evergreens, which it is often attempted to grow under the shade of trees. In this case the proper course of procedure is to dig out the bed previous to planting the evergreens two feet deep; filling in or mixing with the natural soil some spongy or fibrous material. This will keep the soil moist and cool through several summers, until the roots of the covering timber, attracted to so much loose and moist soil, will be pretty troublesome. When this trouble arises, the way to proceed is to dig out all around the mass of evergreens two feet deep, severing all the roots that have interloped from the trees,—and this should be re-

peated every few years, or as often as the soil seems to suffer from drought through the summer season. By this care, which in practice is found very trifling, evergreens thrive with a vigor and beauty in our climate that is truly surprising.

In transplanting any thing that has roots large enough to admit of the practice, it is best to dip the roots, immediately before planting, into water. This will obviate the necessity of after-watering and its consequent injurious effects. If the plants appear to flag, shade or put an inverted flower-pot over the plant for a few days; if this does not bring the plant to, it must have water.

Trellises and stakes for climbing plants and vines should be put in at or before setting out the plants. These plants always seem to grow with more freedom and vigor when they can find something at once to cling to. Climbing vines add greatly to the interest of a garden. They can be trained into all sorts of forms and shapes; and many of them, for gracefulness of form, or beauty of their flowers, cannot be excelled by any other tribe of plants.

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 is become one of the most popular and useful of summer bedding plants. They like a rich, warm, and rather dry soil.

About the first week in May, residents of the Middle States commence to set out their bedding plants. The modern style of planting in masses affords great scope for a tasteful arrangement of colors, either in the same bed or by arrangement amongst a set of flower-beds. The ribbon style of flower-gardening beds in long, narrow, and winding strips and coils, is also popular for the same purpose. It requires, besides good taste in arranging colors harmoniously, judgment to select those kinds that will continue in bloom the whole season, with-

standing well the summer drouth, and that will harmonize in habit and growth with one another.

In former volumes we have remarked that flower-gardening affords scope for many pretty fancies, besides arrangement of color, which, in the hands of a person of taste, render a garden a paradise of enchantment. Borders and edgings of ivy, periwinkle or variegated plants, may be made to appear as frames to the pictures of pretty flowers enclosed by them. Waves and fringes of green may be led along through a large flower-bed, and the various divisions formed be filled with its own color, making a natural and living bouquet: different colored gravels may be chosen for paths between beds; different shades of green be made by the selection of grasses of different hues, where grass walks are employed. Old stumps or roots may be occasionally introduced in the centre of beds, and covered with green vines, or flowering climbers, as taste may dictate; rustic baskets and vases, and even in many instances where very artificial styles prevail, the topiary art may be called in, and good effects result from the use of the knife or shears on certain plants. Much may be done with wire. We once saw a circular bed, in the centre of which was a very fine specimen of Lamarque Rose, trained on a single stem to the height of six feet, and then the head trained on an umbrella-shaped wire frame. Around the bed was a wire frame about nine inches high, slightly inclining outward, on which was *Tropæolum canariense*, and *Ipomea clamoclit* (Cypress Vine, crimson); white would do as well. From this frame to the umbrella-head rays of wire were fastened, and the vines run up, but never allowed to get in amongst the rose branches. The bed itself was filled with *Salvia patens*, and when we saw it in September, was a mass of blue. It was difficult to conceive any thing more beautiful than the whole presented, and it reflected great credit on the taste of the lady who conceived the plan, and the skill of the gardener who had so well executed it.

The system of bedding plants has called for a new class of characters. Formerly viewed as a "florist's" flower, a verbena, for instance, would require roundness of form in the individual flower as a first requisite. The lobes of the edges of the border should seem so to overlap each other as to form a perfect circle. Then there should always be an "eye," and the colors of this eye and the margin beyond be well defined, and not run gradually into each other. But for bedding purposes, a new and striking shade of color, a free blooming character, neat habit of growth, and power to endure a hot, dry sun, are of far more importance; and the en-

ergies of our improvers should be devoted to this end. Seedling raising with this view is very interesting, and we would recommend all our amateur friends to try their hands at it. It is a highly interesting source of gratification even in itself. The way to proceed is to note some variety that approaches nearly to the desired shade, and select seed from these. The next season some flowers will be produced probably deeper, and in a few generations, by careful annual selection each time, the desired shade can be obtained. The old notion that "like produces like," is a fallacy. There is always more or less of difference in the progeny from its progenitors, though most generally so slight that we do not observe it; but a little art added to nature's own process brings out the variations very remarkably. Where quite different characters to the original are desired, hybridization may be resorted to. For instance, we may have an excellent habit of growth, and free blooming quality, but a dull colored flower; a kind as nearly allied to the good qualities as possible, but with better colors should be selected with which to fertilize the other. Flowers should be selected for fertilization soon after they have expanded, and the one used as a fertilizer chosen when matured. The flower of the former may then have the latter shaken over it, and fertilization will probably ensue. This is a rough method. The passage of a camel-hair pencil from one flower to another is better; the pollen from the stamens of the one is more certainly carried to the other. When hybridizing is carried on with nicety, it is best entirely to remove the anthers with a pair of scissors before applying the pollen of the other kind. This lessens the chances of self-fertilization, and renders the operation either a certain failure to produce seed at all, or a different race from its parents by the seed so produced. New fruits may be produced in the same way. It was at one time supposed all these productions were mules, and though they might produce flowers in their progeny, would not produce fruit, and so the operation would not benefit the pomologist. But this is now found not to be the case. The progeny is sometimes barren, but this is rather the exception than the rule.

FRUIT GARDEN.

Watch all young fruit trees against bearing too abundantly while young, or the first season after planting. There can be no objection to the ripening of one or two fruits on a tree the first season of setting out, in order to test the kind, or to administer to curiosity, if the tree be otherwise growing freely.

If little growth is making, no fruit at all should be permitted. It is a better practice to disbud or take out soon after sprouting all shoots that are needless to the perfect shape of the tree, than to wait till fall or winter. The pruning knife need then only be used to shorten in a branch to where several shoots are desired to push, or to induce a more vigorous growth from the pruned parts. In the gooseberry, raspberry and strawberry also, no more shoots should be suffered to grow than will be required to bear the next season.

Where water can be commanded, there is nothing so profitable as to well soak the soil about small fruits; first about the time that they have set their fruit. Much of the value of this operation, however, will depend on the nature of the soil. The advantages are least in a tenacious, and greatest in a porous soil. It is said that an animal derives most benefit from food when it is hungry before it begins to eat; it is certainly so with plants. Water applied to soil already wet is an injury; and water never has so telling an advantage on vegetation as when every leaf is about to wither up for want of it. A plant that never seems to want water is in a very doubtful condition in regard to its health.

When the strawberry crop is about to ripen, mulch with clean straw, to prevent rain soiling the fruit. Short grass from the lawn is often used; but it mildews as it decays, and detracts from the flavor of the fruit. Hot suns increase flavor, and strawberry tiles were once in fashion to put around the hills, which, by absorbing heat, added greatly to the fruit's rich quality. All that we have said of strawberries supposes them to be fruited on the hill system, with the runners kept off. Those who desire the best results, will grow them no other way.

In summer pruning or disbudding, it is also worth while to watch for shoots pushing stronger than others, and always take them out. This is the only way that shoots of equal strength can be encouraged in every part of the tree. This is particularly true of grape-vines. If a shoot once get the start of the others in strength and vigor, the others will gradually get weaker to the other's increasing luxuriance.

As to the best system of pruning grapes, there are several "schools," all contending that their views are "decidedly best." In such cases we have generally found there is much to admire in them all,—situations and peculiar circumstances deciding the point in each individual instance. There are a few points incontrovertable to insure success, and it matters little what system of pruning is followed so that they are secured. First, a healthy set of roots of the previous year's growth is essential to produce

vigorous start of growth the year following. Secondly, after starting, these roots can only be kept vigorous by encouraging an abundance of healthy foliage, to be retained on the vine as long as possible. Thirdly, the leaves of the first growth are at least of double the value to the plant than those from secondary or lateral shoots; they should, therefore, be carefully guarded from injury. Fourthly, checking the strong-growing shoots strengthens the weaker ones, equalizes the flow of sap to every part of the vine, and insures regular and harmonious action between all the parts. Any system that secures this, does all that is necessary for the general health and vigor of the vine, and where some special objects are desirable, such as dwarfing, particularly early bearing, productiveness at the expense of longevity, special means must be employed to bring them about.

The most paramount question with the fruit gardener is the destruction of insects. We have to confess to a belief that all schemes for their wholesale destruction have proved failures, and that our best hope is in their individual destruction. The different kinds of moths and flies may be entrapped by the thousand, in a persevering employment of wide mouthed bottles of sweet liquids hung about the trees. The *curello*, whose most tempting allurements do not lie like moths in the way of sweet food; but in finding a nice juicy nidus for the deposit of eggs wherewith to perpetuate its species, can be slain by the hundred, by perseverance in the shaking process. A snag, made by sawing off a small branch a few inches from the main trunk of the tree, should be secured on each, on the point of which to hammer, or otherwise the bark of the tree would be irreparably injured. With a sheet spread under the tree, and a sharp, quick jar with the hammer, all the pests then on the tree may be secured and destroyed. They are rather lazily inclined, but still a few will come from your neighbor's trees; but a few jarrings occasionally will keep them down. Experience has shown that this course, which only demands a little labor, is much more effectual than the thousand schemes that have been devised for hanging various charms about the branches, and then kneeling down and crying on Hercules for assistance.

The black knot and mildew, next to insects, prove the most troublesome opponents of lazy fruit-growers. We have no doubt that industry in experimenting and skill in scientifically arranging facts will ultimately overcome these difficulties. There are two general principles that may serve as a starting point. First, we know that on mountain sides,

where the atmosphere is damper than on plains, and the humidity more uniform, fruit crops seldom or never fail; and that in new countries where from the excess of vegetation the atmosphere is almost always saturated with moisture, fruits do well. As agriculture renders the air dryer, fruit culture becomes more difficult; correct principles of culture will, therefore, point to the necessity of in some way providing for these deficiencies before it will be as successful as formerly.

Last season we saw some heavy crops of plums on trees that had been wrapped around with mosquito netting, thus effectually protecting the fruit from curculios. If such gauze were steeped in tan-bark before using, it would probably last a great many years in good order for use. Trees might be trained *en espalier*, on purpose to be the more readily protected in this way. It is a nice plan in many respects, as should mildew or insects attack the fruit tree, or a shade or shelter be required for any purpose, the tree is in the most perfect shape for operating on to the best advantage. This is the season to commence with young trees to put them in shape for this purpose.

VEGETABLE GARDEN.

Cabbage, Cauliflower, and Broccoli, are now set out for fall crops, and Endive sown for winter salad. Lettuce also for summer and fall use. This however, must be sown in very rich soil, and in a partially shaded situation, or it will go to seed. Peas, Beans, and other crops, should be sowed every two weeks. They do much better than when a large crop is sown at one time, and then have too many on at one time to waste.

Melons, Cucumbers, Corn, Okras, Squash, Beans, Sweet Potatoes, Lima Beans, Peppers, Egg-plants, Tomatoes, and other tender vegetables that do not do well till the sun gets high, and the ground warm, should go into the soil without delay.

Bean poles should be set before the beans are planted; and near cities where they are comparatively high priced, their ends should be charred. This will make them last some years.

Keep weeds of all kinds down from the time they first show their seed leaves. It not only saves labor "in the end," but the frequent stirring of the soil vastly serves the crop. Sow a succession of vegetables every few weeks,—sometimes insects, sometimes frost, or occasionally other accidents will cut off a crop, and then there is some chance for its successor not wholly to disappoint.

Communications.

EXPERIENCE WITH POPULAR FLOWERS.

BY S. F. T., CHESTER COUNTY, PA.

"What flower seeds and bedding plants will I get for spring planting?" is a question which naturally enough comes up now, at the commencement of another season, and particularly is this an important question, to us poor simpletons, that bought all the "splendid new things from Swan River," and who knows where else, which our enterprising seedsmen are wont to advertise, and, after all our pains, look back upon barren-looking flower beds, where we expected great things.

"What will I buy this year, and which leave for the seedsmen to plant themselves?"

From dear bought experience, my conclusion is, that it will not pay for those who wish every bed to be a success, to plant quite all the new things. While for nurserymen, it is all well enough to "go it blind," and try every thing, holding fast only, and selling only, those which are good. My purpose, at present, is to speak of a few things which cannot fail to give satisfaction, and is intended for those who, having but a limited amount of space, cannot try experiments. The verbena of late frequently fails, and will continue to do so, unless we are careful to get strong growing varieties, and plant them in rich soil where verbenas have not been grown before. I find the Scarlets generally the strongest growers, and among these, Giant of the Battle and Brilliant de Vaise, unexceptionable.

The great trouble with planters is, that they must have one of each kind, when, out of a hundred varieties, perhaps twenty only will succeed with ordinary care. Get a few distinct kinds, strong, robust growers, and plant in new, rich soil, and all will be well.

For planting in large masses, not to be looked at too closely, the *single* Petunias answer well, and they will grow without much care. For the border the Lantana is an unfailing beauty, and will do finely in very dry soils, where the verbena would scarcely live. It blooms profusely, too, all summer and autumn, until frost.

Perennial Phloxes do well in all, except very dry soils, and among them there is nothing more beautiful than the pure white varieties. Delphinium formosum is a fine thing, and if the seed pods are picked off as soon as formed, blooms most of the summer.

Upright Madagascar Periwinkles (*Vinca rosea*)

and *alba*), are among the finest of bedding plants, blooming profusely all summer; and, with their fine glossy foliage and neat flowers, make a fine effect. To make good plants, the seed should be sown in a hotbed or in the greenhouse very early in the spring. If sown in the flower bed, they will not give much satisfaction.

For making large, green masses, the Rose Geranium is, I think, desirable, and its delicate flowers, though not showy, are desirable. It grows in the dryest soils, and if its flowers are not showy enough, plant a *Tritoma* in the centre of a group. While speaking of the *Tritoma*, I will just observe that, as it is quite a grand, showy plant, of easy culture, and increases rapidly by division of the roots, every body should plant it; and plant it if possible in masses. With me they have done well with quite extensive division, so that with one or two plants to start with, a person in a few years can plant large masses. Although one plant blooms but once in a season; yet, having a good many plants, I had them in bloom nearly all summer and autumn. Last year I took a four-inch pot, filled it with sand, and then filled it with cuttings of the Blue *Lobelia*, (*Lobelia erinus speciosa*). When the cuttings were well rooted, I planted the whole mat in the border, (without disturbing the roots,) and such a mass of fresh looking blue flowers as I had all summer and fall, well repaid the very little care required in propagation. Single plants, while they bloom all the time, do not make the fine show which bunches planted as before mentioned.

Perhaps no plant has disappointed as many persons as the Double Zinnia. And yet I can safely say, after two years experience, that it is one of the most splendid things introduced in the last two years. My first package had ten seeds, one of which made double flowers; the others semi-double or single. The double was a very brilliant purple, so bright as to dazzle the eye, and double to the very centre. It was full of flowers, and each lasted five or six weeks. I was unable to find a single perfect seed. Seeds were, however, saved from the semi-double flowers, on other plants, and from these I had this year a fine collection, some of which were as good as the best of the previous year. From its easy improvement, no plant is destined to cut a greater figure in the next few years, than the Double Zinnia. One difficulty in its way is, that seeds may be sold sometimes from single flowers. If every cultivator would pull up every plant as soon as it shows that it is not double, that difficulty would be removed. White, yellow

and purple straw flowers will not fail to please, and no one should neglect to plant all the gladioli he can find room for. So also the Anaryllis or Jacobean Lilly. But my list is long enough to tire the printer, as well as the reader, and I must close with the consciousness that, I have mentioned but a few of the good things, and said nothing at all of the varieties with fine names and high prices, that have been but barren fig trees with me.

[The experience of those who have tried the various classes of flowers, as introduced in the manner of the foregoing article, has a particular interest for the general reader, and we should be glad to see the example extensively imitated.—ED.]

MISCELLANEOUS SKETCHES.

BY ORCHIS.

When this shall be placed before your readers, spring in all its allurements will be upon us. The wild flowers will have commenced opening their beautiful petals, and the trees their myriads of delicate blossoms. The blue-bird's warble will have been already chorused by hundreds of our feathered songsters, and the air filled with the humming of the busy insect world. We desire, therefore, at the commencement of the season, to invite every lover of nature, to become intimately acquainted with those beautiful gifts from the great Creative Mind: for,—

"Flowers are the alphabet of angels,—whereby
They write on hills and fields, mysterious truths."

For this reason, we earnestly plead for a more extended knowledge of our native plants, and for a deeper interest in their habits, construction and culture.

One of the most beautiful essays that the lamented Downing ever wrote, was on the subject of our *Neglected American Plants*: wherein he says, "How many grand and stately trees there are in our woodlands that are never heeded by the arboriculturist in planting his lawns and pleasure grounds; how many rich and beautiful shrubs that might embellish our walks, and add variety to our shrubberies, that are left to wave on the mountain crag, or overhang the steep side of some forest valley; how many rare and curious flowers that bloom unseen amid the depths of silent woods, or along the margin of wild water courses. Yes, our hothouses are full of the heaths of New Holland and the Cape; our parterres are gay with the Verbenas and Fuchsias of South America; our pleasure grounds are studded with the trees of Europe and

Northern Asia, while the rarest spectacle in an American country place, is to see above three or four native trees,—rarer still to find any but foreign shrubs, and rarest of all, to find any of our native wild flowers.”

Such was the view of one of the most observing writers that our country ever produced; and whilst his example has shed its happy influence upon the rural homes of thousands, and though many such eloquent appeals flowed so naturally, and with such truthful force from his almost inspired pen, those neglected plants that are scattered all around us with so liberal a hand, are as sealed books and mysteries, and to planters yet unknown.

Why this is the case, affords cause for thought and reflection. There are hundreds of flowers “That are born to blush unseen, and waste their sweetness on the desert air.” In silent, lonely nooks; beneath the broad, umbrageous shade, protecting their delicate formation; flourishes as rare and splendid candidates for favor, as ever graced the forests of unhealthy tropic climes. The hills and valleys of America produce as grand and noble specimens of trees as ever Europeans saw; and although neglected here, the admiration of the foreign world is now bestowed upon these very trees that we have cast aside. Their admiration turns to wonder, when they see our fancy and desire is for foreigners of doubtful use. That we plant an ailanthus when our maples and our oaks should be preferred. That our beds are gay with tender introductions, when our native and deserving beauties are unknown in our grounds.

All this is truth. We do not wish to find fault, but rather to induce a different state of feeling. We wish to see men plodding cheerfully along with book and box beneath their arm,—sure evidence of seekers after knowledge, among the floral world.

We always feel like claiming them as friends, and the free-masonry of thought impulsively springs up, and draws our minds and thoughts together, cemented with a firmer bond than all the pleasures of the outer world could possibly invent.

It is woman's natural sphere, say some, to plant and tend the beautiful in nature, as emblems of her gentler life, and unselfish as a mother's love,—that love extending to the flowers, inducing her to train their wayward growth, protect their tender age, and shield them from adversity; and,

“No marvel woman should love flowers; they bear
So much of fanciful similitude
To her own history; like herself, repaying
With such sweet interest all the cherishing
That calls their beauty or their sweetness forth;
And like her, too, dying beneath neglect.”

But, although so pleasing in the gentler sex, be man's the task to feel an equal interest in botanic lore, and study out the truths revealed to only those who seek it with a love intense and pure.

To no one sex, or class, or caste, should this pleasure be denied; effeminate in nothing, but sublime and beautiful throughout. All such pursuits improve and purify men's thoughts and feelings, and teach them lessons otherwise forgot. And to all we would repeat the beautiful lines of Montgomery,—

“Away to the hills—the streams—the woods—for a spell of peace is there—

A welcome from the early flowers, and a kiss from the perfumed air;

Away! and thy heart shall find a friend in every flower and tree,

And Nature's pure and beautiful forms shall whisper of love to thee.”

To many of your readers this subject is doubtless dry and distasteful; but we often feel ready to exclaim, with Peter Collinson, “Oh, Botany! delightfulest of all sciences, there is no end of thy gratifications;” and such has been our own experience.

REMARKABLE PLANTS.

BY MR. D. FOULIS, GARDENER TO E. HOYT, ESQ.,
ASTORIA, N. Y.

Some objects of interest in the vegetable kingdom, to a lover of Nature, as displayed in the vegetable kingdom, will be found a most varied field for research and study,—many plants claiming our attention for their utility,—some to be admired for their beauty or graceful development. Others, again, interesting us by their fanciful growth or grotesque habit, and all combining to render the study of Nature a pleasing, as well as an elevating employment. No doubt many of its most remarkable features have hitherto been confined to tropical climates, which are, of course, more favorable to the development of vegetation than northern latitudes. But one most beautiful instance may be seen at our very doors, which no denizen of the torrid zone can enjoy, viz: Some fine, clear moonlight night in winter, to observe the delicate tracery of deciduous trees reflected in the snow, and find portrayed, with marvellous distinctness, the outline of every branch and twig. But thanks to the courage and perseverance of botanists abroad, and the refined taste of amateurs at home, our conservatories, plant stoves and aquariums, now teem with many of the gems of foreign shores, although it is much to be regretted, that such valuable lives as that of the lamented Douglas in Mexico, or Cunningham in Australia,

should have been sacrificed in their ardent botanical explorations. First in order of preference ranks the Palm tree, and it is a matter of regret, that in so few establishments can these be seen to advantage. The great Fan Palm (*Sabalumbraculifera*), is a fine illustration of its class,—scarcely less so is the Date Palm, (*Phoenix dactylifera*), producing the Dates of commerce and of Scripture. The Guinea Oil Palm, (*Elais Guineensis*), from which the African Palm oil is extracted. The graceful Coconut Tree, (*Cocos nucifera*), which produces such commodities as oil, milk, fruit, wine or toddy, wood, fibre, etc., the fibre having been found to be a most useful addition to the compost for growing ferns and lycopods. Seaforthia elegans is a most desirable conservatory palm, bearing a greenhouse temperature without injury. The Sago Palm (*Arenga saccharifera*), the Ivory Palm (*Phytolophas macrocarpa*), and the Wax Palm (*Ceroxylon andicola*), are all useful, as their names imply, and also highly ornamental. The noble Banyan Tree of India, (*Ficus Indica*), with its outspreading branches, supported by natural props, rooting down into the ground, is a sight suggestive of youth supporting old age. One specimen growing on the banks of the Nerbuddah, covers an area, the circumference of which is two thousand feet, with three hundred and twenty main trunks, the smaller ones exceeding three thousand, and being an evergreen like most tropical plants, must form an agreeable and wide-spread shade from the summer's sun.

Another most wonderful vegetable production, is the Lace or Lattice Leaf Plant from Madagascar; (*Ouvirandra fenestralis*). Its leaf is formed of longitudinal fibres, having no cellular substance in the interstices, which are thus open like the lattice of a window, or a piece of lace. The Caricature Plant, (*Graptophyllum pictum*), with its irregularly blotched leaves, often presents some whimsical likeness to the human face, by dividing the blotches with the thumb or forefinger. The Telegraph Plant (*Desmodium gyrans*), only requires a calm, warm atmosphere to produce its voluntary motion, uninfluenced by touch like the Sensitive Plant. Amongst plants, famed for their useful products, stand pre-eminently the Bread Fruit Tree of the Pacific (*Artocarpus incisa*); the Nutmeg (*Myristica moschata*), which yields both nutmegs and mace; the Clove (*Caryophyllus aromaticus*), which valued spice is the flower bud; the famous Cow Tree (*Galactodendron utile*), whose milky juice is extracted by tapping; the singular Lace Bark Tree of Japan (*Lagetta lentearia*), whose layers of inner

bark, without any artificial preparation, resembles exquisite lace; the celebrated and now indispensable Gutta Percha (*Isonandra gutta*); the Cinnamon (*Laurus cinnamomum*), whose bark constitutes the valuable spice so named; or the extensively used Banana (*Musa Cavendishii*); all contributing, by their varied and useful products, to the sustenance and luxury of mankind.

The Royal Water Lily (*Victoria regia*), with its strongly ribbed cupped leaves, six or seven feet in diameter, and highly scented flowers, opening petal by petal in the evening, is a sight well worth seeing. Scarcely less beautiful is the sacred Bean of India, (*Nelumbium speciosum*), with its smooth oily leaves rejecting quickly all moisture that falls on them. Valisneria spiralis is admirably adapted for a parlor aquarium, and well do I remember being one of a party of young gardeners to whom Mr. John Smith, the talented Curator at Kew, by the aid of a powerful microscope, made distinctly visible the sap alternately flowing and returning, in the veins of a living plant of Valisneria.

The Pitcher Plants are also a most interesting class.

The Australian variety (*Cephalotus follicularis*), is a little gem, but is rather difficult of cultivation, and I have very rarely seen a good specimen. Nepenthes Rafflesiana is one of the most showy, the pitchers under good cultivation attaining a great size. When young, the lid of the pitcher is firmly closed; yet, even at that period, it contains a considerable quantity of fluid, distilled, as it were, by the plant; after a time the lid opens, and continues firmly attached to the back of the orifice, by a natural hinge or ligament, and never again closes.

These are only a few of the more prominent objects of interest in the vegetable kingdom, and I only wish I could have done those enumerated better justice.

GLCZINIAS.

BY E. FRYER, NEW LONDON, CONN.

One of the most beautiful of the gesneriaceae,—easily grown from bulbs, cuttings or seeds. A great many neglect this plant under the impression that it requires extra care and a hothouse to grow in. It certainly loves heat in its growing season, but a hothouse is not absolutely necessary. It luxuriates in a heat of 90° to 100°, but will grow and flower at 75°.

Plant bulbs from February to April, in pots small enough to allow the roots to grow in from

four to six weeks, and fill them; shift into five or six-inch pots; and finally into eight-inch pots. At every shift, drainage from a half to two inches in depth, should be placed in the bottom of the pots. They bloom later in large, than small pots; and the period of blooming can be extended by using both from ten to fourteen weeks at the end of summer and beginning of fall, the bloom being finer, and continues longer in the large pots. Loam and peat and a little cow manure is good for them. Though the plants may be put out of doors with other plants in May or June, and they will flower then; yet the most appropriate place is the greenhouse. The under side of the glass should be painted with a mixture of common whiting and water, which moderates the intensity of the sun, and preserves a humid atmosphere. After blooming, the plants should be put to rest by *gradually* withholding water. The roots will keep over winter in dry earth, placed on the greenhouse shelf, or in a room where frost cannot reach them.

To raise seedlings, sow the seed in well drained pots of light sandy earth, about March or April. Sow *on* the surface of the pot, which should be filled to the top. Put no covering of earth on the seed, but keep them always from drying by gentle waterings. When the seedlings are strong enough to handle, transplant into other pots or pans, half an inch asunder, and when they have grown a month, pot off singly, and shift afterwards as they seem to require. By the end of the season the bulbs will be from half to one inch diameter. The following season they will flower well.

Cuttings are made from leaves cut from the plant in May or June, put in sandy earth, and set in bottom heat for about a month. They form small bulbs at the cut end. This method is best to preserve a favorite variety.

RIBBON FLOWER-BEDS.

BY WALTER ELDER, PHILADELPHIA.

When I look at the exceeding excellence of many varieties of flowering plants for bedding, which have been produced of late years by hybridization and careful culture, it admonishes me, as a planter, to devise new and improved arrangements in setting them out, so as to display their beauties to the best advantage. Twenty months ago I visited many estates of the noblemen of Scotland, where the *ribbon system* is largely indulged in, and thought highly of it. A great improvement compared with the old promiscuous arrangement; and by accounts from London, while the World's Fair

was in progress there last year, the flower-beds in the Royal gardens of Kew, planted in the ribbon style, were universally admired by people of all nations. And now we read of large contracts being given to manufacturers to make carpets, wall-papers, window-shades, bed-spreads, &c., in imitation of the ribbon flower-beds in the gardens of Kew. Every one skilled in floriculture among us, knows that we have a greater variety of flowers and diversity of colors suitable for our climate, than either the English or Scotch. Why, then, not try the ribbon style? Last year I was called out to the country to form eight flower-beds upon a lawn alongside an eight-feet gravel walk, but nine feet from it; four beds were made on each side, every two opposite each other. Six were oblong-quad-rangles, seventeen feet long and eight and a half feet wide. The other two were oblong-ovals, and all were planted on the ribbon style. In beginning with the quadrangles: No 1 was wholly planted with Verbenas, each row of a kind, and planted across the beds, and so arranged as to make a harmonious contrast of colors. The plants were set a foot apart in the rows, and the rows fifteen inches apart. The points of the runners were clipped off with sheep-shears at every two inches of their growth, which made them branch up all over the heart, and form very compact bushes. The flower-stalks grew long, strong and erect, and showed the blooms well above the foliage. After the plants met, the shears were run between them once a week to prevent them from running into each other and mixing their colors, and all faded blooms cut off at the same time. The profusion of bloom from June until late in November, was greater than I ever saw upon verbenas before. No. 2 was all Petunias, all single and selfs, and those having one color strongly predominating. The rows were across the bed, the plants twenty inches apart in the rows, and two feet between the rows. The runners were stopped every three inches, and produced as good an effect as did the verbenas. The *Old White*, whose habit is to run flat upon the ground, with few blooms, grew as high as the others, and was a mass of snow-white blooms the whole season, and gave an admirable effect to the whole bed. It is delightfully fragrant in the evenings and mornings, and its perfume is perceivable several yards off. No. 3 had six rows of Phlox Drummondii length-ways, a row of Mignonette, and a row of Sweet Alyssum. The Mignonette was clipped on the sides, and grew as tall as the Phlox. These Phloxes were each row of a distinct color, white, pink, rose, scarlet, crimson and purple. No. 4

had six rows of *Portulacca*, white and yellow once, and scarlet and purple each twice, but not together. A row of *Lobelia gracilis* and a row of Imperial Elizabeth *Verbena*, furnished the bed. No. 5 had rows across of *Heliotropium*, dwarf scarlet *Geranium*; *Cuphea*, scarlet; *Neriumbergia*, white; *Esecholtzia Californica*, and *Crocea*, yellow; *Verbena*, a row of scarlet and one of crimson; Sweet *Alyssum*, white; *Mignonette*, green; *Lobelia gracilis*, azure blue; *Phlox*, crimson; *Candytuft*, the white and purple each a row; *Gazania*, yellow. No. 6 was all of *Camellia German Balsams*. The rows across the bed, the white, blush, clouded white, scarlet, crimson and lilac, spotted white and lilac, and scarlet and white spotted, they were set eighteen inches apart in the rows and two feet between the rows. These distances were just proper for them to show their blooms advantageously, and cover the ground. Oval No. 1 was planted with *Geraniums*, sixteen inches apart in the rows and twenty inches between the rows. The first row was *Tom Thumb*, scarlet; next a white, then the *Variogated-leaved*, scarlet bloom; next pink, and a row of scarlet along the top, and between the rows were sown rows of *Mignonette* and Sweet *Alyssum* alternately, which bloomed profusely, and spread out their fragrance delightfully. No. 2 was planted with *Globe Amaranthus* and *Vinca rosea*, the same way and distance as the *Geraniums* on the other oval: first, *White Globe Amaranthus*; next, the *Purple Amaranthus*; then the *Vinca rosea alba*; then the *Orange Globe Amaranthus*, and *Vinca rosea* along the top, and *Mignonette* and Sweet *Alyssum* between the rows. The whole of the beds were gone over every week or ten days with the shears, curtailing straggling growth and cutting off all fading blooms. And all produced a greater profusion of blooms the whole growing season, and kept greener than I ever saw the same kinds of plants do under any other culture. Many visitors called to see those beds, and all admired them, but their opinions differed as to which bed was the most beautiful; and yet all agreed that the *Camellia Balsam* looked richest. In conclusion, I say, that I do not pretend to think that those arrangements were the best that could be made, but as a beginning, they pleased me well, and as they gave great pleasure to their owners, and were approved by all who saw, I felt proud of my labor.

[Ribbon gardening, and the other arts of design, that express a leading mind in the arrangement of all things are but just in their infancy of popular appreciation.—ED.]

COAL ASHES AS A FERTILIZER.

BY MR. D. TOUSE, MT. WASHINGTON, PA.

Noticing an article in the November number on Coal Ashes as a Fertilizer, I give a few observations on our use of the ashes of Bituminous coal which I suppose is similar to the Anthracite in its qualities. We have been in the habit of scattering our ashes just as they came from the house on any vacant spot in the garden that could be conveniently reached for upwards of eight years, and the space dressed in that time would measure about one-third of an acre. I do not know how many bushels of coal it takes to make a bushel of ash, but allowing fifteen, our yearly consumption of coal averaging 450 bushels, the quantity of ashes applied in the eight years would amount to 240 bushels, which would be at the rate of 720 bushels per acre; some portions probably were dosed at the rate of 1000 bushels per acre, as no particular attention was paid to scattering very regularly. In one case where the ashes were fresh from the house and in a caustic state, a bed was made across the spot where they had been deposited, and sown with parsnips and radishes in that spot; they failed to come to any thing, but where the ashes had been exposed to the action of the weather for some time before being turned in, I have never known any injury to result from them, on the contrary, they are, when in combination with stable manure and other putrescent matters, of decided advantage to the majority of plants, particularly the strawberry and tomato, which I have never seen equalled either in quality or quantity of the fruit.

NOTE.—In the article on "Strawberry Growing," in the December number, I am made to say "coal and ashes" instead of *coal ashes*; "connect" instead of *correct*; "1 bushel of salt" instead of *1 barrel*.

THE PROPAGATION OF GRAPE-VINES.

BY MR. T. B. MINER, CLINTON, N. Y.

I propose to make a few remarks on the propagation of Grape-vines in out-door culture, which may be either by cuttings or layers.

Cuttings should be clipped in the fall, when the vines are trimmed, as a general rule; but if the trimming has been neglected, they should be cut as early as practicable, and before the sap commences to flow.

When the joints are long, two eyes to a cutting will do; but in short-jointed wood, leave three eyes to each, cutting off the canes with a sharp knife, about an inch from the upper bud. I frequently

have 30 to 40 thousand of such cuttings to secure in November against injury during the winter, and my system of precaution is as follows:

In the first place, while the vines are being trimmed, and the surplus wood cut out in whole canes, from 4 to 10 feet long, I employ boys to cut them as above, two and three eyes to each, and endeavor to leave no canes exposed to the sun or drying winds longer than one day. At the close of each day I set a hand with a large basket, or a wheel-barrow, to removing the cuttings to their winter position. On some slightly rising ground, where water does not stand during heavy rains, or thaws of snow, the surface is smoothed over in the shape of a bed, about 6 feet wide, and as long as desired, and the cuttings are spread in layers, two to three inches deep, as compactly as they can be laid, without allowing them to cross each other. No care is taken to have the upper ends lie all the same, as that is attended with a good deal of trouble, and amounts to but little practical good, as the upper buds are easily distinguished when they are set in the spring.

As soon as a tier of cuttings has been thus laid, it is covered about two inches deep with earth, taken from the soil at the sides of the bed, and then another layer of cuttings is spread, and covered in like manner, till all are protected, taking care to put on a double covering of earth for the last course, and also covering the sides so that no cuttings will become exposed by rains.

About the first of May, I take these cuttings and set them rows from two to three feet apart, when I plow out the trenches to receive them, or if done with the spade, from 12 to 15 inches only.

The cuttings are set, from 12 to 20 to the running foot, with the upper eyes as near the surface as they can be adjusted; and if slightly covered in covering the soil, so much the better. The earth is packed firmly around them, by treading on each side of the cuttings, as close to them as possible. They are set at an angle of 25° to 45°, which often allows the lower buds to shoot up, when the upper ones fail to break bud.

There is scarcely any drouth so severe as to destroy cuttings when set with the lower eyes from 8 to 10 inches below the surface of the soil. From half to three-fourths of all cuttings so set, if not previously injured, will generally grow.

In cases where grape-wood is scarce and valuable, the cuttings may be laid *horizontally*, in trenches only two inches deep, and covered with a light soil that does not bake and crust over. The covering in this case also must be firmly packed around the cuttings, and kept moist by watering in dry weather.

On this system every live bud will germinate and make a plant.

Another method of propagation is to a slight excavation along the rows of mature vines, and lay down the surplus wood in the spring, peg it in position, and after the shoots have grown a few inches cover the old wood with earth an inch or two deep; and in a week or two add another slight covering when the shoots are well advanced. This system produces a vine from every sound eye, and equal in size and value to those grown from cuttings two years old.

THAT MAGNOLIA CONSPICUA.

BY MR. R. BUIST, PHILADELPHIA.

The readers of the March number of your valuable *Monthly* were no doubt surprised at Mr. Elder's conclusion about the stock being *Liriodendron*. Will your intelligent correspondent examine that tree again, and see if *Magnolia acuminata* is not the stock? It was inarched, not grafted, by the old and respectable firm of the late D. & C. Landreth, who introduced many very fine trees and plants, and did not consider them *novelties* or *specialties*, merely because Bombast was not a partner of their house.

Mrs. Montgomery, a very amiable lady, and a great lover of trees and plants, planted that tree about 33 years ago. I believe she still lives to enjoy its beauties.

Nearly all the plants sold now are seedlings of *Magnolia conspicua*, or layers from seedlings, not one in a hundred equal to the parent species. They inarch or bud very readily upon *cordata* or *acuminata*, and graft freely upon *purpurea*. It might be of service to know if any person has succeeded with it on *Liriodendron tulipifera*.

FAST GROWING TREES FOR LIVE FENCES

BY A "SLOW MAN" OF IOWA.

Good for you, *Mr. Monthly!* You hit the right nail on the head that time, and no mistake, in your note at the bottom of the *White Willow* "omnibus," by our "Fast" friend "of Illinois," in your December number. You are joking too; but the joke is carried quite too far. I have no hesitation in stating my feeble judgment before the public, by saying, that I believe the "White Willow Fence" to be the great unaught humbug, flying broadcast over the whole prairie region of the North-west, of the spring of 1863.

There is one redeeming quality to this "Tree

Fence" humbug, which is, that White Willow cuttings will probably be worth all they cost to the farmers of the prairies, for trees for wind-breakers and for timber.

Now, friend Meehan, I do not wish to say one word in controversy with any of your correspondents; but simply to give a word of caution to the immense number of horticulturists and farmers who have engaged willow cuttings to stick out in the spring, to *make a live timber wall fence*. Reflect a moment on what you are doing! You are going universally into an untried experiment! The Illinois farmers' papers say the experiment has been tried and proved successful! "The peddlers of these cuttings carry the best of *certificates* with them from good authority!" Sorry for all this. That is the very best way to humbug you. Do you believe that every body was humbugged in 1835 to 1839 by the "*Multicaulis*" without good evidence that *silk* could be made in America as well as Italy, Spain and France!

Let us ask the former Commissioner of the Patent Office who reported so largely and highly upon the cultivation of *Tea*. What is the price of American Tea now? I wish also to ask the Prince of the *Dioscorea battatas* if they have plenty of that esculent on Long Island? We are nearly out of the vegetable in Iowa!

Professor Turner, of Jacksonville, Ill., told us some years ago, that he had tried every tree and shrub that he thought there was any prospect of making a live fence, and the Osage Orange had proved far the best. How much better it was for one man like Professor Turner to have thus experimented with live fences of, than for the legion of Willow cutting purchasers to try the experiment for themselves.

I have before me a letter from a most worthy and reliable nurseryman of Illinois, who says that the greatest and best White Willow growers of Illinois will not hazard their reputation by recommending it for a fence.

I would most earnestly advise those who have engaged the cuttings to *set them out for groves*, and when they succeed as fences, you have the material on your own place to go into the fencing,—*provided you get the genuine*;—for I have it from good authority, that large quantities of the common Willow of Illinois has been cut and tied up in neat little bundles, to help fledge the wings of the humbug.

To your "Fast" correspondent I would say that I have no doubt he is honest in recommending the White Willow for a fence. But we must remember that the age of *humbugs* is not past yet, and I be-

lieve no class of men are more subject to it than the horticulturist. Watch, and again I say watch, and pray that we may not be tempted beyond our better judgment.

P. S.—Will the Illinois papers please copy the above, and favor their numerous readers who are interested, with "a hint to the wise."

[One very suggestive property of the "omnibus" Willow has been overlooked. It is said, that to make the rebel soldiers fight like savages, they put gunpowder in their whiskey. As Willow charcoal is the principal ingredient in gunpowder, the introduction of so much of this simple element of warfare into Illinois, is ominous of a loud explosion in the future.

By the way, we saw a whole car load recently on the way from this Quaker city to the far west; and on getting at a piece, found it was not White Willow at all, but *Salix rigida*. This remark, however, by way of accuracy, for we do not see why it should not answer every purpose as well as the *S. candida* or White Willow. So also the Bedford Willow (*S. Russelliana*), Shining Willow (*S. lucida*), the Varnish Willow (*S. decipiens*), Black Willow (*S. nigra*), Golden Yellow (*S. Vitellina*), all fast growing kinds, of arborescent character.

Indeed, as a fast growing tree, keeping in view the purpose of forming a screen, and making use of the wood for timber purposes, we should prefer the Bedford to the White Willow.

Our correspondent will see that we have "softened down" one or two of his expressions. They were probably correct, but as the matter would be difficult of proof, it is best to pass it.—ED.]

FRENCH HYBRID GLADIOLUS.

BY WALTER ELDER, PHILADELPHIA.

I observe in the catalogues of H. A. Dreer and R. Buist & Son, of Philadelphia, J. M. Thornburn and A. Bridgeman, New York, and B. K. Bliss, Springfield, Mass., that they have made a great increase to their collections of French Hybrid Gladiolus. The unequalled improvements made upon this genus of flowering plants in late years, far outstrips the fondest ambitions of former years. In the splendor of their blooms, the beauty and diversity of their colors, and of their dazzling brilliancy when the sun shines upon them, they look like the finest fabrics or choicest metals studded with shining diamonds,—far too glittering for the eye to rest upon. And in these qualities they surpass every other genus of blooming plants of out-door culture and of in-door culture; only the

Cactus and Euphorbia genera can compare with them. They are of simple culture. Spread a good coat of rotted manure over the ground, dig a foot deep, mixing manure and soil well, then plant the bulbs; when in beds, in rows fourteen inches apart, and six inches apart in rows, and three inches deep; and keep weeds down by frequent hoeings during their growth, their splendor is greatest, where all other blooming plants droop with the heat in July and August. From the first to last of April is the time to plant. In planting in borders among other flowers, three at least should be in a clump; set in a triangle form, and before they begin to bloom, put a stake in the middle and tie a string to it and to each plant, to support them against high winds. They need no waterings, nor other care but keeping them free from weeds. In late fall, after the frost has injured their tops, dig them up; lay them in a shed for a few days to dry; then cut off the tops, and put the bulbs in pots or boxes mixed and covered with dry sand or soil, and keep them where they will not be injured by hard frosts,—a slight frost will not hurt them. Every lover of flowers should get a few of the French Hybrid *Gladiolus*.

MOUNTAIN SEEDLING GOOSEBERRY.

BY L. S. MOTE, W. MILTON, OHIO.

I notice on page 56 a representation of the above fruit, which I have had in bearing for two seasons past, and am pleased with it. The "description" given there will do very well, and the outline of the fruit correct in size, etc.

I herewith send you a rough sketch of some berries of this variety I raised last summer. The bushes are young and the fruit did not attain its full size. I also have one of "Downing's Seedlings," which is an improvement on Houghton's, being at least one-third larger in size. I am still experimenting with seedlings. Think I have one or two that is worth propagating from.

[The drawing represented berries even finer than those we figured in the page referred to.—Ed.]

New and Rare Fruits.

HUYSHE'S VICTORIA PEAR.—There is, perhaps, no fruit so capricious in its periods of ripening as the pear. The above sort, for the most part, ripens before Huyshe's Bergamot; but this season it is keeping longer than it. Mr. Huyshe writes me, that he has two or three hundred specimens

that are likely to keep well for three weeks to come. What is still more remarkable, it is far superior in quality to the Bergamot, which has hitherto been considered the better pear of the two. It may, indeed, be considered one of the most delicious pears known.

I ate part of one to-day, January 15, and compared it with *Joséphine de Malines* (some of which have ripened prematurely), a standard of excellence, and was interested in the variation of their flavor, yet both delicious. The *Victoria*, with the melting flesh and abundant juice of the *Marie Louise*, has a delicious perfume, recalling that of *Gansel's Bergamot*. The *Josephine de Malines*, like melting and juicy, has a flavor quite peculiar to itself and equally gratifying.

It would seem, from what I learn from the reverend gentleman who raised the *Victoria* and the *Bergamot*, that the latter, this season, has been fine only from a south wall, so that it probably requires a warm season to bring out its qualities.

The *Victoria* is hardier and "is always good," so that it may be planted as a pyramid in any of our counties favorable to pear-culture. This very valuable pear is likely to supersede many of our winter varieties, such as *Glout Morceau*, *Beurre Diel*, and others, not only because the tree is hardier, but from its flavor being, like the *Prince of Wales Pear* (a new kind raised by Mr. Huyshe, and recently reported on by him), quite "exquisite."

Many pears have ripened here prematurely this season. *Winter Nelis*, *Glout Morceau*, *Beurré Diel*, and some others ripened early in November, and were not up to their usual quality.

Mr. Scott does not give a good description of the *Easter Bergamot*, or *Bergamot de Paques*. This sort keeps till April, and is always crisp, poor and worthless.

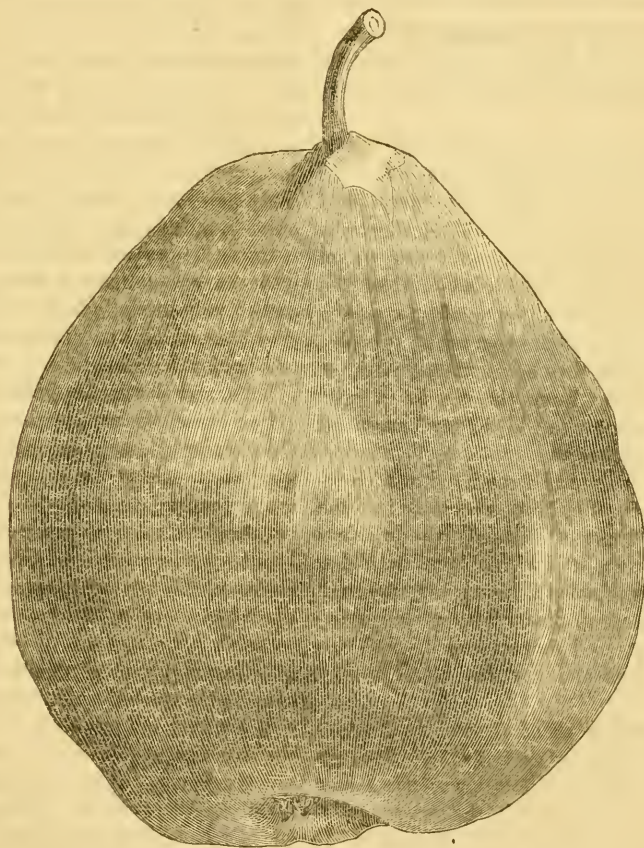
The *Doyenné Goubault* is also a crisp ear, seldom or never becoming soft, and keeping till June. This is, by some mistake, wrongly described in the "Manual," and in one or two French Catalogues. The pear is large and nearly round, like its congener, *Bezi Goubault*, and, like that, it will keep plump and sound till pears come again, and may then be thrown away.—*T. R., in the Cottage Gardener.*

THE PEAR BRITISH QUEEN.—This noble fruit is a seedling raised by Mr. Ingram, Her Majesty's gardener at Frogmore. It is large, pyramidal, slightly irregular in outline; skin smooth, rosy-crimson next the sun, otherwise much covered with

russet; eye small; stalk stout, commonly inserted obliquely; flesh buttery, melting, sweet, and briskly aromatic. Ripe beginning of October. The stock is in the possession of Mr. Turner of Slough.—*Cottage Gardener*.

YORK AND LANCASTER.—Among the new varieties of fruit sent from Nova Scotia for exhibition at the Royal Horticultural Society's Great International Show of Fruit in October last, were two Ap-

ples which attracted especial admiration: one was called the Chebucto Beauty; the other was merely styled a Nova Scotia Seedling, but as it seems worthy of more general recognition, we have named it the "York and Lancaster Apple," on account of its resemblance in coloring to the old York and Lancaster Rose—blotches and streaks of crimson on a nearly white ground. The apple is fine, large, and well formed, and not only pleasant to the eye, but also good to eat.—*Proceedings for January*.



SELLECK PEAR—From Mr. F. R. Elliott.—**FRUIT:** *Size*, large; *form*, ovate obovate, obtuse pyriform, angular, sometimes ribbed and uneven surface; *color*, clear light yellow, with patches of dull mouldy green, and patches and marblings of clear russet, russet around the stem; *stem*, short, curved, with a slight knob or lip at base; *calyx*, small, with short, pointed closed segments; *basin*,

acute, compressed; *core*, small; *flesh*, a little coarse grained, white, almost melting, juicy, sugary, aromatic; *season*, autumn.

The Selleck Pear originated in Columbus, Vermont. The tree is a thrifty grower, healthy, hardy, productive, and very valuable as an orchard market sort.

The Gardener's Monthly.

PHILADELPHIA, MAY, 1863.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

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ON SYMPATHY IN GARDENING.

Gardening has some disappointments. In this article we shall attempt to point the way out of one of them.

We doubt whether there is a soul who has not at some time or other felt the desire to own a little tract of ground, where it might indulge the natural propensity to dress and to keep it. To garden or to farm is 'the ultimate ambition of most commercial men. City life is endured for a while that the means may be more speedily acquired to gain a comparative retirement to the country or suburbs. Hundreds annually, as they accumulate wealth, or even mere competency, leave the city for a rural life; a life, we are sorry to add, in most cases of trouble and disappointment.

A lengthed experience has acquainted us with innumerable instances of citizens, who went into the country with high hopes of pleasure, who in a very short time became disgusted with things, and either returned to the city crippled as much in purse as in their hopes; or accepted the country as their inevitable fate, and remained morose and miserable, a burden to themselves and a curse to all around them.

Is this the natural result of that love of nature which blossoms so young in every breast? Is there really an instinct within us that urges us to love trees, and fruits and flowers, only that we may find them coquetting with our cherished feelings? Is the strong love for gardening and rural life, which we all feel, only an invention of the enemy to lure us to the destruction of our earthly happiness? Or rather is there not some mistake in the way we enter on the chase,—a slight weakness as it were stealing over our sympathies, and which the warm breath of common sense would resolve into utter nothingness? Is gardening really the bore it seems to be? Or is the trouble of our own creation?

Nature has imbued us with a desire for sympa-

thy. We love things in proportion as others love them. A mother has a natural love for her offspring, as we all have a love for natural beauty,—but she takes the more pleasure in her babe in proportion as others love it too. She will love her child though all the world despise it; but there is pain mingled with that love which makes it hard to bear, and her earnest prayer is that it might be ordered otherwise. And so it is with our love of gardening. If we have no ones sympathy, it soon ceases to be a pleasure. Human nature was never intended to stand alone.

It may be, and has been said by philosophers, that all we do springs from a desire to please ourselves; that every good or every bad deed is the effort of nature to fill some void or supply some want of each individual acting. That this principle should not degenerate into a sordid selfishness, the desire of pleasing others is also implanted within us as a corrective, and thus one of the surest means of personal enjoyment is the conferring of happiness on others while pursuing it oneself.

Does this idea of pleasing our friends ever enter into the calculations of those who build country seats? very rarely indeed. A beautiful site, beautiful scenery, an opportunity to enjoy what we feel to be enjoyable in nature, is enough; and the house is built, and the garden is laid out.

For ourselves, we would think more of being in the vicinity of some one or more of like tastes and sympathy with us, than of all the natural advantages the most beautiful spot offered without. And yet we yield to none in our admiration of natural beauty in whatever form presented. Our roses may be beautiful, but we want others to see and enjoy them too,—and our Pears, on which we have spent so much labor and skill; of what use is it all, if it is to end in the mere mouthful, and the gustatory gratification resulting therefrom.

We would say to our friends about entering into the experiment of rural life, first and foremost look out for a spot where gardening is fashionable,—where horticulture has not degenerated into a mere shady retreat from the summer's sun,—a means of stocking a goodwife's kitchen with table necessaries; or a farmer's question of "Will it pay?"—but where gardening has been elevated to its proper position as one of the fine arts, in which talent and taste and skill have been passionately blended; and where the greatest pleasure of the proprietor consists in pointing out the ever varying beauties to his sympathizing friends. We never read that Robinson Crusoe thought much of gardening; and we are well assured that he, whoever he may be, that would

most hunger and thirst after gardening, would ignore it altogether if thrown "on the wide world alone."

And to those who already have a slight taste of gardening enjoyment, we say, if you would increase your pleasures, cultivate a social intercourse between those of like nature with yourselves. This you can do by private calls, by family meetings, by social reunions, horticultural meetings, and floricultural and pomological societies,—and in this connection we would say to the managers of such societies also that their want of great success is often to be traced to a lack of social feeling in those engaged. The experience of many a horticultural society proves this. Over twenty years ago we knew of a small local "flower show," that started, and for a time was tolerably successful. Some four shows were held annually in the same "Town Hall;" but it gradually dwindled away to a mere shadow of a great name. It so happened that three of its members understood the "want," and they agreed that the "show" for one season should be held successively *on each others grounds*. It was a magnificent success. The particular horticultural friends of the family had an admirable luncheon prepared for them; and the whole public for that day admitted to the grounds by payment of the regular admission ticket,—rather high to secure a select attendance,—rendered the meetings of the society something to be looked forward to by the whole community. *To this day* this society exists, new members being continually added, and the exhibitions now held on one members grounds, and now on anothers, are the most popular and delightful of any we know.

Coming nearer home, why is it our Fruit-grower's societies are generally more popular and better sustained by the public than the "Horticultural Societies"? Not for their greater importance or usefulness; but because of the greater opportunities they afford for social intercourse between men of similar tastes. They are usually held at points distant from the homes of most of the active members, and the pleasant evenings spent at the hotels in Pomological chat, have as great a charm as the more public debates. The Pennsylvania Horticultural Society was never so popular as when it provided a good substantial dinner for its active members,—not that the mere dollars or cents involved were any object to those who participated; but the social feeling engendered was the strong point of success.

We refer to these instances, not as subjects for exact imitation, but as illustrative of our point, that to derive pleasure from our pursuits we must have

social sympathy; and that this is particularly true in gardening, where the meaner stimulants of "profit and loss" hold no place.

Lovers of gardening should be the most zealous of propagandists. It is an *ism* for which they can afford to suffer a species of martyrdom. The more others love it the better for them; and thus, while ministering to a purely selfish gratification, they have the consolation of knowing that they are communicating to other hearts the pleasures they themselves enjoy.

BOUQUETS AND FLORAL DECORATIONS.

Not many years ago a garden meant little more than a collection of pretty flowers; and

"To pore where babbling waters flow,
And watch the opening roses blow,"

comprised most of the enjoyment derived from gardening. Latterly it has been brought to speak, as it were, to the mind; and no garden now is considered worthy of the name, unless some *design* is manifested in its arrangement. In a place that has any pretensions to taste, every thing has an *expression*; and we are not only to see that it is *pretty*, but to understand *what it means*.

In the past age to which we have referred, flowers were mixed any way together. The tallest had, perhaps, the back of the bed; and along in the front, and so that they could be easily seen, the lower growing kinds were set wherever a space could be found which any one would completely fill. It was simply a collection of flowers, and meant nothing more.

But with the progress of refined taste, the system of massing flowers was introduced; and borders, parterres, and ribbon beds, filled with flowers arranged in accordance with the laws of harmony in colors, so entirely displaced the old system, that many a beautiful flower, well worthy of cultivation for its own sake, was entirely lost to cultivators, and are now only known in the works of the botanist, or mere scientific man.

The system of massing flowers according to their colors originated with the French, who are ever foremost in matters of elegant taste and social refinements; but has been brought to its greatest perfection in Modern English gardens. To the English also is due the credit of being the first to move earnestly in the matter of reform in bouquet arrangements, and floral decorations generally although the French as usual are ahead in the first adoption of the modern principle.

A bouquet, as most generally seen, is a gross

affair. With us their value is usually estimated by their size, or by the rarity of the flowers; but in the last case so great is the popular ignorance that a Cabbage blossom can nearly be palmed off as a rare West Indian orchid; and a five dollar bunch of weeds rarely seen, makes a "bouquet" more highly valued than the richest nosegay of the choicest Roses. Baskets of flowers, in order to be "charming," must have "plenty of Red," the fair admirers not having progressed much in taste since the times of the Indians, in whose eyes William Penn's red blankets were more attractive than the prettiest natural beauties their native land possessed. The day of this floral barbarism has, however, nearly passed away; and bouquets and designs are in future to come under the same laws of taste, as our flower-gardens; the flowers to be massed in regard to their colors, grouped according to their forms, and with due regard to their associations and purposes of ornament.



We have referred in back numbers to the efforts made the two past years by the London Horticultural

Society to introduce this much desired change; and we have figured some of the designs which have had premiums awarded them; but we think our readers do not yet fully understand how charmingly effective the new style is. To make the matter plain we give the foregoing sketch of one made only of three materials,—namely, flowers of the Pelargonium, Lily of the Valley, and the green leaves of both.

In the plan the flowers are arranged in a shallow glass dish, made expressly for it, with an upright shaft and crowning dish of similar material which can be taken apart. Clay or sand is set in the dish, and the flowers and foliage dibbled in. It will be seen in the engraving that the outside course of Pelargonium leaves, is set in so near the edge that they overtop, and gently declining, rest on the table below. The Pelargonium flowers then follow, not crowded, then Lily of the Valley leaves, then the flowers of the Lily, with some of its leaves intermixed. The same course is taken at the top with the exception that a few Maiden Hair fern leaves are interspersed below. How simple all this, and yet what more beautiful? No one who has ever seen it once, would take any pleasure in the "designs" we commonly see.

The principle we have here sketched out is to be applied to baskets and bouquets as well as to table ornaments. Not more than two or three colors should be employed, and usually one color should be made up of one kind of flower; and true taste will consist in the selection of color and contrast of form, as well as in the genius for selecting the proper forms of green material for relieving the weight of color.

In England no one has given the subject more attention than the Misses March, to whom we believe most of the valuable premiums offered by the Horticultural Society of London have been awarded. We will conclude our notes by giving a list of different groups of flowers which they have found from experience to be highly effective.

SCARLET FLOWERS.

1 *Poinsettias*. With border of Begonia leaves or Ivy. Stem of Ivy or of Passion-flower; Greenhouse Ferns intermixed (a good decoration for the middle of winter from florists). From eight to twelve flowers are required, according to the size; and the green leaves add greatly to the effect.

2 *Scarlet Geraniums*. With Ivy border and Geranium foliage. The stem of wood Ivy.

3 *Arbutus Berries and Leaves*. With border of plain or variegated Holly and pieces of Yew, or

other evergreen foliage intermixed. The Scarlet Berries should droop over from the upper glass.

4. *Verbenas*. In bunches, seven below and five above, or in double rings; border of Fern, Ivy, or Virginian Creeper, and the foliage of Myrtle, Bilberry, or young Chrysanthemum shoots. The stem may be of any of the summer creepers. Scarlet Verbena may be mixed with purple King Verbena.

5. *Ancmones*. Either all scarlet, or mauve and scarlet, the mauve in the centre—the border of Arbor Vitæ or of Ivy, and the same leaves intermixed as foliage. Some of the flowers should be tolerably high up the stem, and thence decreasing in height to the border, where they will be low.

CRIMSON AND PINK FLOWERS.

6. *Geraniums*. In clusters, seven below and five above. The border and foliage of the same. Lily of the Valley or Deutzia in the centre. The stem may be of Lycopodium Cæsium, or of any greenhouse or hardy creeper.

7. *Chinese Primroses*, either all pink, or mixed with white. The border and foliage should be composed of the leaves of the plant only, and these should be previously immersed in water to prevent flagging. Four or five clusters of the flower should be placed below and three above, within circles of the smaller leaves, the larger being used for the border. This is a very beautiful decoration.

8. *Large Pink Roses*. Seven below and five above, with border of Fern and Rose leaves. There should be plenty of Rose foliage intermixed, and two or three buds may be twined round the stem, or else Ageratum or the drooping Campanula may be in the centre, the latter also falling from the upper glass. Jessamine makes a good stem, if the Rose foliage is of sufficient length.

9. *Large Damask Roses*, mixed either with yellow or pink Roses.

10. *Roses de Meaux*. Rather numerous inserted, with flowers and buds wired on to the stem, together with a spray of the leaves. There may be a close circle of purple Heartsease round the Roses, above and below. The common Goliah Heartsease is the best, being large, and having less of the yellow marking.

11. *Rhododendron or Kalmia*, with their own leaves, the border of Ivy and stem of the same or of Ribes. If the flower heads are large, five below and three above will be sufficient, otherwise seven and five. This is a very easy and effective group.

12. *Pæonias*. Seven flowers below and five above; border and stem of Ivy. Smaller ferns and the foliage and berries of the tree Ivy add greatly to the effect.

13. *Lilium lancifolium*. Border of Ivy or Begonia; dark hot-house leaves intermixed, and pieces of Lycopodium formosum. When the White Lily is used, Caladium and other spotted stove leaves may be intermixed. This flower is better suited to baskets than epergnes.

14. *Cactus* may be treated in the same way as the Lilies. The drooping kind, called Epiphyllum, is very beautiful mixed in the epergnes with stove ferns and foliage.

15. *Carnations*. About fifteen flowers are required below and eight above. Deep crimson Carnations may form the out circles, then bright pink, and Rose color nearest to the stem. There should be buds and leaves fastened up the latter, and the foliage of the Carnations intermixed with the flower, but sparingly in the upper glass. The border of Fern and Ivy.

16. *Anne Boleyn Pink or Picotees*. Arranged in the same way, but with numerous flowers.

17. *Petunias*. Arranged exactly in the same way.

18. *Gloxinias*. The same. The flowers should spring from their own beautiful leaves, and any choice of ferns and foliage may be added. These look extremely well both in epergnes and baskets. The pink and purple may be mixed, and there are some of white, and white mixed with rose.

19. *Flowering Currant*. This should be arranged in numerous hanging bunches of the bright pink flower, same should cover the stem, its own foliage should alone be used, with the exception of an Ivy border. It is extremely graceful, but not very lasting.

BLUE FLOWERS.

20. *Blue Iris*. Seven flowers below and five above, with one or two buds round the stem. The Iris leaves, Ferns, and Lily of the Valley leaves should be intermixed. The border either Ivy or Fern. The brown and orange-shaded Iris looks well mixed with the blue, and should be kept in the centre.

21. *Nemophila*. This flower should be inserted numerously, like Pinks or Rose de Meaux. The border of Fern or Ivy. It is very pretty in the smaller sized stands, and there are few flowers of the same turquoise blue. It will last a day very well.

22. *Delphinium formosum*. Ten bunches of the flower below and seven above, and three or four half way up the stem. The border of Fern or Ivy, and the foliage either Lily of the Valley leaves, Bilberry, or young Chrysanthemum shoots. The color is the most splendid of all the blues.

23. *Blue Salvia* can be treated as the above.

24. *Forget-me-not, with Lily of the Valley*. The latter should be placed in the centre; the Forget-me-not in a ring, or in clusters round it. The bor-

der of Fern or Ivy. A quantity of large, bright, and very blue Forget-me-not looks well alone, especially in oval glass baskets.

PURPLE AND MAUVE FLOWERS.

25 *Lilac*. Ten branches of the flower below, seven above, and some round the stem: Lilac foliage and Ivy border.

26 *Cinerarias*. Seven flower trusses below and five above. Lily of the Valley or Deutzia in the centre. Ivy border.

27 *Pansies* look very well alone in the baskets and small stands, with appropriate foliage.

28 *Chineasters*. Seven below and five above, with one or two smaller flowers and buds in the centre. The purple flowers may be mixed with pink Chineasters, or yellow Dahlias.

29 *Wistaria*. Four or five bunches should be placed below and three above; the border should be of Irish Ivy, and there should be some good fern fronds to intermix, as the foliage of the Wistaria will fade.

30 *Violets*. Look well in the oval and round baskets with foliage alone.

31 *Fuchsias*, in which purple predominates, look well mixed with larger flowers, such as pink Roses. The Fuchsias should hang over the upper glass, and be arranged around the stem, so that the drooping nature of the flower may be shown to the best advantage. They are especially adapted to twine round the glass handles of the baskets. No flower equals them for this kind of effect.

YELLOW OR ORANGE FLOWERS.

32 *Primroses* can be used alone or with Violets in the centre; the wild blue Hyacinth may also be mixed with them. The border should be of Ivy, and the stem of Wild Rose or Wood Ivy. The Primroses should be arranged within a circle of leaves as if growing, and the number will depend upon their size. It is a flower better adapted to the larger stands.

33 *Laburnums* should be arranged in numerous drooping branches round the border stem, and upper glass. The border of Ivy.

34 *Yellow Azalea*. Seven bunches below, five above, its own foliage chiefly a border of Fern or Ivy.

35 *Calceolaria* or *Golden Rod*. Both as above.

36 *Yellow Dahlia*, mixed with purple or mauve Dahlia, or with purple Chineaster. Same mode of arrangement.

37 *Escholtzia*. This flower, like Anemones, should be numerous inserted, and should rise in height as the stem is approached. It looks extremely well with an Ivy border, and a circle of dark crimson or purple Dahlias around it.

36 *Nasturtium* or *Tropæolum*. These flowers may be mixed in shades, from deep orange to light yellow. They should be rather numerous inserted like Anemones rising high at the stem, and a branch of the plant with flowers should be wreathed round the upper glass. Its own light green foliage is sufficient with a border of Ivy.

WHITE FLOWERS.

38 *Camellias*. A border of Ivy, or of greenhouse Fern, or of Ivy and Maidenhair together; three Begonia leaves may be placed between the stem and border, if they are not too large. White Heath or Lily of the Valley should be in the centre. *Lycopodium Cæsium* in long sprays looks well with the choicer kinds of flowers, twined round the stem. Maidenhair Fern is an immense improvement to this group, relieving the flatness of the flower.

40 *White Lilac* should be arranged in numerous small bunches round the border, stem and upper glass; the border should be of Ivy, and the foliage of Lilac mixed with Arbor Vitæ, &c. Nothing can well be prettier.

41 *Syringa* should be treated exactly like the Lilac.

42 *Azalea* can be used alone, or with Heath or Lily of the Valley, or it may be mixed with pink Azalea. The stem may be of Passion-flower or *Lycopodium Cæsium*, and the border either Ivy or Begonia leaves.

White Stock looks well in baskets, with Delphinium in the centre; or white Chineasters may be used with the same blue.

44 *Water Lilies*. These look best with a border of Ferns, and an inner border of Ivy on which the flowers will rest. Seven Lilies below, and five above, will be the number, unless they are small, and there should be a flower and some buds in the centre. Wood Ivy makes the best stem, and there should be a good deal of Ivy intermixed; small reeds also look well in this aquatic group, and Forget-me-not. In the baskets Water Lilies mix extremely well with blue Iris, or the large shrubby Veronica.

From this outline of what has been done in the way of illustrating the new mode of making bouquets, and arranging flowers as table decorations, the reader will fully understand the main principles. A wide field is open to the enterprising florist. There is no doubt the change will be highly popular.

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.

PROPAGATING THE ROSE—*J. S. M., West Milton, O.*—"I would like to know the most successful mode of cultivating the rose. I have been looking over all the back volumes of the *Gardener's Monthly*, and find but very little said about it throughout the whole series. It may be such an easy matter with those in general who understand it, that they may suppose all know how, and, therefore, it is not worth putting in the papers. My failures prompt me to ask for information. If all the Remontants are hardy enough to withstand our winters in this parallel (lat. 40°, long 84° W.), will the Bengal, Tea, Bourbon and Noisettes do the same, without being covered with earth? I have recently procured a few of those kinds. The mercury, for two winters past, never fell to zero, and this winter not lower than 8° on two days, and last winter only once that low, according to my record."

[If cuttings are taken before the wood gets very hard, or, in other words, "quite ripe," there is no difficulty; or if they are ripe, if they have been grown tender and succulent,—such, for instance, as partial shade would effect,—there is no other secret. Well-ripened hard wood of nothing strikes well. Native grapes are worse to strike than foreign ones, only because the latter are grown in doors, and the wood is, therefore, more "spongy." Natives raised under glass strike as well. Cuttings of out-door wood are, therefore, put in water or packed in damp moss for a few weeks to soften. This by way of illustration. You must make rose wood spongy by some means before it strikes well.]

MISCELLANIES—*J. M. S., Toronto, C. W.*—"1. Is *Castilleja coccinea* a root parasite or not? In my efforts to transplant our native wild flowers into my garden, though successful with most, I have hitherto failed with this.

"2. Will the seed of *Cypripedium spectabile* and *C. pubescens* grow readily? I have good plants of both species (transplanted from the woods) established in my garden, and if the seed will germinate, I would like to send some to friends at a distance.

"3. Will the Pansy hybridize with the various species of wild Violets of our woods?"

"4. What is the least troublesome method of obtaining a supply of mushrooms for family use?"

"5. Is there any efficient remedy or any effectual means of destroying that pest of the fruit-garden, the *pear tree slug*? Last year I nearly lost about twenty of my finest dwarf pears and cherries by their ravages. I tried nearly every thing. I applied strong soap-suds; I dusted them with ashes in the morning before the dew was off; I tried lime similarly; I beat the bush or tree with a spruce branch; and I was at last compelled to resort to hand-picking in order to save my trees. I find that the various species of *Cratægus* in the neighborhood are infested with the slug, and breed on it in myriads.

"6. Some of my pear trees were very much injured last year and the year before by a disease which I cannot find anywhere described, and upon which I would very much like information. The tree buds swell and the young leaves appear healthy, but soon after the tree has blossomed, the leaves begin to change color. After a short time, the whole leaf (both surfaces) appears covered, more or less, with blood-red wart-like excrescences. These look like the work of a fungus, and have the effect of nearly destroying the tree. Some time after midsummer the tree begins to recover, and in the fall the leaves retain no sign of the disease, beyond black stains. Still, the growth of the tree is much retarded. Can you give me any information on the matter, and tell me how to remedy the evil?"

[1. It is an annual, and must be re-sown every year. It is, however, very difficult to raise, requiring a wet, swampy soil.

2. We suspect you will find the difficulty of raising this from seed almost insurmountable.

3. We have known of its being tried. It is possible, and is worthy of trial.

4. The best treatise we ever read on the subject is given by a correspondent of our journal, p. 117, Vol. I.

5. Slaked lime is usually found of use. Where the trees are not large, we should prefer either hand-picking, or, if convenient to get, hot water; try that, heated to 130°. It is the best remedy against all soft-skinned insects where it is convenient to apply it.

6. We should be glad to have a few leaves for examination in the proper season.]

FUCHSIAS—*A Subscriber, Lowell, Mass.*—"I find often some of the leaves, apparently fresh and

strong as any, dropping from my healthy and fast-growing Fuchsias.

"Also: at times the leaves on my seedlings and slips of these plants will curl and twist up, keeping still fresh and green.

"House 45° to 50° by night. Never in day, by fire-heat, over 60°, the sun running it up to 70°. The Fuchsias have been started since January."

[Most likely this is the effect of red spider, which a common pocket lens will soon ascertain. If so, heat water to 130° Fahrenheit, in which soap-suds and sulphur have been mixed, and dip the plant in for a few seconds.]

ANALYSIS OF THE LEAVES OF THE APPLE TREE.

—Our friends seem to hold us to a rigid accountability in the various scientific matters connected with horticultural pursuits, and here we have one questioning the accuracy of "our" analysis of the leaves of the apple tree, which appeared in a late issue. To this we do not object. Strict accuracy alone sustains the high repute of any journal. But it so happens that the analysis is not "ours." It appeared in the column devoted to "Domestic Notices," where we collect "intelligence" of what is going on in other quarters. We are careful, where we can, to give the proper credit, whether for accuracy or error, and we did in the instance referred to.

As for the "analysis," we may frankly say we do not place the same reliance on their unvarying accuracy some do. Vegetable physiologists well know that the roots of plants have not the power of rejecting every kind of food they approach. Colored liquids have been made to circulate through sap-vessels, and poisonous matters have been found by experiment to be as easily taken into the system of plants as in animals. This alone would teach that analysis of a plant's structure would very likely vary in some degree. Moreover, chemists themselves have proved analyses to vary. We have seen an instance where, in thirteen samples of pea-vines, all from the same seed, but grown in different soils, *all varied* in their analysis, particularly in silica, varying greatly, too, in this item, —from 1 or less, we believe, to over 20.

Our friends will thus see that our opinion is, that the apple leaf analysis may have been correct, and yet, to our correspondent's experience, be an "erroneous statement."

RAISING EVERGREENS, GRAFTING PÆONIES AND BORDER CALADIUMS—*J. M. F., St. Paul's, Minn.*
—"We have a few seeds of Norway Spruce, Red

Cedar and Arborvitæ, which we intended to mix with sand and set them out to freeze, in accordance with your "Hints" in the November number. Before the work was done, however, the December number was received, in which you recommend a correspondent to keep his seeds in a pit or cool greenhouse, *free from frost*. Now, I should be glad to know which is the *best* plan, as we have but few seeds, and wish to make the most of them, having never succeeded but once with evergreen seeds?

"Please tell us, also, how to propagate the Tree Pæony. Some of the books say it may be grafted on roots of the herbaceous sorts. If so, how is it to be done, and at what time?

"You have spoken of the Caladium as a showy plant for the yard in summer. Can it be wintered in a common greenhouse, like some other hothouse plants?"

[It is such evergreens as Holly, Red Cedar and a few others that we recommend to set out to freeze through the winter. The Pine tribe, which includes Firs, Spruces, &c., we would sow early in spring, in cold frames or greenhouses secure from damp or heavy frost. If not sown before April, it is hard to get them through summer.

The Tree Pæony is either cleft or whip-grafted on the tubers of the herbaceous pæonies, and set into pots and started in a hotbed or pit in April.

The *Caladium esculentum* is the one used for summer borders. The root can be taken up and preserved like a potato. For a similar edible purpose it is, in fact, used in China.]

GRAFTING GRAPES—*D. P., Coventry, Ky.*—"In your last issue you give E. A. Hing's success in grafting, but he does not tell us how to do it.

"I have several Isabellas and Seedling Grapes that I wish to graft with Delawares. Will you give me timely instruction, that I may do it this spring?"

[In the most successful instances we have seen, the stalks were cut to within an inch of the ground, about the time they were bursting into leaf, and cleft-grafted, the grafted part being carefully covered with grafting-wax. Failure, we think, usually results from the scions being injured by frost, damp, or previous disease, or in the operation being performed too early.]

PRUNING EVERGREENS—*P., Toledo, O.*—"You will injure your trees if the leading shoot is not cut at the same time as the sides. The best system is what we have often said before, the one which does

not use the knife at all, but merely nips out the points of all the strongest shoots when the new growth has pushed but several inches long, the leader included. It will then make several buds, instead of one, including one again as a leader. More buds is the result of this mode, and the tree is not deformed in producing them.

SEEDS—*P.*—For obvious reasons we never recommend seedsmen or nurserymen. Our advertising list usually contains all we know, and we do not think the failure, in all cases, due to bad seeds. Some of the things you inquire for you will find in Mr. Dreer's advertisement of last month; and as to the quality, we will only say, that if they are not good, you need have faith in no seedsmen.

INSECTS—*H. F.*, *Springfield, Mo.*—The eggs belong to the common katydid, and are not very injurious to the branch to which they are attached.

THE MORE SUCCULENT a plant, the more is it liable to injury by frost.

Books, Catalogues, &c.

PROCEEDINGS OF NATIONAL POMOLOGICAL SOCIETY at the Ninth Session, held at Boston, September, 1862.

By the kindness of President Wilder, we have from him the long-expected copy of this interesting document. In our last we noticed the Fruit Catalogue, and we now give a summary of some of the more interesting points.

Amongst the APPLES spoken very highly of, were—Blink Bonny, Garretson, Corse's Favorite and Drap d'Or. The Early Harvest Apple was considered the best early apple,—good for any thing, except that Mr. T. T. Lyon had found *Sine Qua Non* and *Carolina Red June* a little earlier. English Russet was not considered good for much, though Mr. Prince said that the "real" English Russet was a fine thing. The Summer Pippin or Tart Bough was considered a fine apple; but many members thought the "real" Tart Bough merely a good cooking apple.

Dr. Underhill said that the real Summer Pippin originated at Haverstraw.

The Golden Pippin was proposed as a delightful apple; but a dispute having arisen as to the "real" Golden Pippin, the subject was dropped.

The Flushing Spitzenburg was named by Mr.

Prince; but it was disputed whether this apple was not the "real" New York Vanderbilt.

Among newer apples, the Washington was praised for its beauty, as equal to Gravenstein. The Springhill Spitzenburg was named by Mr. Prince, Shiawassi Beauty by Mr. Lyon, of Michigan, and Red Polish by Mr. Stone, of Massachusetts.

Of PEARS well spoken of were—Brialmont, a November pear, "larger than Lawrence;" Pateroster, a January pear, as large "as Leon le Clerc;" Jackson, "one of the few pears that can be raised in Vermont;" Belle Williams, an English pear, ripening in January and February; Beurre Konig (syn. Aquite de Maraise), "superior to Duchesse d'Angoulême;" Hagarman, "as large again, but earlier than Seckel;" De Tongres was very highly praised by all (syn. Durandean), ripens in October and November, "more valuable than B. Clairgeau;" Mauxion, a little earlier, but strongly resembling Meriam; Uwchlan, "resembling Bloodgood, but earlier and better;" Prince's St. Germain "resembles Easter Beurre, compares in quality with Passe Colmar;" Hosenshenk of Western New York, "same as Moore's Pound, and of no character;" but the "real" Hosenshenk of Pennsylvania praised by Messrs. Reid, Smith, Houghton, Eshleman, Loomis, Mitchell, Rutter, as the President quoted from former proceedings; Lycurgus, "like Seckel, with Winter Nelis flavor;" Rutter, "seedling of Leon le Clerc;" Consieller de la Cœur promises to "compete in quality with Beurre d'Anjou, but is a poor bearer;" Henkel, same as Cumberland of America, but not the "real" Cumberland of Belgium; Emily d'Heyst, "a good substitute for Beurre d'Arenberg;" Marie Louise, superior when you get it, but hard to catch; Kirtland's Seedling, "like Bonne d'Ezée, but not as good;" Beurre Gambier, "very like Easter Beurre, promising well;" Cornelis, a sugary September pear; Triomphe de Jodoigne, "larger than Duchesse, of middling quality;" Doyenne de Conice, "nearly as Bartlett, keeps till December;" Kingessing, "as large as Duchesse," "habit resembling Steven's Genesee;" Pratt, "one of the best;" Louise Bonne de Jersey, "uncertain in quality;" Sheldon, praised everywhere, sterling, beautiful, but of uncertain quality; Josephine de Malines, highly praised; Beurre Coit, "a very rich pear;" Fulton, "a fine orchard pear;" Howell, "better than Flemish Beauty;" Jaminette, "doubtful;" Vicar of Winkfield, "good only when well grown." Oswego Beurre, some thought it "very good, and others "very good for nothing;" Meriam, "one

of the best;" Beurre Hardy, "larger" than Meriam, of "fine quality;" McLaughlin, a pear "that has been too much overlooked."

CHERRIES.—Belle d'Orleans, a desirable early cherry; Black Heart, a "hardy old cherry;" Downer's Late and Kirtland's Red Jacket, two good late cherries; Coe's Transparent was very highly praised by all; Early Richmond, "ten days earlier than the Pie Cherry," according to Barry; Reine Hortense, "one of our finest cherries;" Governor Wood, very subject to rot; Yellow Spanish, pretty good; Kennicott, "ten days later than Black Tartarian;" Black Hawk, "about like Black Eagle;" Dacotah, the image of Black Tartarian, but "ten days later;" Rockport, "one of the best;" Elkhorn, "tolerably good, very hardy, very late;" Monstreuse de Mezel, highly praised.

PEACHES.—Nivette, valuable; Royal George, "one of the best for in-door culture;" Stump-the-World, "a capital peach;" Early Ann, "very early and delicious;" Hale's Early, "one of the best;" Harker's Early, "valuable."

GRAPES.—Maxatawney, Reid thought "the best white he ever tasted;" Logan, valued for earliness and hardiness; Hartford Prolific, highly praised for earliness and hardiness; Allen's Hybrid, considered a seedling of White Chasselas, and no hybrid; Cuyahoga, Elliot termed "strictly a Fox Grape," but Prince insisted that it was "a seedling of the Muscat family," "a good grape where it ripens well;" Mottled, green and red, "a good keeper;" Delaware usually mildewed and grew very slow for four or five years, after that it grew as freely and healthy as any; Northern Muscadine, "confounded at times with Early Amber, which is a better grape;" Rebecca, "like Delaware, slow and mildewy for a few years," but all right when older, quality superior; Creveling, early as Hartford Prolific, and superior in quality; Union Village, same as Ontario; To-Kalon, same as Wyman and Carter, "like Catawba, but deeper in color;" Perkins, "equal to Northern Muscadine;" Rogers' Hybrids, 15 the best, 3 the earliest; Diana, not highly praised; Oporto, "hardy," but not "fit to eat;" Lydia, "white," recommended by Elliot, also Mary, another white, "ripens with Isabella;" Brackett's Seedling, a seedling of the Union Village, praised by Parsons; Adirondack "promises excellently well."

In the Report of the Committee on Seedling Fruits we find Clapp's Favorite Pear, figured in our volume for 1860, with a continued good character.

CURRENTS.—La Versailles, "very good;" Red Gondouin, "worthless;" La Caucase, same as La Versailles; La Hative de Bertine, pretty good.

RASPBERRIES.—Brincklé's Orange, "excellent for home use, but white fruit sells badly in market; Hornet, praised by every one.

In **BLACKBERRIES**, Cut-leaved and the Holcomb had good words bestowed on them.

STRAWBERRIES—Lennig's White, highly praised; La Constante, superior quality; Triomphe de Gand, members were divided in opinion, some highly praising, others pronouncing against it as strongly; Russell Prolific, very large; Walker, good quality, but not profitable for market; Bartlett, no better than Boston or Brighton Pine; Cutter's Seedling and Hovey both had good words for them.

CATALOGUE.

E. Satterthwait, Jenkintown, Pa. Trees and Plants. Mr. Satterthwait is a fervent advocate of cultivating orchards, and in this catalogue he enters into the question with a zeal "worthy of a better cause." We trust those who wish to read the best case that can be made out for the system we oppose, will read Mr. Satterthwait's catalogue.

New or Rare Plants.

RECENT INTRODUCTIONS.—Independently of the new garden plants already adverted to, the novelties of the past year have been so abundant, that a *resume* of the more important of them may serve as a useful reminder to those who have not yet determined which to add to their collections.

The foremost place must undoubtedly be given to *Lilium auratum*, the gold-banded Lily of Japan, of which somewhat different forms have been produced. The gorgeous blossoms of this hardy, or all but hardy, Lily, which seemed to find its way into everybody's note-book, formed one of the most telling features of the summer shows. We observe that effigies of its blossoms, not badly modelled, have already appeared amongst the treasures of the artificial flower shops. As to the plant itself, price alone must determine how soon it is to become "everybody's" flower. Another decided acquisition amongst hardy flowers is the *Ourisia coccinea* from Chili, a perfectly hardy herbaceous perennial, with leaves like a *Heuchera*, and scarlet flowers like those of *Pentstemon*, which cannot be other than a desirable introduction. The Japanese *Polygonatum oppositifolium albo-lineatum* is an

other charming perennial, with its rubicund stems, and beautifully white-striped leaves. The best annuals have been the West Australian *Rhodanthes*—*maculata* and *atro-sanguinea*, two perfectly distinct and very elegant "Everlastings," the former of which will probably be the greater favorite of the two.

Amongst hardy shrubs we must give the first place to *Lonicera brachypoda aureo-reticulata*, a beautiful Japanese Honeysuckle, introduced by Mr. Fortune. It is a free-growing climber, having the leaves distinctly netted over with golden veins. Another fine thing is Mr. Anderson Henry's *Clematis reginæ*, a breed from *lanuginosa*, which being of garden origin, ought strictly to have come into our former notice. It is a valuable acquisition, producing very large full-formed flowers of a light mauve purple. Amongst the Japanese importations have appeared several very distinct and desirable Maples (*Acer*), some with variegated, some with finely-dissected leaves, and all of them remarkable for their elegance. The *Aucubas* have been augmented by two particularly handsome variegated forms—*limbata* and *picturata*—in one of which the border of the leaf, and in the other the centre is yellow, the rest of the surface being green. Besides the variegated forms of *Osmanthus ilicifolius*, which appeared in 1861, there has been added a dwarf variety called *variegatus nanus*, in which the leaves are effectively and prettily variegated with dark and light shades of green, quite unlike the ordinary white and yellow markings of variegated plants. A beautiful dwarf-habited Conifer, with something the aspect of a tree *Lycopod*, called *Thujopsis lætevirens*, has also appeared in Japanese collections.

The best greenhouse flowering plant of the year, in our estimation, is the white-flowered *Lapageria*, not, indeed, now known for the first time, but, we believe, not previously bloomed in England, and, therefore, unknown to English cultivators generally. Of this we need only say, that it is a fitting companion of the better known crimson *Lapageria*, with wax-like flowers of extreme delicacy. Another remarkably fine plant in this category is *Swainsonia violacea*. It is more vigorous in habit than the rest of its family, and produces very long racemes of large, deep, mauve-purple blossoms, the keel portion of which is curiously convolute. *Sarmienta repens*, a dwarf herbaceous Chilian creeping *Gesnera*, with scarlet *Mitrasia*-like flowers, will be a very useful basket-plant for greenhouses; and another Chilian subject, *Calceolaria cricoides*, a most distinct looking thing amongst

Slipperworts, is likely to be an excellent autumn-blooming decorative plant for the conservatory. We have also seen a nicely variegated form of the plant called *Ophiopogon Jaburan*, which is a very neat and good looking dwarfish perennial, and forms a nice tuft in the greenhouse, though probably more hardy. The red-veined *Ficus Cooperi*, from Australia, is another greenhouse plant desirable in its way.

Several very choice greenhouse Ferns have been introduced, the most striking and valuable of which are *Polystichum concavum* from Japan, which is likely to prove one of the polystichoid *Lastreas*, and *Lomaria gibba* from the Australasian regions. The first has spreading light green, much divided fronds, remarkable for the concave upper surface of the ultimate divisions; the latter is of Palm-like habit, with fine arching pinnatifid fronds, the divisions broader in those which are sterile, after the fashion of other *Lomarias*. To these may be also added *Adiantum chilense* and *A. sulphureum*, the latter of which is styled Golden Maidenhair, on the strength of a dusting powder on the lower surface of its fronds; but though this feature is not so marked here as in the well-known Golden *Gymnogrammes*, *A. sulphureum*, as well as its congener, *chilense*, is an extremely welcome addition to our garden collections of Ferns.

Amongst stove orchids some good things have appeared. Perhaps *Phalænopsis Lowii*, which has already been formally noticed in our columns, is one of the most interesting; though it is surpassed in beauty by such plants as *Cattleya amethystoglossa* or by *Cattleya Warscewiczii delicata*, a charmingly delicate and beautifully-growing variety, which appeared about the same time. Finer, perhaps, though we do not believe brought out at any of the exhibitions, is a remarkably rich-colored *Lælia*, to be called *L. Turneri*, the flowers of which are unapproached for the intensity of the rose-purple of the lip, the rest of the flower being deeply suffused with purple. There have been exhibited several interesting *Dendrobies*, especially *D. Lowii*, a yellow-flowered Bornean species, very distinct in appearance, having a red-veined lip, bristling with hairs along the colored veins; *D. infundibulum*, a Moulmein plant something like *formosum*; *D. nodatum* or *Aphrodite*, a cream-colored Moulmein plant, with moniliform stems, the lip of the flower deeper colored, and marked with a pair of crimson spots; and *D. cucullatum majus*, a very fine thing in that way, remarkable for its large, rounded, concave, pubescent lip. *Cypripedium Stonii*, a new Bornean species, with long, narrow

petals, and a very obviously slipper-formed lip, has been flowered and exhibited by Mr. Day. A very superior form of *Disa grandiflora*, named *superba*, and differing both in the form of its parts and in the fulness of the coloring of its veiny hood-like dorsal appeal; has been exhibited by Mr. Leach, who has this hitherto intractable plant completely under his thumb. Finally, in the Royal Horticultural Society's garden, *Physurus fimbriaris* has been grown so as to have been critically pronounced the best of the silver-veined *Anætochiles*.

The most notable amongst stove plants with ornamental flowers stands *Clerodendron Thomsonæ*, from Calabar, a slender climbing shrub, in whose blossoms the calyx is enlarged and colored white, while the protruding corolla is crimson. Foliage plants requiring stove-heat have been more numerous. *Sphærogyne latifolia* is one of the grandest to be set down to the year's account. It is a companion plant for *Cyanophyllum magnificum*, and, perhaps, in some points superior to that noble subject. Two very telling *Arads* have been brought out, namely, *Caladium Lowii*, with bronzy leaves, which have the appearance of being half-way between *Alocasia metallica* and *Caladium Veitchii*; and *Alocasia zebrina*, which, though green-leaved, is remarkable for the curious ornamental variegation of its erect leaf-stalks. These *Alocasias* and *Caladiums*, by the way, are apt in gardens to be named at random, and we do not know that either of the two we have now mentioned under the names they bear have been critically determined. *Musa vittata* has been largely exhibited in the early part of the year, and proves scarcely equal to what was expected of it, though it is not improbable that excessive propagation and strong forcing may have deteriorated it, and that, when better established and less stimulated, it may improve. The Royal Horticultural Society has obtained from its collector in Brazil a pretty dwarf melastomaceous herb, whose leaves are dotted over with pearl-like white spots; this, which is called *Bertolonia margaritacea*, will be worth cultivating.

The most remarkable stove Fern is *Litobrochia nobilis*. This is like a giant *L. palmata*, the great lobed fronds measuring upwards of a foot across the lamina; it is a noble plant. *Cibotium princeps* is another good Fern, but has not been produced in a mature state. *Adiantum Féei* (the *A. flexuosum* of Hooker), remarkable for its semi-climbing habit, and for the dense velvety pile on its zig-zag rachis—a feature unknown in other Maiden-hairs, has also attracted attention; and finally one or two persons have brought out the

charming little *Asplenium myriophyllum*, raised by Linden, and distributed under the false name of *A. flabellulatum*,

This very hasty sketch will be sufficient to show that the acquisitions of 1862, which have not been few, have at the same time not been unimportant. — *Gardener's Chronicle*.

NEW HARDY SHRUB FROM JAPAN.—The variegated Holly has been justly considered one of the best of our hardy variegated shrubs, but it is very difficult to grow in many soils; for such, therefore, a plant that would grow freely anywhere and still preserve the general aspect of the Holly would prove extremely useful. This want it is expected, will be supplied by the new *Osmanthus* from Japan, which have all the appearance of a Holly, and are said to grow as freely as the Privet.

There are, in the first place, the green-leaved species, *Osmanthus ilicifolius*, which a casual observer might easily mistake for a Holly, and its dwarf variety.

Then there is the *Osmanthus ilicifolius variegatus*, like a variegated Holly, but having leaves of a brighter green with white variegations. This kind attains the height of 20 or 30 feet, and altogether very effective.

Osmanthus ilicifolius variegatus nanus is a dwarf variety, with foliage like that of the preceding, and closely resembling a miniature Holly. It is likely to prove a most useful substitute for the Holly, and to make capital edgings.

The gold-variegated *Osmanthus* is another beautiful dwarf plant, the foliage being very dark green with golden yellow variegations.

Osmanthus diversifolius is a plant more curious than beautiful, the leaves being of all shapes with whitish variegations. It is very dwarf.—*C. Gard.*

MIMULUS CUPREUS.—This beautiful little perfectly hardy novelty was sent from the Andes of Chili, where it was met with at an elevation of 6000 to 7000 feet.

Its dwarf and compact habit, not exceeding 4 to 6 inches in height, its perfect hardiness, and producing its bright orange-crimson flowers in great profusion, render it equally useful for the Flower Garden or for Pot culture.

It has been exhibited during the past season, and had medals awarded it at both the Royal Horticultural and the Royal Botanic Societies. It is a charming plant, and cannot fail to give general satisfaction.

CYPRIPEDIUM STONEI (Mr. Stone's *Cypripedium*).—*Nat. Ord.*, Orchidaceæ. *Linn.*, Gynan-

dria Diandria.—A superb Lady's Slipper, imported from Sarawak, Borneo, by Messrs. Low & Son, Clapton, Nursery. Blooms in October. The petals yellowish blotched with purple; the lip, or slipper, purplish, with net-like red veins.—*Bot. Mag.* 5349.

HELIPTERUM SANDFORDII (Major Sandford's Helipterum).—*Nat. Ord.*, Compositæ. *Linn.*, Syngenesia æqualis.—Native of Western Australia. Raised by Mr. Thompson, of Ipswich, from seed sent by Major Sandford, of Swan River. Flowers yellow. "Likely to be a good bedding-out plant for our summer flower-borders."—*Ib.* 5350.

PHALÆNOPSIS LOWII (Mr. Low's Phalænopsis).—*Nat. Ord.*, Orchidacææ. *Linn.*, Gynandria Diandria.—A beautiful native of Moulmoin, and introduced thence by Messrs. Low & Son, Clapton Nursery. Petals and sepals white tinged with purple tipped with white.—*Ib.* 5351.

DRACÆNA PHRYNIOIDES (Phrynium-like Dracæna).—*Nat. Ord.*, Asparagineæ. *Linn.*, Hexandria Monogynia.—Native of Fernando Po. It is a night-flowering plant, its white flowers opening during the night and closing again by ten o'clock. Blooms in August. Leaves like those of the Aurum and white-spotted.—*Ib.* 5352.

ACROTREMA WALKERI (General Walker's Acrotrema).—*Nat. Ord.*, Dilleniaceæ. *Linn.*, Polyandria Trigynia.—Native of the mountains at altitudes of from 2000 to 4000 feet, in central Ceylon. "Its deeply-plaited leaves and humble growth remind one of our Primrose; but the young foliage is pale and deeply tinged with rose, while the flowers more resemble a Buttercup." Flowers yellow, open in June.—*Ib.* 5353.

DEUTZIA PARVIFLORA.—From the Amoor country, near the mouth of the rivers Sungari and Ussuri; introduced by Messrs. Maximoviez and Maack. Very bushy shrub, 2 to 3 feet high, horizontal branches, leaves opposite, small footstalks, pointed, unequally denticulated rims, on either side covered with small star-shaped hairs. The flower corymbs at the end of the branches make a flowering mass of the whole plant in season. Flowers and habit like Viburnum. Perfectly hardy.—*Gartenflora.*

FICUS PORTEANA.—Beautiful leaf plant, brought from the Phillippine Island in 1861 by Mr. Porte. Destined to make a sensation. Particulars not given.—*Ib.*

ALOCASIA ZEBRINA?—This, a remarkable and striking plant, was sent to Veitch by Mr. John G. Veitch from the Phillippine Isles.

Its leaf stalks, which are upwards of 2 feet in length, are of a pale yellow color, marbled and banded with dark green.

The leaves are large, of a velvety green colour, and having the sagittate form peculiar to this family.

Domestic Intelligence.

ASA WHITNEY'S APPLE ORCHARDS, FRANKLIN GROVE, ILL.—I have recently examined a Western orchard that pays. It may interest Western men to know something of its history and management. I will give it briefly.

1—The ground on which this orchard was planted is rolling prairie, it being located on the back and east and west sides of one of these prairie rolls.

2—The soil was prepared for the trees by deep plowing, and throwing the same into narrow beds so as to secure surface drainage. Mole drains were also run through portions of the field where under-drainage seemed necessary.

3—The trees were, most of them, planted on these narrow, back-furrowed beds; or the soil was afterwards back-furrowed to the trees so as to prevent the surface water collecting around the collar of the tree in winter, and freezing there.

4—Twice as many trees were planted on an acre as it was intended should remain for a permanent orchard.

5—It was carefully cultivated early in its history; but when five or six years old it was seeded with red clover. The clover is cut about the time, or before it is in bloom; and the cutting is so arranged that a double swath is left under each row of trees. This forms a mulch. The after-growth of clover, if allowed to mature its seed, is not cut. No crop is taken from the ground at all, except the fruit from the tree.

This clover crop is a wonderful manure. The amount of it is very large. I noticed that, under the trees where the swaths had been left, there were no live clover plants—no roots in the soil. But the crop of seed in the after-growth provides for a crop next year. This clover crop is one of the aids employed to bring the orchard into early bearing. The first effect is to check the growth of the tree. This induces the production of fruit. Then the clover is a healthful protection and manure. The soil is

kept productive; the fruit is developed; the tree thrives; and yet no unhealthful growth is made late in the season.—*Rural New-Yorker*.

CRAB APPLE JELLY.—"Elsie," a well known and esteemed lady writer for the agricultural papers says, in the *Ohio Farmer*, that all the varieties of the Siberian Crab Apple, make delicious jelly, preserves and marmalade, (dark or light, according to their color), and which, once enjoyed, the housewife would not willingly do without.

MUSTARD.—The Sacramento (California) *Bee* says:—There were shipped from San Francisco, last week, 234 bags of mustard for New York. It is known that the wild mustard, or the mustard which grows wild on hundreds of thousands of acres in southern California, counting from Santa Clara down, is superior to the English imported mustard. This home mustard is in general use in this State, and for many years it has been gathered by parties and shipped abroad. The supply seems almost endless, and the business of gathering it ought to be, and will yet be, when labor becomes cheaper, a leading one in the commercial interests of the State.

TREE WASH.—In early spring we should look well to the cleaning of the trunks and larger branches of fruit trees. The old style of white-washing is not fair treatment, for although its immediate effects may be beneficial, the interstices of the bark becomes filled in degree with the insoluble carbonate of lime, and this interferes materially with the after-functions of growth, lessening the *endosmose* and *exosmose* actions, and the bark soon becomes again as badly condition as before.

Tree washes should be soluble, so that they will eventually be removed by rains; thus oil soap, if free from rosin, may be used with advantage.—Potash should never be used, as it frequently injures the cleaner and more delicate portions of the bark, and it changes so readily to a carbonate, as to be washed off before it decomposes the ova and cocoons of insects, lichens, mosses, etc., and it will not remove the scaly insects from the surface of pear trees, unless used at so great a strength as to injure the surface of the bark itself.

The soda tree wash we have so frequently recommended, is preferable to all others, and may be thus prepared:—Heat sal soda red hot in an iron vessel; to do this the vessel should be imbedded in, not over, a hard coal fire; this will drive off the water and carbonic acid which it contains, rendering the

soda caustic. One pound of this caustic soda, added to one gallon of water, may be applied to the trunks and larger branches of trees without injuring them. It will remove the scaly insects from the bark of dwarf pear trees. Applying the wash one day, rub such as have this insect upon them, the next day, with a woolen cloth, and the barks will be perfectly clear. This wash may be applied to all trees with a mop or brush, and if again applied at mid-summer to the larger portions, trunk, etc., the trees will be materially benefited. Where a portion only of the trunk of a plum tree is cleansed by this wash, it will increase in diameter more than the parts above and below the washed portions. This wash is worth all it costs as manure; it necessarily will find its way to the soil by the action of rains, dews, etc.—*Working Farmer*.

OLD ROSES OF VERY SUPERIOR QUALITY.—H. P. Alexandrine Bachmeteff, red; Alphonse Karr, rose; Anna de Diesbach, satin rose, opens with certainty; Baronne Prevost, rose; Belle de Bourgl-Reine, rose; Caroline de Sansal, flesh; Duchess of Sutherland, pink; Duchess of Norfolk, crimson; Eugène Appart, dark velvety crimson, and scarlet; Francois Arago, crimson maroon; General Pélissier, pale rose; Léon des Combats, dark crimson; Lord Palmerston, carmine; Lord Raglan, dark crimson scarlet; Louise Odier, rose; Madame Charles Crapelet, carmine; Madame Laffay, crimson; Madame Vidot, pale pink, most symmetrical; Mdle. Louise Carique, carmine, fine pillar Rose; Marie Portemer, purple crimson, moderate habit, but free autumn bloomer; Mrs. Standish, rose; Pius IX., purplish crimson; Prince Léon, vivid crimson, moderate grower, but most beautiful form; Souvenir de la Reine de l'Angleterre, rose; Souvenir de Leveson Gower, deep red; William Jesse, light crimson.

Foreign Intelligence.

BOUARDIA LONGIFLORA.—The plant is rather difficult to propagate, as indeed are all the genus; but having an old plant or two, with well-ripened wood, a stock may be obtained in the spring, by taking off the young shoots when about an inch in length, which will strike well enough in sand under a bell-glass, and plunged in a briskish heat. When sufficiently rooted and hardened off, they should go into "thumbs," potting them in turfy peat and

sand, with good drainage; and when these pots become full of roots, transfer them to 4 and 5 inch pots, for blooming. The young plants will require a warmish pit when the temperature averages about 60°, and to be kept pretty near the glass, to prevent drawing. When they commence growing, pinch out the point of the shoot, to encourage their breaking laterally, and as the season advances plenty of air and light should be given, taking care that the atmosphere is rather damp than otherwise. If not kept near the glass, the plants are sure to become straggling, weakly things; and as their beauty will entirely depend on being kept dwarf and bushy, this must be attended to, for they will not bear stopping oftener than once, the flowers being what are called terminal, or produced at the top of each shoot, and require these to be tolerably strong and well ripened to produce blooms; but with good management you may frequently obtain from three to five heads of bloom on spring-struck plants; still they must be well grown to do this. Towards the middle of August the plants may be more fully exposed by taking off the sashes entirely during the early part of the day; this treatment will apparently stop their growth, and induce the formation of the clusters of buds, which during the autumn months will be produced freely, in proportion as the shoots are strong and have been duly exposed for ripening. We have never very successfully managed the plant as a specimen; its tendency to grow in a loose, straggling way cannot be overcome without much trouble, and therefore I never kept them beyond the second year.—*Cot. Gardener.*

GIGANTIC BIRD'S NEST.—Mr. Gould describes the Wattled Telligalla, or bush turkey, of Australia, as adopting the most extraordinary nidification. The bird collects together an immense heap of decaying vegetable matter as the depository of the eggs, and trusts to the heat engendered by decomposition for the development of them. The heap employed for this purpose is collected by the birds during several weeks previous to the period of laying. It varies in size from two to four cart-loads, and is of a perfectly pyramidal form. Several birds work at its construction, not by using their bills, but by grasping the material in their feet, and throwing them back to one common centre. In this heap the birds bury the eggs perfectly upright, with the large end upwards. They are covered up as they are laid, and allowed to remain until hatched, when the young birds are covered with feathers, instead of down, as is usually the case. It is not unusual for the natives to obtain nearly a bushel of

eggs at one time from a single heap, and they are eagerly sought after, as well as the flesh. The birds are very stupid, easily fall a victim to the sportsman, and will sit aloft and allow a succession of shots to be fired at them, until they are brought down.

BRINGING VINE ROOTS TO THE SURFACE OF THE BORDER.—In the successful cultivation of the Grape it is, I believe, generally considered an important point to have the roots near the surface of the border, more particularly where the subsoil is unfavorable, and where in the original construction of the border the matter of drainage has not been attended to with the utmost care. It certainly matters less, if—on an open gravelly subsoil, or where by artificial means superabundant moisture is rendered impossible—the feeders of the Vine are six inches or 16 inches from the surface of the soil. But in cases where such conditions as to dryness do not exist, it is of great moment that a mass of active roots should be got to the surface of the border, and encouraged to multiply themselves there. No doubt the most thorough, and ultimately satisfactory, way of dealing with such cases of deep roots and wet subsoils, would be to lift the Vines, and entirely reconstruct the borders on the most improved principles as to drainage and composition. But in this way there might be a risk of the loss of a year's crop, more particularly as Vines which have their roots in deep damp material are less likely to have thoroughly well ripened wood, and are in all cases deficient in those tufty rootlets that make such operations comparatively safe and easy—a risk which in gardens where there is only one viney the proprietor may not choose to incur.

In cases where the roots are thus deep, the next best way that I am aware of, and that I have proved successful, is in the first place, to dig a trench in front and round the ends of the border considerably below the level of the principal roots and original border. This trench, which should be 2 feet wide, should be filled up with what is generally termed a "rumbling" drain of brickbats or small stones, and an outlet by a drain should be secured to carry off the water that may find its way to this open body of stones. In the next place, remove the whole of the inert soil from the surface of the border down to the roots of the Vines. Then cover the roots with a six-inch covering of equal proportions of lime débris, thoroughly rotted manure, and turfy loam in a rough state, all well mixed together. Just as the Vines are to be started, a bed of leaves of sufficient depth to generate

heat sufficient to warm at least the 6 inches of open material should be placed immediately over the roots.

The stone drain in front cuts off all surrounding moisture, and in itself that would be an improvement to a wet Vine-border with deep roots. It will be discovered that the open rich material with its temperature raised above the lower strata of the border is sufficient inducement to bring up a lot of roots of a very different order to what is generally found in the bottom of such borders. If the leaves are allowed to remain on the border all the growing season, the roots will be up through the top-dressing and into the leaves themselves. When the leaves are removed, leave that portion of them next the border and into which the roots will penetrate, and simply cover them over with a thin layer of light dry soil, as already recommended. Next season let the same process of adding 6 inches of dressing and the fermenting material be repeated, and in the course of a season or two it will be found that the surface of the border has the lion's share of active well-ripened roots, and of course the state of the Vines will be much improved. Last season I placed a bed of leaves on a Vine-border in November, and allowed them to remain twelve months, and the lower half of these partially decayed leaves was found literally interwoven with a mass of the most beautiful healthy roots, and this too in the case of a border very recently and carefully made and drained, and the roots of which had a dry healthy medium for 3 feet deep to the bottom of the drainage. I could point to many other instances of bringing Vine roots to the surface of borders by similar means, and would strongly recommend those who have wet borders and deep roots to try the means I have been pointing out, as the next best thing to renewing the whole concern.—By MR. D. THOMSON, Archerfield Gardens, in *Scottish Gardener*.

HAVE ROOTS THE POWER OF SELECTING FOOD.

—It has long been a question of interest whether ROOTS have any power of selection from the food dissolved in the moisture which surrounds their delicate spongiolets, the only point apparently which is capable of absorption; and then whether they are able to return to the soil any matter which is useless or prejudicial, or which they cannot conveniently deposit by means of elimination from their juices during their passage from one part to another. The question is clearly one of great importance as regards the theory of cultivation, and especially of that part which treats of the exhaustion or deteri-

oration of the land from preceding cropping, and there are collateral points of interest.

M. CAUVET, an apothecary in the French army, has made some interesting experiments on the subject, the results of which have appeared in a recently-published number of the "Annales des Sciences Naturelles," dated 1861, a publication the botanical part of which drags its slow length along to the great dissatisfaction of its subscribers.

Previous experiments have been generally made with plants whose stems were mutilated, and therefore not in a natural state, and whose rootlets were much injured by removal from the ground, and by washing away the adherent soil. To avoid these evils M. CAUVET employed seeds which he had caused to germinate through holes in wooden discs placed over glasses filled with water. Each perforation was occupied by a single plant, and it was possible to examine the tips of the root, and any rootlets it might give off, by simply lifting up the disc, which could be done without the slightest injury to the spongiolets.

Coloring matter mechanically suspended in water was clearly useless, though employed in many previous experiments. Substances therefore were used which were perfectly soluble in water, and which could be taken up into the cellular tissue, provided the fluid penetrated the spongiolets.

It appeared from the experiments that coloured liquids, whether active, as solutions of minerals, or inert, as decoction of *Phytolacca*, were not absorbed completely into the system, so long as the roots were physiologically sound, though they affected the cells of the spongiolets, and the superficial cells of the parts immersed. Active liquors affected the spongiolets rapidly and decomposed them. In the first case, the roots are surrounded, especially at their extremity, by a deposit of coloring matter, which renders the absorption of the solution extremely difficult or prevents it altogether, inducing at length the destruction of the spongiolets, while in either case, as soon as the spongiolets are decomposed, the fluid enters the plant, following the course of the fibro-vascular bundles, a circumstance which has an important bearing on the condition of these bundles in Potatoes, Turnips, &c., affected by disease. M. CAUVET deduces from this the corollary that it is useless to study the course of the sap in plants by means of colored injections.

Having established these points, he proceeded to examine the question whether there is really any excretion from roots. In the course of his experiments, he ascertained that roots physiologically sound do not absorb indifferently all substances dis-

solved in water; and confirmed his former views that it is only after the more or less complete destruction of the spongiolets that colored substances, whether poisonous, inert, or not capable of being assimilated, can be absorbed, and that death ensues unless new roots are thrown out; that roots physiologically sound have no power of rejecting substances, whether poisonous or otherwise, which have been already absorbed, but that when the plant survives the first shock, the poison or deleterious matters is carried to the leaves, which die in the order of their evolution, while a minute quantity is eliminated from the sound leaves together with the water of evaporation. Arsenious acid, for example, is not absorbed by plants growing in a soil which has been purposely poisoned, unless the dose is too large, and then it arrests germination and destroys the plant. If the plant chances to grow, an appreciable quantity of arsenic is not found by chemical analysis in the fruit, and animals nourished with the leaves do not appear to be inconvenienced.

The latter point has an interesting bearing on some questions of Forensic Medicine, and may quiet the alarms of those who believe that evil consequences can arise from the dressing of Wheat with poisonous salts, alarms which are put in a very striking way in M. DUMAS'S "Monte Cristo, in a conversation between MONTE CRISTO himself and Madame VILLEFORT.

As regards cultivation, then, we have two important facts—first, that plants do exercise a certain degree of selection in their choice of food, refusing to imbibe, inert or injurious substances—more however by their action on the spongiolets, than by any actual election; secondly, that inasmuch as the roots of plants do not give out any excretory matter to the soil, the theory of rotation of cropping as put forth by DE CANDOLLE and LIEBIG is void of truth. The barrenness of a field after a particular crop does not depend upon the deposit in the soil of matters injurious to the plants of the same species. Within certain limits therefore it must depend upon the elective faculty, and not on any excretion, that plants owe the differences which we observe, species by species, in the quantity or quality of their saline elements. The fact that in the same plot of ground *Tumaria* and *Salsola* give very different chemical results, the former containing more magnesia and the latter more soda, while in *Eryngium maritimum*, which grows exclusively on the sand bordering the sea, and strongly impregnated with chlorate of soda, there occurs three times as much potash as soda, certainly in-

dicates some power of selection, for if soda, potash and magnesia, were indifferently taken up into the plant—and it is an established fact that there is no excretion from the roots—they must be found on analysis. The bearing on such questions as that of the cause of chlorosis, Clover sickness, and several other maladies to which plants are subject, is at once evident, and it is greatly to be wished that M. CAUVET should continue his experiments, which tend so much to throw light on numerous physiological questions.—J. M. B., in *Gard. Chronicle*.

Obituary.

DEATH OF DR. WILLIAM DARLINGTON.

As we go to press the telegraph announces the death of this distinguished gentleman, at his residence in West Chester, Pa., on the 22d of April, in his 81st year.

We have lost no friend, and we know of none we may yet lose, whom we more sincerely mourn; and we believe the whole community may well share in the same sentiment. As a statesman and patriot, —a man of vast intellectual powers, and of first class scholastic and scientific attainments,—and at the same time possessing that benevolence and energy of mind that is capable of wishing well and doing well to his country and to individuals, he accomplished the most valuable results,—and in this has had no superior in American history.

We feel that our pen is not equal to the task of doing justice to his memory, and we will endeavor to have ready, in our next, from the pen of one of his life-long friends, a sketch of his eventful career.

We cannot help adding in this brief note, that the Editor can trace even the existence of this journal,—at least under his management,—to the early friendship of Dr. Darlington, by whose kind encouragement alone he first undertook his "Handbook of Ornamental Trees," and which exercise diverting his hand from the exclusive "use of the spade," to the occasional use of the pen, confirmed a natural desire to be as useful to horticulture as possible.

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING, APRIL 7, 1863.

The President in the chair.

Mr. Walter Elder presented a written Essay on the topic of the evening, which we shall publish: ARRANGEMENT AND MANAGEMENT OF FLOWER GARDENS.

The President, J. E. Mitchell, Esq., approved of dispensing with box borders in the vegetable garden, and, in reply to a question, stated that no substitute was required.

Mr. Satterthwait gave his experience with the disease now generally affecting the Verbena. By microscopic examination, he had discovered the cause in a minute insect, of very active habits, which attacks the young shoots. Tried immersing the Verbenas in hot water, from 130° to 140°; killed the insects and saved the plants.

The same insect attacks Cupheas, Maurandias, Petunias, and perhaps some other plants. Tried also another method, suggested by Mr. Kilvington, of plunging the pots in hot-beds with strong bottom heat; in spite of the insect the plants grew and flourished.

Mr. Saunders had also examined this insect microscopically. Doubts if it causes the rust on the Verbenas. Thinks it due to mildew. This insect belongs to the Acarus or Red Spider family; it is white and has six legs. Invariably finds mildew in connection with the brown rust. Hot water cures it. This mildew, under a microscope of 50 magnifying power, looks like net-work or lace. Has a small greenhouse. Verbenas, etc., in it are very healthy, although the house is too damp.

Ribbon beds of flowers are suited to winding paths, with a border on each side. It is not easy to realize in practice the imaginative effects described by Mr. Elder. There is much to learn yet of the harmony and contrast of colors. Contrasted colors look best, as orange and blue, and other colors likewise. Place an orange colored wafer on white paper and look at it until the eye is tired, then glance at the white surface, and its opposite, blue, is seen. In England there is a greater variety of flowers suitable for this purpose than here. A deep, but not over rich, soil is best for flower beds. Does not approve of pruning hardy shrubs in the fall, but as soon as they have done flowering.

Dr. Burgin agreed with Mr. Saunders as to the cause of rust. Insects feed either upon the leaf or upon each other, and unless they are found feeding upon the leaf the presumption is that they are not the cause of the rust.

Mr. Satterthwait. When they infest the plant, the tops do not grow, although the roots grow and fill the pot. I found them feeding on the leaves. They are about the 150th of an inch in size.

In reply to a question as to the value of charcoal in the culture of roses, and heightening their colors.

Mr. Hibbert had tried it in pot culture with no effect.

Mr. Saunders stated that it is like a great many statements, annually reproduced in horticultural journals, of no value whatever. Charcoal is valua-

ble to mix with soil in potting, not as a manure, but as a corrective and absorbent. Uses it also as a mulch.

The President recommended the arrangement of beds of flowers all of one color. By judicious arrangement and contrast between the different beds very pretty effects might be produced.

Mr. Harrison had seen a similar method in practice on the grounds of D. Rodney King, Esq., which presented a beautiful appearance. The beds, cut out of a grass sod, were arranged around the circular basin of a fountain, and filled with low growing plants.

Mr. Saunders. The strictly geometrical arrangement of a flower garden is best in keeping with an Italian villa or one of similar style. It is bad taste to dot a fine lawn all over with geometrical flower beds. The best test of the geometrical garden is to remove one of the beds; if something seems wanting, it proves the excellence of the original plan.

The President. The French geometrical gardens are all stiff and angular. Winding walks and irregular figures are more pleasing to the eye of taste.

Dr. Burgin. Charcoal attracts light and heat, and thus contributes to the health of the plant on which its color depends. Irregularity in surface is always a pleasing feature in ornamental grounds.

Mr. Eadie. The effect of a geometrical garden depends upon its position. It should be so placed as to be looked down upon, as from a window, or laid out upon a bank. Looked upon from a level the effect is lost. In the geometrical garden there is often a central circle surrounded by other appropriate figures. The ribbon style, however, far surpasses it. A fine effect is also produced by placing a tall plant in the centre and surrounding with successive belts of contrasted colors, diminishing in the height of the plants to those of the border, which should be quite low in habit.

Many practical articles on this subject, containing full directions, have lately appeared in the *English Cottage Gardener*. There are several fine foliage plants suited to this purpose.

The insect alluded to is getting very troublesome. It commenced on Achimenes, Gloxinias, etc.; the last it almost entirely destroys. It is not a spider but a thrip; is active, and leaps from plant to plant. As it gets old it changes to a dun color and is visible to the naked eye.

Mr. Hibbert. With me it infests the Gloxinia, Gesneria, Achimenes, Heliotrope, Lantana, and Verbena. It is not a leaping insect, has large prominent eyes, and is of a dirty white color. The plant, when attacked, ceases to grow, and the leaf

dries up. It is quite as destructive in the country as in town. Gesnerias and Gloxinias it kills entirely. Tried hot water at 110° but did not effect them; at 135° destroyed the plants. Whale oil soap failed also. A few days since saw a collection of 20,000 Verbenas entirely free from them.

Mr. Harrison. The arrangement of the flower-garden should depend upon the size of the grounds to be adorned. The geometrical style is suited only to a very small or a very large place. There is too much Landscape Gardening attempted on half acre lots. The style of flower gardening recommended by Mr. Elder can best be carried out on rather spacious grounds with a somewhat undulating surface. Box borders, except in a small vegetable or fruit garden, to separate the gravel walks from the cultivated land; or again in the large formal geometrical flower garden, in the Italian or French style, he would not approve of. There is nothing neater and prettier, as a border for flower beds, than a closely shaven lawn with deeply and sharply cut edges, always kept trim, and looking like an edge of bright green velvet, cut with sharp-edged scissors.

Mr. Eadie, in answer to an inquiry, named the following foliage plants as well suited to the purpose of bedding plants, in the ornamental garden. Two or three varieties of *Amaranthus*, *Centaureas*, variegated *Alyssum*, *Coleus Verschaffeltii*, white and yellow variegated *Geraniums*, and, in shady spots, some *Begonias*.

Mr. A. Graham. Has tried *Begonias* both in sun and shade, and failed.

The President has a bed in his flower garden, with a centre of *Scarlet Geraniums*, surrounded by the white *Feverfew* thickly massed, producing a very pleasing effect.

Mr. Saunders has seen a bed having the *Lamarque rose* as a centre, with a zone of *Salvia patens* around it, 18 inches wide, then another of *Scarlet Geranium* three feet broad, and the *Nasturtium* clambering over all. An infinite variety of arrangement is practicable under this system, and a corresponding diversity and beauty of effect.

MONTHLY DISPLAY, APRIL 14TH.

A lovely night, a brilliant show and a crowded room were the features of this occasion.

Among many beautiful and striking objects on the tables, none attracted more eulogy and admiration than the table designs of James Eadie, gardener to Dr. Rush; and Adam Graham, gardener to Gen. Robert Patterson. Mr. Eadie's design received the first prize, and Mr. Graham's a special

premium. To Mr. E. were also awarded the premiums for a Basket of Cut flowers, 6 *Marantas*, 6 *Dracenas*, for two collections of 12 and 10 plants respectively, and for a new plant, first time shown, *Coleus Verschaffeltii*, which Mr. E. regards as a valuable addition to our list of bedding plants.

What will our London friends say of the superb *Bletia Tankervilleæ*, shown by Mr. Eadie, with *twenty-three* large spikes profusely covered with bloom?

P. Mackenzie & Son, ever active and enterprising, gave us samples of three new *Camellias*, *Frézolini*, *Madame Leboise* and *Maria Piccolomini*. Also two specimens of the *Camellia Cup of Beauty*, grown upon the same plant, one bright rose color, the other pure white. Have our readers such 'sports' to chronicle? For these, and the new plant *Pitcairnia Altenteinii*, they received the general and special premiums, as well as for their large crisp and tender stalks of *Rhubarb*.

It is pleasing to report the increasing interest in the exhibitions of the society manifested by lady members and friends. The Silver Medal offered this month, for Ferns, was decreed to Mrs. H. Ritchie, for a very choice and admirably grown collection.

Another lady contributor, Mrs. Taws, received the prize for a pretty pair of Hand Bouquets, of modest proportions and gracefully combined.

Mr. Dreer sent some choice *Roses* in pots, and a dozen *Pansies*, both receiving the first prize.

Mr. E. R. Hibbert, gardener to Fairman Rogers, Esq., had the finest *Hanging Basket* and collection of 6 plants on the tables, so thought the Committee, who gave him also a special award for variegated plants. The neatly printed labels and cards attached to his plants were worthy of imitation.

Mr. Taws' gardener, Remi Herrise, caused many a mouth to water at the sight of his luscious mushroom, which were specially prized by Committee.

Hanging Baskets were presented by G. Hauber, gardener to A. Catherwood, and Adam Graham.

Mr. John Landers, gardener to Dr. Norris of Wilmington, Del., presented three clusters each of *Black Hamburg* and *White Frontignan grapes*, the latter unusually fine; collection awarded a premium.

Mr. W. L. Schaffer had 8 varieties of excellent Apples and fine fresh Pears, *Winter Nelis* and *Glout Moreceau*.

Mr. Robert Laughlin, another new contributor, took the premium for *Lettuce*, and Mr. Wm. Gracie for *Cucumbers*.

To those who are lovers of fruits, flowers or vegetables, we would say "go and see."

STATED BUSINESS MEETING, APRIL 21ST.

In addition to the usual routine business, of Reports of Committees, etc., the following gentlemen were elected to membership: Messrs. S. C. Borden, James A. Wright, Dr. Geo. S. Schively, Joseph McMurray, Joseph McMurray, jr., W. J. Davis, John Fairbrother.

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MASSACHUSETTS HORTICULTURAL SOCIETY.

At the meeting on the 11th of March, a very interesting incident occurred, in the presentation to the Society by C. O. Whitmore, Esq., of a bust of Col. Marshall P. Wilder.

The following letter accompanying the donation, will be read with interest by the numerous friends of the veteran Pomologist throughout the entire Union:—

BOSTON, MARCH 31ST., 1863.

CHARLES M. HOVEY, Esq., President of the Massachusetts Horticultural Society:—

Dear Sir,—I have placed in the hall of the Massachusetts Horticultural Society a bust, by Henry Dexter, Esq., of Cambridge, of our valued associate, the Hon. Marshall P. Wilder, and offer it for the Society's acceptance. In thus preserving the portrait of one whose labors have so long been freely devoted to the interests of our Society, it seems proper to recall the variety and extent of his services.

For more than thirty years Col. Wilder has been connected with this Society, and has not only given liberally of his money, but has devoted his time and influence to the furtherance of its objects.—Beginning at a time when the importance of such a Society was not appreciated, and its objects seemed almost visionary, he has seen it gradually rising in public estimation, and exerting a constantly increasing influence among the land-holders of New England. He has seen the fruit of that influence in the taste which embellishes the residence of the wealthy—in the enterprise and intelligence which have elevated the position of the farmer, and in the improvement in every branch of husbandry which has so grandly increased the national wealth.

Whilst the Society has been the inciting power of these important movements, it has been compelled to struggle with the difficulties attendant upon all pioneer enterprises. Its friends may at times have been discouraged, its means have been curtailed and its prospects obscured. Col. Wilder has deserved the thanks of the society for persevering in its support, and in one instance at least—the case of the Mt. Auburn Association—for having

made such wise and prudent arrangements as have secured a permanent fund for its purposes.

I need hardly add that Col. Wilder's connection with the society is not his sole claim to public distinction. He has repeatedly been called upon to occupy offices of trust and responsibility and has ably discharged the duties devolved upon him. As a merchant he has given a notable example of integrity and ability, and his personal character needs no encomium from us, who have been intimately associated with him. The particular interest, however, which Col. Wilder has always evinced in the success of this and kindred societies, renders this a peculiarly fitting place to present such a memorial. I have therefore to request you, in behalf of the society, to receive this bust and to assign it a fitting location, in order that it may remain surrounded by the emblems of the pursuits in which he has delighted,—as a memorial to us and our successors of our appreciation of the character and labors of Marshall P. Wilder, and wishing, my dear sir, that your administration may prove as fruitful of good to the society as have those of your predecessors, I remain, yours faithfully,

(Signed)

C. O. WHITMORE.

The bust was then uncovered by the Librarian and was received with hearty applause.

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HARTFORD COUNTY, (CONN.) HORTICULTURAL SOCIETY.

At the annual meeting on the 4th inst., the following officers were elected:—D. S. Dewey, of Hartford, President; J. S. Butler, Edward Bolles, R. D. Hubbard of Hartford, and nineteen others, representing different sections of the county, Vice-Presidents; Charles T. Webster Recording Secretary; T. K. Brace, of Hartford, Corresponding Secretary; P. D. Stillman, Treasurer; and S. H. Clark, Auditor.

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HORTICULTURAL SOCIETIES AND THE DEPARTMENT OF AGRICULTURE.

In a note from Hon. Isaac Newton, he writes: "It is my intention to distribute the seeds, hereafter, as far as possible, through Agricultural Societies and Clubs. I hope these will generally be organized through the country, and I particularly request that every such organization, now existing, or which may be formed, should at once forward to this Department, the names of its President and Secretary, that they may be promptly supplied with seeds, and with the Agricultural Reports."

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

JUNE, 1863.

VOL. V.—NO. 6.

Hints for June.



FLOWER-GARDEN AND PLEASURE-GROUND.

What are usually considered "fine planting seasons," frequently result in a large list of dead trees. The past season has been a very wet one, and as such classed with the good times; but the evil comes in this way:—In the first place soil will only pulverize when nearly dry. If rather wet it becomes pasty. It is only when the soil powders finely that it can be packed in closely between the crevices of the roots; for pasty earth leaves spaces all hollow like a mould which no art can well fill up. So when trees are planted in this state of affairs, the fibres are not near as numerous in contact with the soil as when set in a drier time, and suffer proportionately during a summer drouth. But this is not the worst. Soil made pasty by working when wet, dries out more rapidly than a soil left in a finely pulverized state; and the effect of heavy rains is to render soils pasty on the surface, which afterwards soon parts with the moisture within it.

To these causes combined may be referred the death of many trees planted in wet seasons, although the wet season itself, by checking evaporation from the branches until new fibres form is otherwise very favorable.

All those therefore 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.

Good walks are the most striking features of a well

kept garden. Weeds should be taken in time, and the labor of keeping them down will be very slight. The edges or "verges" should be trimmed at every mowing of the grass-bordering; for which purpose a common sheep-shears, or grass edging shears, made specially for the purpose and sold at most horticultural stores, should be kept on hand. Washing by heavy rains should be guarded against; or, when so injured, speedily repaired.

After the walks and lawns, the flower-beds should be a constant source of attention. If the plants appear to suffer by drouth, there is no better remedy than to place a fork around the plant and loosen up the soil deeply, without disturbing the plant more than can be avoided. After being thus loosened, it will not dry out near as much as before. Above all, keep the surface continually broken by hoeing and raking fine. Nothing is so sure a preventive of soil drying as a loose, porous texture.

The watering of flower-beds in a dry time should not be done often; but when necessary, done thoroughly.

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.

Propagation by layering may be performed any time when strong vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated no other way. Cut a notch on the upper side of the shoot, not below as all the books recommend, and bend down into, and cover with rich soil. In a few weeks they root, and can be removed from their parent. Stakes for plants should be charred at the ends before using, when they will last for years.

Bulbous roots, when done flowering, and the leaves have faded, should be taken up and dried,—

mixed with chaff, or other light loose material, placed in paper bags and stowed away in a dry place till fall.

Cut off the flowers of roses as they fade,—the second crop will be much better for the attention. Seeds of all flowering plants should be also taken off; all this assists the duration of the blooming season.

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.

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 mowings keeps the grass short, the grass roots do not penetrate deep, and the sod is a benefit, by keeping the surface spongy, and the substratum cool.

FRUIT GARDEN.

Grapes coming in bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine, "just to test the kind," but no more should be permitted till the vine has age and strength. Vigorous growth, and great productiveness, are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane; this can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggy branch, stuck in for support, than over a straight stick as a trellis, and generally do better every way. Where extra fine bunches of grapes are desired, pinch back the shoot bearing it to about four or five leaves above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for next season. These hints are for amateurs, who have a few vines on trellisses; for large vineyard culture, though the same principles hold good so far as they go, they will vary in their application.

Strawberries, when grown in hills,—the most laborious but most productive method of growing them,—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten as a mulch, is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Gooseberries should have the soil, and even the plants, if it were practicable, shaded a little. Dry air about them is one great cause of mildew.

Currants are so easily grown as to require few hints for their management. If they throw up many suckers, take out a portion now, instead of waiting till winter to cut them away. The Currant borer is a great pest, eating out the pith of the young shoots, and causing them to grow poorly, and bear but small fruit next year. Gummy "fly paper" is, we think, the best thing to catch them.

Blackberries are not ripe when they are black. Leave them on till they part readily from their stalks.

Stone fruits will now be attacked by curculio, and no means should be spared to keep it down. Those who try the jarring process should saw off a branch on the main trunk, a few inches from it, to hammer away at. Some we see hammer the trunk, but this cannot be done suddenly and hard enough without injury to the tree.

In the interior department, peaches that have been slightly forced will be about maturing, and the atmosphere must be allowed to become dryer by admitting more air and using the syringe less freely. This is necessary, not only to perfect the flavor of the fruit, but to mature the wood properly for next season's fruit. All of this has to be done with caution, as a sudden change from a moist system of culture to a dry one will be certain to injure the tissue and breed disease.

Red Spider and other insects closely follow on the heels of a dry atmosphere. They must be watched, and nothing suffered to injure the leaves till by natural maturity the plant has no longer use for them.

Grapes in cold vineries will now be of a size fit for thinning. In those cases where the bunches are intended to hang long on the vines, they should be thinned out more severely than those expected to be cut early. A close, compact bunch favors mildew and early decay.

Fine, rich color is always esteemed as one of the criterions whereby to judge of the excellence of a fruit. Sun-light is of first importance; but it is not generally known that this is injurious when in ex-

cess. In a dry atmosphere, with great sun-heat, where the evaporating process goes on faster than the secretive principle, what should become a rich rosy blush in a fruit is changed to a sickly yellow, and the rich jet black of a grape becomes a foxy red. Some grape-growers of eminence, in view of these facts, shade their vineries during the coloring process; but others, instead, keep the atmosphere as close and moist as possible. The latter course detracts from the flavor of the fruit. The best plan is that which combines both practices.

VEGETABLE GARDEN.

Celery for early use is often planted out this month, though for winter use July or August will be early enough. It is best to set out in shallow trenches, for convenience in watering, the celery being fond of hydropathic appliances. If the ground has been deeply subsoiled, and the subsoil well enriched, the trenches may be near a foot in depth, for convenience in blanching; but beware of planting down in poor, barren subsoil. Many plant in double rows. Where very superior celery is not an object this will do, but the single-row system is the best for excellence. The season is now arriving when the advantages of subsoiled ground will be apparent. In such soil plants will grow freely though there be no rain for many weeks. 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.

Cabbage and Broccoli 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.

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.

Peas for a fall crop may be sown. It is, however, useless to try them, unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless, have great difficulty in getting fall peas to get through free from mildew; and to obviate these drying and mildew-producing influences, they often

plant them in deep trenches, made as for celery, and are then much more successful with them.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well-enriched piece of ground is essential, as by growing fast they get ahead of the ravages of the fly. Manures abounding in the phosphates—bone-dust, for instance—are superior for the Turnip.

Sweet Potatoes must be watched, that the vines do not root in the ground as they run, which will weaken the main crop of roots. They should be gone over about once a month, and with a rake or pole, the vines disturbed somewhat from their position.

Endive is becoming very popular as a winter salad. Now is the time to sow. The Curled-leaved is the most desirable. Sow it like Lettuce.

Asparagus-beds should not be cut 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.

Communications.

DR. GARDETTE'S MEMOIR OF DR. BRINCKLE.

BY I. N., PHILADELPHIA.

We have just read with great pleasure and equal profit Dr. Gardette's biographical memoir of the late Dr. William D. Brincklé. It was prepared by him at the request of the Pennsylvania Horticultural Society, of which Dr. Brincklé was a most distinguished member. The society could not have selected a more suitable person than the writer of this memoir, not only on account of his being on terms of the closest intimacy and friendship with the distinguished man whose worth he commemorates, but also on account of the ready and graceful pen he holds.

The memoir is divided with good judgment into two portions. The first treats of his medical life, and the last of his rank and standing as a horticulturist and pomologist. Delaware has the honor of having given birth to Dr. Brincklé. His father was a physician there, and attained considerable skill in surgery. His mother was a niece of Cæsar Rodney, one of the honored signers of the Declaration of Independence, from that State. Dr. Brincklé commenced his medical career in Wilmington, in 1820, and shortly afterwards married a niece of our distinguished surgeon, Dr. Physick. He soon found that his talents called him to a larger field of use-

fulness than his native State afforded him, and in 1825 he removed to Philadelphia. He, as his biographer tells us, "became closely associated in practice with Dr. Physick, who made him his chief assistant in his surgical operations, and left Dr. Brincklé to attend the patients on whom he had operated." This introduction into practice here, under the auspices of this most distinguished surgeon, no doubt was the stepping-stone of success for the young physician from Delaware, and he was soon appreciated by the public, "as the conscientious and judicious medical man," and deservedly acquired a large practice in his profession.

But it is time that we turn our attention to him as a pomologist. He appears not only to have inherited his talent for surgery from his father, but his taste for the cultivation and amelioration of fruit also. About the year 1840, as we learn from this pleasant biography, Dr. Brincklé, while in the full tide of medical practice, felt the need of some relaxation, on account of his delicate health, and at once judiciously sought to invigorate his jaded and care-worn frame, with healthful horticultural pursuits, or what our author happily terms, "relieving one species of labor by another of a different character." Without abandoning his large practice, he could find "hours of the early morning which he could devote to plants and trees in his yard, and where his knowledge of botany was industriously followed up by studies and investigations in its dependencies of Horticulture and Pomology."

We regret to learn, from his biographer, that one so justly distinguished for his practical and scientific knowledge in these kindred pursuits, has left no general record of his labors, except what may be gathered from his correspondence, which is voluminous, and from his innumerable detached notes, descriptive of fruit and its origin. This is the more to be regretted, for so few among us possess the requisite knowledge to enlighten the public, whose attention now is so largely devoted to these pursuits. There are few indeed among us who are Downings or Brincklé's. We wish we had more men of this true stamp. But let us give some of the labors of this gifted pomologist, in the forcible language of his biographer:

"These letters are, however," says he, "evidence that he forwarded thousands of various kinds of grafts, carefully packed in oiled silk, also packages of trees and specimens of fruit to many places in the United States, and occasionally to other parts of America and to Europe, by express, by mail, and by other public conveyances, always being care-

ful to pre-pay the cost of transportation. So frequent and so liberal were these acts to distant nurserymen and strangers, that in many instances such persons have written to Dr. Brincklé, supposing him to be *in the trade*, giving him large orders for plants, and taking for granted that he had sent the first specimens, only with a view to make sales and advance his own profits. It was something new in the business world, to meet with a man who would labor and bear expense disinterestedly, for the benefit of others, with only the pure motive of improving the fruits of the earth."

No wonder that such a man made a reputation for himself in this branch of science, without dreaming of it. We have few such enthusiastic amateurs and we are not surprized that some of these distant strangers supposed him to be a professed tradesman who was only seeking his own profit. Of such a disinterested genius well may his biographer declare that "the true character of Dr. Brincklé's labors in Pomology are but partially known even to his intimate friends, and the world has been benefitted, our sources of health and enjoyment augmented, without knowing whence these blessings were derived."

But in noticing this pleasant and entertaining discourse, we fear, Mr. Editor, we are trespassing too much on your limited space. Let us however, in conclusion, say with our author, that there is no member of the Horticultural Society, with any knowledge of its transactions, who would not freely and frankly "concede to Dr. Brincklé the merit of having been among the most useful, the best informed and most liberal contributor to its advancement and good standing." In claiming for his friend this character, he claims no more than the subject of his discourse was fairly and justly entitled to and which the community freely awards to him.

THUJA DOLABRATA VARIEGATA.

BY MR. F. PARKMAN, JAMAICA PLAIN, MASS.

This beautiful variegated evergreen seems likely to prove quite hardy. I planted in the open ground last November, a small plant struck under glass the previous winter, inverted a flower-pot over it, and left it to its fate. In February, I raised the pot to examine it, when the little plant came up with it, sticking frost bound to the edge. I replanted it, and again examined it at the end of March; it was uninjured. It is now full of sap, preparing for vigorous growth.

In a neighboring town it has stood with very little protection.

THE MELODY AND HARMONY OF COLORS.

FROM DR. M'COSE, BY REV. W. M., D.D.

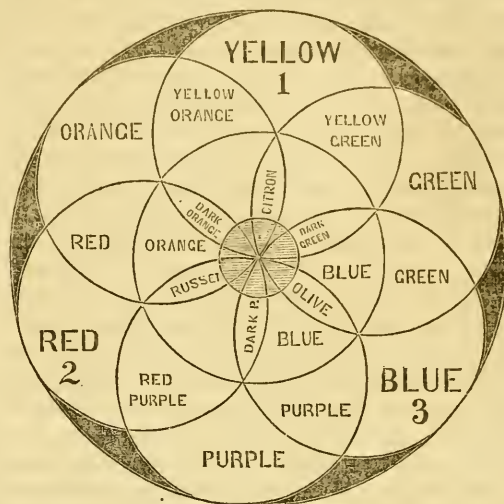
According to the commonly adopted doctrine, there are three primary colors, Red, Yellow and Blue. The combination of these in certain proportions, yields White. The absence of them all is Black. These primaries, mixed together two and two, produce what is called secondary colors, viz. : Orange, from the mixture of Red and Yellow; Green, from the mixture of Yellow and Blue; and Purple, from the mixture of Red and Blue. From the combination of the secondaries arise three tertiary colors: Citron, from the mixture of Orange and Green; Olive, from the mixture of Green and Purple; and Russet, from the mixture of Orange and Purple.

The language of music has been applied to colors, and colorists talk of the melody of colors, and the harmony of colors. Colors are said to be in melody when two contiguous tints, or shades, or hues, run insensibly into each other,—as when Red slides into Pink and White, and Purple deepens into Dark Purple, or merges into Red Purple and Red. Two different colors are said to be in harmony when their association is felt to be pleasant to the eye.

Two colors are said to be complimentary when they together make up the white beam. Thus Green and Red are complimentary, as also Purple and Yellow, Orange and Blue. The eye feels pleasure in seeing colors in melody, or melting into each other. It also feels a pleasure in contemplating certain associations of different colors. In particular the eye is pleased when complimentary colors are beside each other, or are under the view at the same time. Complimentary colors contrast the one with the other, but are always in harmony. It is necessary to add that White associates pleasantly with every other color; so does Black.

The following diagram is constructed with a view of showing what colors are complimentary to each other. In the figure we have three primary colors: Red, Yellow and Blue; and the three secondaries, Orange, Green and Purple, with the hues of secondaries on either side. We have also the tertiaries, Citron and Russet. The diagram is so constructed that the colors in corresponding segments of opposite circles are complimentary, and so in harmony. Thus, Red and Green, Blue and Orange, Yellow and Purple, are complimentary colors. According to the hue of any particular secondary, so is also the hue of its complement. Thus a pure Purple requires a Yellow, but a Red Purple requires a Yellow Green, and a Blue Purple a Yellow Orange, as

the complimentary color; and so of all the other secondaries. The tertiary Citron is in harmony with a Dark Purple, Purple requires a Yellow, but an Olive with a Dark Orange, and Russet with a Dark Green.



These principles are taught now in every School of Art, and are attended to in the manufacture of all our finer fabrics, in which color is an element of beauty: as in dresses, carpets, hangings, and furnishings of various descriptions.

Green harmonizing with Red and Russet.—The soft hue with which the Author of nature has been pleased to give the leaf of the tree and herbage, is by far the most abundant color in the vegetable kingdom. Now, wherever the flower of a plant is Red, it associates agreeably with the leaf. The flowers of the rose, and many pinks, geraniums, pelargoniums, mallows, lychnises, and dozens of others contrast strikingly with the foliage of the plants on which they grow. The eye delights to see the fruit of the cherry, the rose and the thorn, and they berry of the holly, the mountain ash, and other plants peeping forth from the Green leaves.

Purple harmonizing with Yellow and Citron.—This is the second most prevalent harmony in the vegetable kingdom. So far as we have been enabled to observe, Purple of various tints, shades and hues, such as Red Purple where there is a preponderance of Red, and Blue Purple where there is a preponderance of Blue, is the most frequent color of the petals of plants. In beautiful contrast, we often find Yellow in the centre of the flower. Thus in the garden polyanthus, and many varieties of auricula, the outer rim of the corolla is purple, and an inner circle is Yellow. Purple and Citron are also commonly associated with the flowers of grasses.

Orange harmonizing with Blue and Olive.—This harmony is less frequently met with in the vegetable kingdom. (It is very common in the sky.) A pure Blue, however, is rarely to be met with in the flower in any of the organs of plants. Most of the flowers called Blue have more or less a tinge of Red. In the flower of the Forget-me-not, which ever greets the eye so cheerfully, there is a border of Blue Purple, and a centre or throat of Orange Yellow. In the Pansy, so rich and soft, that it has obtained the name of "Hearts-case," we have Yellow and Purple of various hues and degrees of intensity, brightened by a mixture of White. In the Daisy, described as "crimson-tipped," by Burns, there is the Yellow disc, harmonizing both with the White ray and Purple on its tips. These flowers are favorites with all classes, peer and peasant, old man and young maiden, countryman and townsman. They pleased us in our childhood, when we seized them, and sought possession of them so eagerly, but found them fading, like all earthly enjoyments.

The frequent juxtaposition of complimentary colors must have a physical as well as a final cause. If it be asked, what this is? we are inclined to answer by asking another, the answer to which may possibly open the way to open the first. When a beam of light falls on a green leaf, the Green is said to be reflected and the Red absorbed; but we ask, what becomes of the Red? When the beam falls on a purple petal, the Purple is said to be reflected and the Yellow absorbed; but what becomes of the Yellow? Are the Red and Yellow in these cases absolutely lost? If these constituents of the beam be lost, they are the only powers in nature which are. In this world of ours, nothing which has existed is lost; as nothing new absolutely comes into being. It is now a received doctrine, that the heat absorbed by plants, in the geological era of the coal measures, is laid up in fossil deposits, and may come forth in our epoch, when the coal is ignited. May we not suppose, in like manner, that the Red absorbed by the plant, when the Green is reflected by its leaves, will come forth, sooner or later, in some form; in young stem, flower or fruit; and that the Yellow absorbed by the flower, when the Purple is reflected, will come out in the yellow pollen, or in some other form? We have thought, at times, that as the pure White beam, when it reaches the earth with its atmosphere, is divided into several rays, and that no one of these is lost; and as they will come forth sooner or later, we have thus a harmony of colors in nature.

FLOWER MARKETS.

BY M., PHILADELPHIA.

Among the many objects of beauty in beautiful Paris, none are more attractive to the stranger than its "Flower Markets." These are held in various parts of the city, the precise spot being regularly advertised in *Galignani's Messenger*, as a place of resort. The market is held in one of the open spaces in front of a public building, the Church of the Madeleine, for instance, when the street is covered with a beautiful collection of flowering plants in pots, each one having a back-ground of clean white paper for the foliage and flowers to rest against, and which conceals the pot.

The markets are generally attended by females, who preside over their collections of floral beauties with a grace and vivacity perfectly irresistible, for if "Monsieur will not buy a plant, he will at least accept a bunch of violets.

There is probably no city in this country better adapted for displays of this kind than Philadelphia, its public squares being admirably located for flower markets; and that we have among us the materials for such a show, no one can doubt who has seen the numerous collection of flowering plants now offered for sale along the side walks of this city; and could the proprietors of these be induced to combine their various collections into one grand display, the effect would be to have a flower market quite equal to that of Paris, and which would attract thousands of visitors, who would become much more profitable customers than the mere passer by, who is accidentally tempted to purchase from the collections now shown at a great disadvantage on the crowded side-walk.

Nor need there be any delay in carrying out this project for want of suitable place, as our City Councils, several years ago, passed an ordinance appropriating the south side of Walnut Street from Sixth to Seventh Streets, (comprizing the whole of the north side of Washington Square), for the purposes of a Flower Market. This law remains in full force, and here we have an admirable location to start the enterprize, and it is only necessary for our gardeners to meet together, agree upon a schedule of prices, etc., and advertise that on a certain day, (say in June), there will be held at Washington Square, a grand Flower Market, for the display and sale of flowering plants, shrubs, bouquets, etc., similar to those held in Paris. This would attract large numbers of persons by its novelty, and the "Flower Market" would soon become one of the institutions of our city, and a fashionable place of resort, both for strangers and residents.

TASTE IN ARRANGING FLOWER-BEDS.

BY CUI BONO.

It may seem out of place for an amateur, looking on from a distance, to want to take part in a discussion with practical men, on matters of principles in gardening; but as *taste* is more of a natural gift, than a something to be learned from practice, I may, perhaps, be pardoned.

I am not sure that I am right in assuming to understand the points of the discussion on arranging flower-gardens, debated before the Pennsylvania Horticultural Society, and as reported in your paper, as you have not published the principal essay of the evening, [It will be found in our present number.—Ed.], but there is a fellow-feeling with me in a remark by one of the speakers, a Mr. Eadie, that I like to dwell more upon. Mr. E. is reported to have said, that whether a garden should be formal or not depends on the position. Precisely so; and allow me to say that I am surprised that the idea is not better assented to. In the same paper, the speaker says many small places are ruined by "too much Landscape Gardening." Good again! there is some hope for American gardening when such sensible remarks find appreciative audiences. On the other hand, when a speaker says box-edging is bad, or geometrical forms are bad, he should qualify his remarks by saying, "when they are out of character with the surroundings."

I have never read a work on Landscape Gardening that did not seem to me to be calculated to lead its students into error on this point. They lay down what they term abstract rules of beauty, when there can be no such abstract rules. There can be no beauty independent of the thing that is beautiful, and all rules for detecting it amounts to mere "bosh." They tell us that curved lines are more beautiful than straight ones; and they go about making every thing about them curly and crooked, growling, no doubt, at the unlucky fate that did not make all men bow-legged, and considering it a *lucus à lucæ*, of the most monstrous kind that the beautiful curvature of helpless old age should not have been the fate of the erect and sprightly youth.

Harmony, appropriateness, and a general concord of parts, no matter what direction the lines may take, are no doubt the true "elements" of beauty, undefinable as these may be, and capable of demonstration only by illustration in some object before us. A curved line is absolutely ugly unless it has some relation or fitness to the object it bounds. A line is nothing in itself. It belongs to that which it encloses; and if it defeats or opposes an appar-

ent purpose, it is an outrage on common sense to call it beautiful. An irregular surface, when the modulations are in conformity with some happy design, or with some pleasing association, is pretty; but when it is out of all character, or seems incongruous, and of no evident purpose, it is not. A humpbacked man is not pretty merely because he has an "irregular surface."

Why then should "geometrical forms" in gardening be objected to? All forms are "geometrical,"—but, probably, those who use the term mean right lines. There are innumerable cases where no other lines are admissible. I need not stop to point out where.

So with box-edgings. Near a window, or by the side of a doorway,—or along straight walks, nothing is more effective than vases, or artificial baskets for flowers. They are beautiful because they are "effective." Their artificial character is their chief charm. Nature and art beautifully intermingles, and introduces us step by step, without violence to any feeling, gradually to the more exclusively natural parts of the grounds. Now I have seen cases where there were no such vases or baskets, but, perhaps, oval flower-beds, with low, green box-edgings between them and the grass lawn, and the effect was just as pleasing as with the works of art aforesaid. There was no particular beauty in the box-edging. Away on the lawn, far away from the house, it would be disagreeable. It was the piazza, the terrace it was on, with its sloping bank, and straight walk along the base, that made it so pleasing to look upon. The edging may have been as "stiff" as some of your Horticultural Society friends would believe it to be; but the effect was good for all.

And then for a kitchen-garden, what can be more charming than box? The whole expression of a kitchen-garden is *art*. Level and square and smooth and prim, the true principle is not to antagonize, but to boldly defend, and glory in it; and to this end box-edgings is an ally of the most faithful kind. The art of the kitchen-garden, like that of any other department of gardening, should be a living art,—not mere wood or metal or stone, but the art of vegetable growth, in all cases where it will accomplish the purpose desired; and as an edging, stiff as its surroundings, and effectual as any thing can be for its purpose, box is the best, the very best, of all things.

"These are my sentiments." I have often searched for some stumbling-block in the track of these ideas, but so far have not met one.

DR. WILLIAM DARLINGTON.

BY ORCHIS.

I have just returned from paying the last tribute of respect to Dr. Darlington. A man who by his natural talents raised himself to eminence, and by his sterling virtues and unswerving integrity of character, maintained the highest position in the social circle, as well as in the literary world. Historians will, beyond a doubt, record his scientific attainments, and place his name upon the very highest pinnacle of fame, as one who, throughout a long and useful life, strove to make men good and wise. As an humble follower in his footsteps, and an admirer of his character, I could not let the present occasion pass, without expressing my love for his modest demeanor beneath an exalted mind. My heart swells with pleasure when remembering that kind benevolence that prompted him to aid the students earliest efforts, to smooth the thorny paths of science, and simplify the task.

No haughty self-esteem, or cold reserve was shown to the humblest devotee of Flora; but the same kind smile, approving word and hearty welcome, to all that sought advice.

Dr. Darlington is dead! And we that loved his very presence, and lingered on the words that flowed from his almost inspired mind, will feel the loss as keenly as it is possible to do. But thanks to the kind, the many kind mementoes of his knowledge, his name shall never die, whilst these at least shall be extant.

As I stood by his lasting resting-place, and saw all that remained of this great and good man consigned to the mother earth, an eloquent passage from one of his works rose up before my mind, and I thought a grateful people would carry out the wish expressed. In speaking of himself he says: "His efforts have been amply repaid, by the gratification attending the communion of kindred spirits; and such is the delight in the pursuit, that sometimes, in his dreamy reverie, he indulges in the flattering idea, that if, peradventure, his work should survive him, he may continue to be an humble auxiliary of our youthful Botanists, and, in some sort, a companion of their studies, when the flowers of Chester shall be blooming on his grave."

REMARKS ON THE CULTURE OF MEYENIA ERECTA.

BY MR. DANIEL BARKER, YONKERS, N. Y.

Meyenia is a plant that can scarcely be dispensed with either in hot or greenhouse decorations, being at the same time one of the handsomest and free blooming plants which we have in cultivation.

To commence with the soil that I have found the most capable of supplying the greatest amount of nourishment. I use turfy loam, leaf mould, and rotten cow dung in equal parts, with a good admixture of coarse river sand, sufficient to keep it open and porous; the whole is chopped up together, but not sifted. I prefer a young plant with a single leader, which is pinched out to two or three pair of leaves, which will cause the production of shoots, which can be equalized to form a handsome head. The plants are then placed in an atmosphere of about 70° by day and 60° by night. Thus situated the plants will make rapid growth, when they will soon require repotting, being careful to give plenty of drainage and to place them in the same temperature, syringing with chilled water every fair evening. When the shoots become of sufficient length, (from six to eight pair of leaves), pinch off the ends at once and thus produce an extra quantity of side shoots. At this stage of their growth, if the roots are healthy, they will push very strong. To produce good specimens, the shoots must be arranged at regular distances, bringing them down to the rim of the pots. After having been pinched in, we water more sparingly for a few days, as they are very apt to bleed. As the season advances, the temperature may be raised to 75° by day and 65° by night. A moist atmosphere is very beneficial to them at this stage of their growth; to promote this the pipe and walks should be sprinkled from time to time throughout the day. In order to prevent too rapid evaporation when the sun is strong upon the house, the plants are placed in a slight shade. Soon as the new shoots are about four inches long, we give the plant another shift, being very careful not to injure the roots. They are still kept in the same temperature; continuing to shade, syringe, and preserve a moist atmosphere. At this stage of their growth they will make very vigorous progress. Should any of the shoots get too much ahead of the rest, they are pinched back, in order to make handsome specimens. By the end of September they will have completed their growth, and from this period they will continue to flower in a temperature of from 60° to 65°, throughout the winter months, during which time we are very careful to preserve the plants from cold winds, admitting air only when it can be done with safety.

A succession of bloom during the entire year can be obtained by starting the plants into growth at intervals throughout the winter and spring months; the first being raised by cuttings in January, which will make nice blooming plants the following

autumn. A succession of cuttings are put in during the months of February, March and April.

Treated as above, they will form objects of great beauty from January to December.

After flowering, the plants may be cut down, and after having pushed again about one inch, the ball may be reduced, the plants repotted, and have every encouragement afforded them; when, after a few months, they will again afford a fresh display of more beautiful flowers.

Thus annually managed, they will last several years. If rooted young plants are preferred, cuttings can be easily struck in sand, under a bell or hand glass, in a mild bottom heat, they will take root in about a month; when sufficiently rooted, they should be potted off without delay.

ARRANGEMENT OF FLOWER-GARDENS.

BY MR. WALTER ELDER.

Read before Pennsylvania Hort. Society, April 7th.

Having been unexpectedly called upon, at a late hour, to supply the place of Mr. H. A. Dreer, the appointed essayist for the evening, he being unfortunately prevented from preparing an article, I entered upon the duty with diffidence, and an apprehension in my ability to do justice to the subject, which will, I hope, be sufficient apology for any omissions and imperfections.

It is fashionable now, in Great Britain, to have the ground of the flower-gardens in grass, and beds of different forms dug out of the sod for small flowers, which are generally planted on the ribbon style; which are remarkably beautiful, and makes a great improvement compared with the promiscuous arrangement, which is often an incongruous confusion.

On private establishments the flower-gardens are immediately in front of the mansions; and the very green grass neatly cut short, and the pretty blooms of the flowers make an elegant appearance. In public gardens the beds are dug out of the sod bordering the broad gravel walks; and occasionally a large square, or oblong quadrangle, is wholly made into grass walks. In the centre of a square there is a large Rosary: a circle; in the oblong quadrangle the centre rosary is an oval; at a proper distance from the centre rosaries, a number of beds, all the same size and shape, are made, forming in the whole an oval or circle; between these beds there are spaces in grass, wide enough to go round them to dress them. The rest of the figures are made into beds of different forms, to show well from the outside. The whole is well executed, and has an admirable effect. But among all the different

forms of the beds, the circles, ovals, and oblong quadrangles show the beauty of the flowers to the best advantage. Diamonds, triangles, and others with sharp points, do not suit. As there are no dwarf flowers but will spread over on the sod and kill the grass, and to plant slender upright kinds would be eyesores. There are no trees nor shrubbery planted among the beds of small flowers; they are arranged in clumps in other parts of the grounds and along the outskirts, shading walks and perfuming the air with their fragrance, and have a beautiful effect. That grouping of the beds of small flowers at one place, shrubbery at another, and the trees by themselves, show the different departments of the ornamental garden; and having open spaces between them, there is no apparent derangement, mixture or confusion.

In making a flower-garden with us, we need to give some shelter to the beds from the cutting winds of winter, and from the very drying air of summer. An enclosure of an evergreen hedge is best for that purpose; as the snows would fall and drift more into the garden by the shelter in winter, and the force of drying winds of summer, would be broken and the soil would be kept longer moist, and all flowers would thrive the better. In the middle of such a garden there should be a well or cistern, and all drains might be led into it, or the rain waters off buildings could be led into it by pipes under the ground; or, if rains are used to supply the house, a pipe might be run into this cistern, and an ornamental pump set in it; it would be a convenience and saving of labor in watering the garden. Broad gravel walks should be next the hedges, and gravel walks leading from them to the pump in the centre. The ground may be grass, with suitable flower-beds; and there might be an arbor both sides of the pump, but several yards from it, to train vines upon; there should also be trellis work at different points to train fancy climbers upon, such as Manettia, Cypress-vine, Maurandia, Thunbergia, Nasturtium, etc. The arbors could be clothed with climbing roses, Wistaria, Sweet Clematis, Jasmine, Honey-suckles, etc. A good sized rosary, circle or oval, might be made on each half of the garden, the pump forming the centre; and beds formed for small flowers of different kinds. A few dwarf shrubs may be set upon the sod, but not enough to hide any of the beds from any one point.

When the beds are formed, the soil, for at least 18 inches deep, should be all dug out and mixed with a quantity of leaf mould, rotted manure and sharp sand, if it is of a stiff nature, and give occasional dustings of fresh slacked lime, wood ashes or

charcoal dust to kill any insects that may be in it. After mixing, leave the heaps a week or fortnight to aerate, and the bottom and sides of the empty beds will be sweetened and greatly benefited by the light and air. After the beds are filled in, they should stand above the sod a convex; but keep them low at the edges to prevent the roots of the grass growing inwards; they should stand at least a fortnight after being filled in to settle down before planting any flowers in them; the borders around the arbors and where trellis work is should also be so done with. The foundations having been so substantially made, they will nobly support the structures that are to be put upon them.

To make a flower garden upon the open lawn, it may be the same as the one we have enclosed, except that it will have no hedge around it. In making flower gardens in public parks, I think the British style of grouping each department is best, as it produces the most striking effect; but our walks and roads should all be well shaded with trees of spreading heads.

In planting the beds of small flowers, I would adopt the ribbon style very largely. We have a great many more different kinds of plants, and a greater variety of colors of bloom that flower at the same time than the British have.

I grow great numbers of bulbous and tuberous-rooted plants, and get two crops of flowers yearly off the beds; just think of Crocus, Hyacinth, Tulip, etc., each arranged beautifully on the ribbon system, and immediately followed by Verbena, Penunia, Phlox Drummondii, etc., each with its various colors arranged in the same style. Our flower gardens have only produced half crops; let more kinds of plants be purchased and planted at proper times, and also properly taken care of, and then we will excel in the flower-garden, as we do in many other things. It matters not how neatly laid out a flower-garden is, nor how nicely it is kept, unless it is well stocked with the choicest kinds of plants suitable for our climate. We have too many old foggy gardens. Pæonia, Dyeltria, etc., should be planted singly in small gardens, and at proper points to give good effect at their time of blooming. The same with many herbaceous plants; and so with Dahlias and Chrysanthemums. By a proper arrangement of these all parts of the garden will have an equal amount of bloom at all seasons. Carnation and Picotee Pinks, Pansies, etc., will be best in beds by themselves; and the beds of such sizes to suit. The flowers that bloom all the season, and those that diffuse fragrance will be so arranged as to keep up a pleasing equilibrium in all parts of

the garden. There are so many beautiful blooming plants for the flower-garden, that I am unable in the space allotted me to give lists, very full lists and descriptions, however, are given in most Nurserymen's catalogues. But different selections are required for different gardens, according to sizes, situations, etc.

Where there is a good supply of water, a small pond might be made, either in the middle or one of the corners of the flower-garden, for growing aquatic plants. It may be lined along the sides with rough quarried stones and Periwinkles, Ivys, Ferns, Hydrangeas and many other kinds of plants planted among them, and grow over them. A small brooklet running through the garden, with fancy bridges over it, and clothed with flower-vines and the grassy sod reaching down to the edge of the water, is a most delightful feature. Where there is such a thing, or a well fed pond, there would be no need of a cistern in the middle, as they would supply all the water needed for the garden in summer. The grass should be kept short by frequent mowings, as, when left long uncut, the weeds go quickly to seed and fill the ground with weeds next year; indeed, all the weeds should be dug up by the roots every time the grass is cut; however carefully they may be taken out at one time, there will always be some left, and they will soon show themselves. It is a wise practice to scratch the sod roughly with an iron rake late in the fall, and sow fresh grass seeds upon it; the young plants from them will be greener and look fresher than the old. A top dressing of rotted manure should be given one year, and the next sow guano or super-phosphates over it; if all these are properly attended to, there will be but little withered grass. The edgings of grass along the gravel walks and around the flower-beds and individual plants, should be cut in neatly every time the grass is cut; the edging iron should be pushed well down to cut the grass roots below, and prevent them growing into the beds. The gravel walks should be shallow dug over in open weather in March, after frost; it being very loose then, it is easily done, if it requires a fresh coat it should be put on just when it is dug, as the new will bind with the old better. The rolling is best done when the gravel is dry.

All manures applied, should be so rotted that all seeds in them will be killed. Empty beds may be dug up and manure put over them in the fall, when all herbaceous plants should also get a covering of short manure. For newly planted bulbs, mix manure and sand with the soil, and after they are

planted, the beds may be covered with leaves from the woods, and put stakes over them to keep the winds from blowing them away. The snows will drift thickly in among the brush, and the temperature below will be more uniform, and the soil undisturbed with freezing and thawing. As the soil below is warmer than the weather in fall, it is best to cover the bulb beds early, so as to retain the heat in the soil, and the bulbs will make larger roots, and the blooms will be stronger and better in spring. These coverings should be removed after all hard frosts are over; the air then is warmer than the soil below, and it will heat the soil and hasten vegetation. The rotted leaves next to the soil should be left, and the soil stirred with a hoe, they will soon incorporate with it, and give strength to the plants.

The pruning should be done at different times; hardy shrubs may be pruned in the fall, Honey-suckles after they have lost their leaves; Clematis, Jasmine, Wistaria, etc., had better not be pruned until spring, unless Wistaria has overgrowths; Clematis and Jasmine are saved by their foliage, and only need the dead branches cut off. Where there are hedges, they should be neatly clipped in April and August. All parts of the garden should be kept neat and clean; and no plant should be allowed to bear seed; cut off all blooms as they fade, and succession of blooms will follow each other, and the garden will be kept in splendor all the growing season.

Summer bulbs will be a great ornament, particularly the "New French Hybrid Gladiolus," the dazzling brilliancy of the blooms, of many shades, and at a time when nearly all flowering plants droop with the heat and drought, renders it most valuable acquisition to the flower garden. Amaryllis, Tuberoses, etc., are well known ornaments of the garden. As many of the bedding plants need to be taken up and potted in the fall, and protected in winter, a greenhouse is an excellent helpmeet to the flower-garden.

LIMNOCHARIS HUMBERTII.

BY MR. DENYS ZORNGIEBEL, CAMBRIDGE, MASS.

I think I ought to bring to the notice of amateurs, by your *Monthly*, the aquatic *Limnocharis Humbertii*, of South America.

Introduced into our garden (the Cambridge Botanic) about two years ago, and grown the first year in a tank in the greenhouse, we tried last summer a plant of it in the garden pond, where, to our surprise and satisfaction, it grew in a very short time, to a very large size, nearly filling half our pond,

which is about 50 feet in diameter,—literally covered with a succession of its showy yellow blossoms, not unlike *Escholtzia*. Unchecked by the first frosts, the plant was in bloom in November. We think it one of our most valuable acquisitions.

Although not new, it is yet scarce in gardens. I am not yet able to speak of its hardiness; I rather doubt it; but it is very easily kept in any small tank in the house, and propagated freely of runners.

[We should be very glad to hear from Mr. Z. more frequently.—ED.]

ON THE WINTER EFFECTS OF COLORED WOODS IN LANDSCAPE GARDENING.

BY C., NEW YORK.

I do not know that it has ever occurred to others, how much may be done towards rendering a garden cheerful in winter, by employing shrubs with colored woods in the arrangement of the planting. Downing certainly makes no allusion to it in his "Landscape Gardening," and I have not, that I remember, seen it referred to in your excellent *Monthly*. I have often thought of it, and have intended to try something of the kind on my grounds so as to form some idea of the practical effect, but have always forgotten it when the proper planting time came about. It occurred to me again recently through happening to see a Golden-barked Willow and a small nursery of Silver Maple trees aside. The Red and Gold together, against the back-ground of snow, that laid on the side hill on which the trees were growing, had quite a pretty effect, though of course you will say better matches of color could be made than this accident afforded.

How would a mass look having, say for the outside a thick set of the Red Dogwood (*Cornus sanguinea*), then a circle of the green shoots of the Ash-leaved Negundo, then the red scarlet of the Silver Maple, and the Gold Willow behind, all kept twiggy and dense by pruning?

Perhaps some of your taste loving readers will communicate their views and experiences. No doubt many would be interested,—certainly the writer of this.

[The idea is novel, and has merit in it. Our columns will be cheerfully open to further communications. The White-berried Dogwood (*Cornus alba*), has the brightest colored wood, and is probably the one our correspondent refers to. *Cornus sanguinea* has dull brown wood.—ED.]

CIRCULATION OF THE SAP.

BY YARDLEY TAYLOR.

In the April number of the *Monthly*, is an article on the "Circulation of the Sap, by D., Mittineaque," the last sentence of which is as follows: "What the force is, whether light, heat, electricity or capillary attraction, that, before the leaves put forth, makes the sap ascend," which I would like to see freely discussed. In answer to this, I would ask to give from the *Horticulturist*, by B. A., who the Editors say, "is a man of science, and likes to account for facts on scientific principles:"

"Cover the lower end of a tube of water, tight with a piece of bladder or other membrane. Fill the tube partially with a dense liquid, as sugar and water. Place the tube upright into clear water, or into water with less sugar. The denser liquid will draw the lighter liquid into the tube, and it will gradually rise until it will run over the top. This is called *endosmosis*, or going within. If the dense liquid be outside, it will draw the lighter liquid out of the tube. This is called *exosmosis*, or going out.

"A plant is a collection of tubes. Each minute tube is divided into a succession of cells, by membranous diaphragms. The evaporation from the upper part of the plant renders the upper part of the sap more dense than the lower. Endosmosis causes the sap to pass each diaphragm in succession, as it rises towards the top of the plant against the force of gravity. The sap is kept in its regular channel by the walls of the tube. Some physiologists maintain that each leaf has its own distinct tube from the root."

Here is a scientific principle, that appears to me to fully meet the case, and is sufficient to explain all we see in the circulation of the sap. I do not say it will explain all that has been said of the circulation of the sap; for the supposition of the downward flow, as intimated by your correspondent, has, in my opinion, no foundation in fact. I have been something of an observer of nature for fifty years or more, and I have seen nothing to lead me to such a conclusion.

In a former number (p. 260, 1862) I have given my views somewhat at length on this subject. The sap at the first rise is nearly transparent, as in sugar making time; later, when the leaves have put forth, it assumes a milky appearance beneath the bark; later still, say at harvest time, it is a jelly-like solid, and at the fall of the leaf it is solid wood. Warmth or heat has an effect to retard or accelerate the motion of the sap. When we want water to have a greater effect on matter, we heat it.

Rare and New Fruits.

NEW PEARS BEFORE THE MASSACHUSETTS HORTICULTURAL SOCIETY.—A recent report of last year says:

"In no previous year, since the formation of the Society, has there been a greater, if so great a crop of pears, as was produced the present. This abundance was not confined, as it sometimes is, to any class of varieties, or particular situations and districts, but was universal wherever the pear tree is cultivated, and those of every variety have been loaded to breaking with fruit. Pears, too, have been not only abundant, but of uncommon size and beauty; there has been little or no blight or cracking of the fruit, as is common with the Flemish Beauty, Beurré Diel, and some other kinds; but they have been almost universally smooth and fair. In some of the earlier varieties, those of the summer and early autumn, there seemed to be a deficiency of richness and flavor, but this defect, if it existed with them, did not appear to extend to those of a later season. There has been abundant displays of this fruit through the season, by numerous exhibitors, of fine specimens in great variety. There have been many new pears exhibited.

Of pears of native origin, specimens of three new seedling varieties were presented to the Committee by Dr. S. A. Shurtleff, of Brookline, raised by him and being each of the first year of bearing. One named Admiral Farragut, another John Cotton, and the third unnamed. Admiral Farragut was a large pear of obovate form, with a long stem, green in color, flesh fine grained, melting, but not very juicy, subacid. The John Cotton, was of medium size, obovate form, tapering towards the stem, skin of a pale yellow, flesh melting, juicy, slightly subacid, and moderately vinous; season of both, middle of September. The unnamed variety was very large, and in shape, color, and character of the flesh, seemed almost a reproduction of the Diel; its season, November. As has been said, no reliable judgment can be formed of the value and character of a new fruit from once tasting it, and most especially does this apply to a new seedling pear in its first year of bearing; for pears of the first, and even of the first three or four years of bearing, furnish no sure and certain indication of what the variety may eventually prove, after it has by age become fixed and determined; there being frequently with age an increase of size and a change in the period of ripening or other particulars. All that the Committee, then, feel justified in saying with respect to these seedlings, is, that they, especially the two first named, produced a favorable impres-

sion. At the Annual Exhibition, Mr. Clapp had several of his seedlings on the tables, among others was one unnamed, but marked as No. 21, that seemed to the Committee to be superior in flavor to the Clapp's Favorite, though not equal to that variety in size and beauty.

RUSSELL'S PROLIFIC STRAWBERRY.—As we write, this new kind is in full flower. For vigor and luxuriance it is far ahead of all competitors. If the fruit is in the same ratio in good qualities, it will indeed prove a valuable kind.

As the season for fruits is opening, we shall be

glad of notes of every thing desirable that may come under the notice of our friends.

DANA'S NEW WHITE CURRANT.—Last fall we called attention to a new Currant, of which samples were sent us by Mr. J. W. Foster, of Harrison Square, Mass. The annexed cut is a fair representation of the fruit sent us. The growth is very stocky and distinct. The fruit had fermented before it reached us, so that we could not judge of its quality. The season for Currants is now approaching, and the engraving will call attention at a very proper time of what promises to be a valuable addition to as valuable a class of fruits.



The Gardener's Monthly.

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✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

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AMERICAN HORTICULTURE.

From what we have taken several occasions to say in reference to the operations of the Agricultural department of our government, and the errors in high places that are occasionally current, we need scarcely remind our readers, how jealous we are of the proper standing and position of "American Horticulture."

On running our eye over the table of contents of the April *Atlantic Monthly*, "American Horticulture" arrested our attention. From the usual excellence of the articles in this sterling magazine we expected a rich treat. We were seriously disappointed. The sketch is utterly unworthy of the heading. It does great injustice to the subject, and calculated to place us in a false position at home and abroad.

As we write we are totally ignorant of the authorship,—and we are glad we do not know, as it is our wish to discuss the subject without reference to who may have written it, and solely as an article published by a respectable magazine.

Under the head of "Domestic Intelligence" we give an extract from the *Atlantic's* article, and in the extract we do full justice to the whole chapter. We do not complain of the facts. Messrs. Landreth are eminently worthy and honorable men. We rank them among our best friends. They are entitled to all the credit they get; and we are free to say that very much more might be said of them in their favor, than is said by the writer. They have used a vast amount of energy, enterprise and skill in building up their immense business; and so far as that goes, have had an influence on making "American Horticulture" what it is as we find it.

But, to our mind, the treatment of this subject should go beyond the raising of Peas and Beans. If this is "American Horticulture," we fear the Wrenches, of London Bridge; Lawsons, of Edinburgh; Vilmorins, of Paris; or Haages, of Erfurt, deserve as much credit as any one.

The Seed-growers of Connecticut, New Jersey, and other places, also deserve some credit; and particularly the Buists, of Philadelphia, who have, to our knowledge, 400 acres under seed crops, and, perhaps, use indirectly, from other growers near them, the products of as many acres more.

To treat "American Horticulture" as it ought to be treated, it should be viewed as one of the fine arts, and its present condition, and the standard of taste of to day, measured by the past,—and those who have labored, prominently both now and in the past, to bring it to its present state, should receive at least a passing notice.

There are in the past commercial history of American horticulture, names that cannot be passed over. Without going back too far, Thomas Hogg, of New York, would stand in the front rank. A man of taste and energy, and withal a good man in every sense of the word, he exerted a wonderful influence on the men and women of his time. The elder Prince, also of Flushing; Winship and Breck, of Boston; and Bartram, McMahon, Hibbert and the elder Landreths, should not be forgotten. No less credit is due to the noble list of amateur horticulturists, who aided the commercial men in their enterprises,—Grimes, of Hell-gate, Dr. Hosack, of Hyde Park; and the Livingstons, on the Hudson, in the State of New York, are worthy of all praise; and the Cushings, of Boston; Cope, Hamilton, Thompson, Clapier, and Pratt, of Philadelphia.

Horticultural societies have also done something for horticulture as it is; and in this connection the Pennsylvania Horticultural Society, with the names of Pepper, Waln, Ingersoll, Vaux, and others as original active members, are prominently distinguished, who, with the commercial men of Philadelphia combined, held their first exhibition in the old Masonic Hall in 1829.

Horticultural periodicals also holds no mean place in the history. The first attempt was by Dikehut, of Baltimore, a monthly, with a colored plate, at \$5 per year, which, however, breathed but one number before its life went out. Breck, of Boston, we believe, came next,—and about the same time Hovey; but Hovey came off victorious, pushed aside Breck's, and continues to this day. Downing came next, with Luther Tucker's *Horticulturist*, and charmed by his sweet music the whole public ear. It listened eagerly to all that he had to say, and the effect was almost magical: chaste dwellings, and tasteful gardens, sprung up under his advice and teachings in every direction, and at his death their progress received a check so marked, that

close observers note it to have not recovered yet. Then came one or two journals in the West and in Philadelphia, and lastly our own *Monthly*, all of which have certainly had some influence on horticultural progress.

Something also is due to the commercial men of the present day. Hovey, of Boston; Parsons, of New York; Buist, of Philadelphia, and Feast, of Baltimore, spend thousands of dollars in importing new plants, with little or no profit to themselves, and chiefly to minister to the taste of amateurs, many of whom, however, do not appreciate their enterprize, but import directly from Europe, in pursuit of the national idea of "cheapness" even to its greatest luxuries. In one of these places, that of Buists', there are 30,000 feet of glass devoted to ornamental plants; and in seeds, besides these "plantmen" named, the Thorborn's, Bliss, Curtis, Washburne, and others deserve honorable mention.

Of the many amateurs whose influence on horticulture is of the most powerful description: Perkins, Gray, Wilder, and Hunnewell, of Boston, occur prominently to us,—also Mr. Kelley, of Kelley's Island; Buchanan and Longworth, of Cincinnati; J. F. Fisher, of Philadelphia; and particularly, Thos. P. Barton, of Montgomery Place, New York, long the residence of the Livingstons. Mr. Barton is the son of the famous botanist, Dr. Barton, of Philadelphia. His lawn comprises 100 acres, in most perfect keeping, besides flower-garden, vegetable-garden, hot-houses, forcing-houses, conservatories, cascades, waterfalls, grottoes, alcoves, statues, with walks enough for a day's journey, and a lovely and most accomplished lady for the presiding spirit. His garden is the envy, as he is the model, of the American horticulturist,—a polished gentleman, with the highest classical attainments, master of all leading authors, and yet without arrogating pride; six o'clock each morning finds him with his gloves and implements, and workmen about him, ready to resume the, to him, pleasurable labors of the day. Something in "American Horticulture" should certainly be paid to such a man as this.

And then look at the progress of horticulture among the mere agricultural classes, to whose meritorious labors are we to assign this honorable province? Much as the "peddlers" of the various large firms have been abused,—and in many instances they no doubt get no more anathemas than they deserve,—there can be no doubt that it is to them, principally, that horticulture has been brought to the doors of the agricultural population; and by

them they have been made familiar with the subject, if sometimes to their cost, still to their ultimate profit in having stimulated the desire for better things, if in no other way.

Ellwanger & Barry are the only nurserymen named in the article under review, and to them probably is due the credit of being the first to originate this great move in the march of progress. But at the present time it would be invidious to name any one as more useful than another. In every State, East and West, are scores of firms engaged in the good work, and in the most extensive way. Acres by the hundred are not now the exclusive boast of even a few names; and we may yet see an American nursery equal to that of Fallas of New Castle, England, who had at one time one thousand acres under nursery cultivation.

But perhaps no men, or class of men, have done so much for Horticulture as the Editors of our Agricultural periodicals. Skinner, Tucker, Brown, Harris, Mapes, Fries, and others, are names gratefully to be remembered. And the influence of well planned Cemeteries, such as Mt. Auburn, at Boston, and Laurel Hill, at Philadelphia, as well as the labors of such eminent Landscape Gardeners as Copeland, Saunders, Daniels and Olmstead, all over the country in their peculiar line, should not be overlooked.

All this is but just to the line of argument adopted by the writer in the *Atlantic*, who would represent "American Horticulture" by the doings of a single firm; but such an article should rather show what American horticulture is, and compare it with what it was, than merely point out a part of the machinery by which progress has been accomplished. Of this there is nothing, and one cannot help feeling after an attentive perusal of the article, that so far as its ostensible object is concerned it is a very unsuccessful piece, and unworthy of the magazine in which it appears.

SUBSOILING.

Free discussion of debatable horticultural questions has produced good results; but more might be obtained if disputants would accord any value to the experience of others. As it is, we take sides too soon, and appreciate what others say only in proportion as it may accord with our own prejudged notions of the case. Sometimes this feeling produces a self-complacency rather amusing. A recent writer in the *Country Gentleman*, advocating a position in reference to orchard culture, asserts, that if those who differ from him would form their

opinions from results instead of mere theory, there would be scarcely an instance of one differing from his view of the case. This style of argument is a loss to any cause that adopts it. Instead of assuming that those who differ from us are mere clowns, and that we ourselves are the centres of all that is practical and worth knowing, it is much safer to concede that our opponents may have had at least some experience; and that when two parties, both view the same facts, and both draw different inferences therefrom, either they do not understand each other's argument, and may both really mean the same thing; or, one or both may have seized on a collateral circumstance, and invested it with all the importance of a leading cause or primary principle.

Something like this occurred at the last Fall's meeting of the Fruit-Grower's Society of Eastern Pennsylvania, in Philadelphia, on the question of subsoiling ground. Mr. Edwin Satterthwait, of Jenkintown, opposed subsoiling, not only as an useless, but as an injurious expenditure of time and money. Mr. S. was nearly alone in his views.

It may be asked, as we did at the start of this chapter, why Mr. S. did thus utterly ignore the experience of the majority of cultivators? But our purpose is more from the opposite point, and to ask why did not cultivators stop and enquire how Mr. S. so radically differed from them all? That few if any did so, we believe. Most of them we are sure passed over the matter in much the same way that our friend in the *Country Gentleman* does the orchard culture question, by inwardly exclaiming, "when Mr. Satterthwait has had as much experience as we have had, he will think differently about subsoiling." But Mr. S. is known to be a thoroughly practical man, one who has had to work his course by his own observations, and one who practices what he believes, and which belief has proved extremely profitable to him. There must be some reason in his views, and it is well worth while, when he says he has found subsoiling to be an evil, to enquire how, or in what way it can be so.

We ourselves have found injury from subsoiling. Some subsoils are very poor, and utterly unfit, without a great expenditure of labor and enriching materials, for the purposes of cultivation. To bring these up, and mix them with surface soil naturally good, proportionately deteriorates it. Sometimes in that kind of subsoiling called trenching, where the soil is quite inverted, the subsoil being brought to the top, and the old surface soil turned below, we have seen very great and long continued injury result. All these are well known facts, and yet it

is no less demonstrable that there are many cases in which subsoiling in either of the two forms we have instanced is a very decided advantage.

But there is another form of subsoiling which in many soils is a decided disadvantage; and we have no doubt it was in some such a soil Mr. Satterthwait had the bitter experience, which, so far as that goes, makes him an honest opponent of subsoiling. This is subsoiling in retentive soils without underdraining at the same time.

The beginning of improvement in soils is to render it early. If they can be rendered so dry as to become a few weeks earlier, it is a great gain to the cultivator. Light or sandy soils soon dry. Within a few days after heavy rain or "falling weather," the plough and spade can be set to work,—the seed is sown; and while the owner of the wet or heavy soil waits for a few days of fine weather to dry his ground, only to have the mortification of seeing it "rain again," the man with the early soil has his crop coming on to his hearts content.

Merely subsoiling stiff ground only makes matters worse. As it is, with perhaps six or eight inches of surface soil, and "hard pan" beneath, through which water does not easily penetrate, most of the spring rains, after the shallow loose soil has been saturated, flows over the surface to the neighboring runs and creeks. The water in this shallow soil soon evaporates, and the husbandman is enabled to proceed with his spring work with no very serious delay. But make this surface soil deeper by subsoiling,—instead of 8 inches make 18 or 24,—and treble the amount of moisture is held in the soil, all to be evaporated before any cultivation can go on. Instances of this are well known, where the ground for tree planting could not be used until the trees were actually in leaf, in some unfavorable seasons.

Strangely enough, it is this very thing which makes deep subsoiling an evil in spring, that furnishes the chief advantages claimed for subsoiling. So much water retained in a loose porous and deep subsoil, is slowly given off, and while the shallow surface soil soon gives out its moisture to a few warm summer suns, the deep soil, with its abundant moisture, enables the plant to go on growing through the entire heat or drought of the whole season.

We may see from these instances how it is possible for parties to honestly advocate, and to as honestly oppose, the same practice, and each appeal to his personal experience to support him; and it is the part of a true philosophy to ignore the experience of neither, but to find out how their con-

flicting views may be harmonized, as if there is any truth in science, they undoubtedly can and ought to be.

In this matter of subsoiling, the explanation is easy enough. In heavy sub-soils, deep cultivation, to be of value in favoring earliness, must be accompanied by under-draining. Then, to the possession of a deep moist substratum for summer uses, we have the additional advantage of a soil rapidly drained of its superfluous spring waters,—one that is easily permeated by the warm spring rains that raise its temperature to the growing point, and that can be worked and got ready for spring crops almost as soon as the frost is out of the ground in spring.

For our part, we would make under-draining the first step in the improvement of most soils. A soil thoroughly under-drained will in time subsoil itself. In the passage of the water to the drains, it will, by going into spaces made by decaying roots, or worm holes, be continuously forming new channels, and thus disintegrating the solid substratum that, in time, will be quite as effectual as actual subsoiling.

It is often a matter of surprise to us that, notwithstanding the well known advantages of under-draining, it is comparatively little attended to. If any of our horticultural friends, after stocking their grounds with all they think necessary and proper, and find say \$1000 left on hand for manure,—we would advise them rather to spend but half of this for the purpose, and sink the balance first beneath the soil in the shape of under-drains.

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.

HORSE-NETTLE—B., Concord, Delaware Co., Pa.—For a year past, I have had charge of a farm, which, for several years previous, had had the grossest mismanagement; in consequence much of my time has been spent in attempting to extirpate the briars, carrots, docks and elders, which have been suffered to over-run it. It is not, however, such trifling evils as these which leads me to address you. One field is infested with a plant which I find so formidable that, in comparison, all the nuisances named appear insignificant. My attempts to eradicate it have been totally ineffectual, indeed, I am by no means sure that they have not tended to its increase. The plant I allude to is the Horse-nettle (*Solanum Caroliniense*), which is well de-

scribed in "Darlington's Agricultural Botany." It is found on many farms in this vicinity, where it appears to be steadily increasing, chiefly owing to the little notice taken of it by farmers. While they have been for years warned of the dangerous approach of the Canada Thistle, a worse nuisance has been naturalized among them. During the last season, in the public road in the neighboring township of Thornbury, and, I am sorry to say, within a few yards of the residence of a gardener, I found scores of plants with the ripe berries upon them.

The Botanical garden of the late Humphrey Marshall, Chester county, into which it was first introduced from the South, seems to be the source from which our stock has been received; and though it has been rooted out of the garden, I have been informed that, in spite of the efforts of his successors for its destruction, it still occupies a portion of the farm.

In my difficulty, I write to you to enquire if you, or any of your correspondents, are able to point out any feasible plan for its destruction; and if you cannot, at least to request you to alarm those who may be in danger of its approach. Its extension by roots is comparatively slow, but when allowed to ripen its seeds, it is rapidly disseminated, and no friend to the farmer should permit a berry to come to perfection.

[Total success has been achieved in eradicating as bad weeds as this, by digging them up soon after the leaves burst, or while the young growth is watery and sappy. The roots seem thoroughly exhausted in the effort, and the immature leaves have not yet had time to elaborate sap to recuperate their weakened energy. We have known Silver Poplars, Ailanthus, and Paper Mulberries, that had been a nuisance for years, destroyed totally in one season in this way.]

CURRENT GRAPES—I. H., Adrian, Mich.—Will the editor of the *Gardener's Monthly* oblige me by giving me the name of the grape which, in the language of the trade, goes by the name of "Currant?"

[Black Corinth.]

2. Can I get it in this country, and is it worth a place in the grapery?

[Not worth Grape-house culture.]

3. I am told to make raisins of currants, nothing else is required than exposing them to the sun; is that so?

[That is all. Dry rooms may, in this climate be better.]

4. I never find any seed in currants, nor in the Sultana or seedless" raisin. Are there really

"seedless" grapes? Is there any other plant which, in its own home, won't seed? Is not propagation by seed the law of nature?

[It is not unusual for fruits, improperly fertilized, to produce no seeds. Strawberries will produce "fruit" without fertilization with staminate, so will the Osage Orange, Cucumber, and other plants, particularly such as belong to what botanists call Monococious or Dioecious families. Such "fruits" have no seed, or, if they have seed, it is without embryos and imperfect. There is an apple in Virginia that has no seed; and the "Rutter Pear" seldom has. Propagation by seed is not the universal "law of nature." Many wild plants propagate themselves otherwise than by seeds, and even those which produce seeds, "root up like blackberries," all around, occasionally. Indeed the theory now is, that the main object of nature in "seeds" is not so much a purpose of propagation, which it could accomplish easier in other ways, as it is to ensure a perpetual variation from the original type, so as to enable a plant the more readily to adapt itself to the continuous changes of the globe.]

SWINDLERS—*J. P. S.*—We hold that the proper place to expose frauds and swindles is in a court of justice. If the facts are as you say, you have an easy remedy. Our journal was never designed to compete with "Police Gazettes," and such like, and we respectfully decline the honor you would confer on us in this line. Apply to the criminal court, good friend, and let us follow our own selected pursuits, "Horticulture, Botany, and the kindred sciences."

CURLED-LEAVED HONEYSUCKLE—*M. DeF., N. York City.*—The writer has seen in the Botanical garden in Zurich, Switzerland, a Honeysuckle in the open air, remarkable for its curled leaves, something like the leaves of the Curled Willow. Can it be had in this country, and where?

PREMIUMS TO BOYS AND GIRLS—*Mrs. Eliza T., Cleveland, O.*—May I be allowed to suggest that particular prizes and premiums may be awarded for best plants raised by boys and girls. No better stimulus can be given to gardening than by encouraging our children, who are naturally fond of it. May I be excused for intruding upon you this notion."

THE LARGE MAGNOLIA CONSPICUA.—*Mr. Walter Elder* writes, that he made the statement that

the large *Magnolia conspicua* was grafted on the Tulip tree, on the authority of Dr. Henry H. Smith, whom he knows to be a very reliable gentleman, but that the best authority is liable to be mistaken.

As it is very possible that the *Magnolia conspicua* will take on the Tulip tree, it is singular how the idea should have originated in the mind of Mr. E.'s informant, unless it were a fact; and it is certainly worthy of a closer investigation.

SIZE OF AN ONE YEAR OLD DELAWARE GRAPE—*J. T., Moundsville, Wis.*—As a subscriber to the *Gardener's Monthly*, may I trouble you to tell me, in the next number, your opinion of the grape-vine of which I enclose the wood, cut above the third bud. It is a Delaware, sent to me by Dr. Grant, as his "best selection, single eye." I want to know if you consider it of "such a degree of excellence as cannot be secured at any other establishment," or such a plant as he, with his great facilities for propagation, should send out as his best?

I wish to tell you all about this matter,—you can read it while you are sipping your tea, as I know your time is precious. Last fall I saw a German, an enthusiastic grape-grower, who told me he had had vines from two or three nurserymen, but none like Dr. Grant's,—and he spread out his arms to show what roots they had. I sent for a catalogue. I got some neighbors to join me in a small club. I wrote, saying I should want 2 or 3 No. 1 layers of Diana and Concord; a No. 2 layer of Delaware; about 8 or 9 No. 1, *s. e.* Delawares; and 2 or 3 of Anna and Hartford Prolific; and that I intended to see a few friends in a neighboring town, and would probably require 9 or 10 dozen more, and I desired to know what would be his charge for these, that I might know what to remit. Happening to be at Portage just before I received his answer, and considering it likely that I should not be there again for a month or six weeks, I got a draft on N. Y. for \$20, requesting him to send the vines as previously mentioned, and to fill up the amount with No. 1 and No. 2 *s. e.* Delawares. Three days after I got his letter, saying he would supply what vines I required at wholesale rates, and, if the order amounted to \$25, 10 per cent. discount. I afterwards received an acknowledgment of the receipt of the money, and in this he said he would send vines of a better quality than ordered.

We have mail service here but once a week, and it was not convenient for me to go to Portage; and a letter mailed here is detained five days at another small office before it proceeds east, so three weeks,

at least would elapse between the writing of his letter and the receiving my answer, and I concluded it was probable the vines would be sent off before a letter could reach him, and therefore did not write to request him to send as I had ordered.

Instead of a No. 2 layer of Delaware, \$1 50, a No. 1 was sent, charged \$3. Instead of No. 1 s. e. Anna, 50c., a No. 1 two years transplanted, \$1 50. And instead of 9 No. 1 s. e. Delawares, at 50c., there are 9 which he has the marvellous effrontery to send me as his "best selection." As I have told him, they are no better than I expected his No. 4 vines to be, and they certainly much more resemble the plants represented by plates No. 122 and 123 of the last number of *Landmarks*, than they do No. 104; for, with a simple hotbed, and with a cold frame to harden the plants off in, I would think that you had nothing much to boast of if you could not raise better plants than these, especially if you had ground to finally plant them in, so elaborately prepared and enriched as his is described to be.

I have charged the men \$1 each for these vines, and, as I told Dr. Grant, what, with my loss on these, the Express charges, etc., I shall pay pretty well for my whistle in this instance.

Do Hybrid Perpetuals succeed here as pillar roses, and which are best half-dozen for that purpose? The Prairie roses, I believe, are most used here; but I don't want a rose without fragrance.

[We are, as our readers know, careful to avoid any interference between nurserymen and their customers,—our view being, that the customers of nurserymen should use the same prudence in dealing with them, as they use in their dealings with any other business. Another reason is, that articles of this kind involve a right of reply, and we do not like that any one should feel they have a positive right to an inch of our space.

We have decided to pass this one, because it calls up a question as to how large a one-year old Native grape-vine should be;—and also the propriety of nurserymen substituting one article of another quality for the thing ordered.

Of the grape-vine sent we have to say, that it is fifteen inches long, has 9 eyes, and is one eighth of an inch thick, having already been topped before sending out; and weighs, now it is dry, $\frac{1}{4}$ of an ounce. We should call it a good average specimen of an one year old Delaware vine from the eye. We have seen infinitely worse one-year old ones.

Of the price we can say nothing. Each nurseryman has his own estimate of the value of his vines. The best way is to get size and measurement before ordering.

The question of substituting without orders, and charging more, one would think required little argument. Cases may occur when the nurseryman may understand, from some circumstances within his knowledge, that the act would be satisfactory; but he must run the risk of censure, and the consequent loss of credit, when his judgment leads him into error in this respect. It is a dangerous experiment.

Baron Prevost—Jules Margottin—General Jacqueminot—William Jesse—Prince Albert and Caroline de Sarsal, would suit you for Hybrid Perpetual pillar roses.]

GUANO ON POTATOES—*J. H. H., Rupert, Pa.*—This is usually applied when the sets are planted. The potatoes are dropped along on one side of the furrow, and the guano on the other, at the rate of about four cwt. to the acre. It would do little good sown on the surface, as the continual harrowing required for the Potato, keeps all roots from forming near the surface. Well rotted horse manure is one of the best fertilizers for the Potato: cow manure has a tendency to produce watery Potatoes.

FRUITS IN EASTERN SHORE OF MARYLAND—*Regular Reader, Rochester, N. Y.*—Will some of your correspondents who are posted on the subject, please give the *Gardener's Monthly* a letter, giving the adaptability of the Western Shore of Maryland, as a fruit country, particularly the cultivation of Winter apples, varieties, keeping qualities of fruit grown there, and any other items of interest relative to fruit-growing, timber, soil, &c.

I have reference to the country from Baltimore to Fredericktown.

When in Virginia, several years since, I heard much of the Albemarle Pippin apple, as being a very superior fruit for shipping. Can any one give any information relative to it?

SHADING GRAPE-VINES—BOOK ON GARDENING—*J. J., Cleveland, Ohio.*—Will you please inform me in the *Monthly* for June, if it is customary to shade Grape vines in greenhouses or vine-ries, in July or August, for a few hours at mid-day? Also, could you name a book that would give me some information on laying out flower-beds, and grounds, with a few plates in it?

[Partial shade is wholesome for vines for a few hours each day during the hot summer months.

Kemp's "How to lay out a Small Garden," would suit you, probably.]

POETICAL CORRESPONDENCE.—We have on hand three Rhythmical compositions, from different correspondents,—all creditable to the composers, but scarcely adapted to our magazine.

Books, Catalogues, &c.

THE AMERICAN JOURNAL OF SCIENCE AND ART, by Silliman & Dana, for May is an unusually interesting one to us.

Dr. J. W. Dawson, of Montreal, has contributed a paper on the Flora of the Devonian Period in North-Eastern America. A. C. Ramsey, Esq., of England, communicates a paper, showing many of the Lakes of the world to be of Glacial origin. Discussion of some questions concerning the Coal formations of North America, by Leo Lesquereux, are among those of chief interest to our readers. In *Miscellaneous Intelligence*, is a notice of Bohlig's views on the origin of Nitrate of Ammonia in the atmosphere.

In the Botanical Department there is a long Review, by Dr. Asa Gray, of DeCandolle's recent treatise on "Species, considered as to Variation, Geographical Distribution, and Succession," which will attract the attention of all Botanists. The question as to how far a distinction is to be considered as a variety of a species, or as a distinct species, is a very important one; as the first principles of science depend in a great measure on it. Dr. Gray, though he differs in many respects from DeCandolle, remarks, that it is a paper which, from the scientific position, ability, and impartiality of its author, is likely, at this time, to produce a marked impression.

There is also a notice by Dr. Gray, of a New Flora of Canada, written in the French language, by the Abbé Provancher: and of a Memoir of the Grapes of North America, by Elias Durand, of the Philadelphia Academy of Natural Sciences. There is also a notice of the Vegetable Productions of the Feejee Islands, published by order of the British Government.

In looking over the list of deaths, of distinguished Botanists, for the past year, we notice the names of several that hitherto escaped our notice. As every thing relating to the history of beautiful plants and flowers has an interest for our readers, we extract the following notes by Dr. Gray:

Benjamin D. Greene, Esq., of Boston, died on the 14th of October last, at the age of 69 years.

Graduating at Harvard University in the year 1812, he pursued legal studies, and was duly ad-

mitted to the Bar in Boston. He then took up the study of medicine, and completed his medical course in the schools of Scotland and Paris, taking his medical degree at Edinburgh in the year 1821. Mr. Greene did not engage in the practice of either profession, but devoted his time to literary culture and to scientific pursuits. His fondness for botany, which early developed, was stimulated by personal intercourse with various European botanists, especially the venerable Sir Wm. Hooker, then Professor in the University of Glasgow, between whom there existed a strong friendship. He never himself published any of his discoveries or observations; but his collections were extensive, his original observations numerous and accurate, and both were freely placed at the disposal of the working botanists. He gathered a choice botanical library, he encouraged explorations, and he subscribed to all the large purchasable North American collections. His botanical library and collections have been, by gift and bequest, consigned to the Boston Society of Natural History, of which he was one of the founders, and the first President. The genus *Greenea*, established, by Wight and Arnott, upon two rare Rubiaceae shrubs of India, will perpetuate his name in the annals of the science which he lovingly cultivated.

Dr. Asahel Clapp, of New Albany, Indiana, died on the 17th of December last. His only publication is one of merit and importance: "A Synopsis or Systematic Catalogue of the Medicinal Plants of the United States," which forms an 8vo volume of 222 pages. It was presented to the American Medical Association in May, 1852, and published during that year, at Philadelphia. A rare plant of the order *Compositae*, which inhabits the southern borders of Texas, was dedicated to Dr. Clapp in the Botany of the Mexican Boundary Survey.

Dr. Melnes C. Leavenworth, died in the vicinity of New Orleans, in December last, while acting as surgeon of the 12th Connecticut regiment. While in the army, (as surgeon, over twenty years ago) and at frontier posts in Arkansas, Louisiana, and Florida, he indulged his strong botanical tastes, and did useful service, by observing and collecting the plants within his reach, which he communicated to Dr. Torrey along with copious notes. The pages of the "Flora of North America, upon which his name so often occurs, testify to his zeal and success as a botanical explorer and pioneer. A pretty and strikingly marked Cruciferous genus, one species of which, discovered by him, dedicated to him by Dr. Torrey, commemorates his botanical services.

CATALOGUES.

We have received, during the past six weeks, a very large supply of Catalogues. Since the war, in order to furnish our subscribers all over the Union with back numbers on the return of peace, our magazine has been electrotyped, and this process requires us to go to press very early in the month; and, but for this, we should have acknowledged the receipt of these catalogues separately last month, and it is now too late to be of any service to their publishers. We are very glad to receive them, as they afford us a pretty fair idea of the state of horticulture in the sections from whence they severally come; and we wish here to return our thanks to all who have favored us with them, that have not otherwise been acknowledged.

New or Rare Plants.

STENOASTRA CONCINNA.—A charming little stove plant, producing an abundance of white and purple flowers. It possesses the valuable property of continuing in flower throughout the year. Its habit is particularly dwarf and neat, peculiarly adapting it for cultivation in plant cases or under glass shades in rooms. It is really a gem.

MONOCHÆTUM TENALLUM. — Melastomacea. Branches and petioles reddish, leaves small, oblong oval, pointed, myrtle-like, liberal bloomer, flowers rich dark purple. From Guatemala.—*Bot. Mag.*

WAITZIA TENELLA.—From the Swan river, Australia. Leaves and stem woolly and whitish, flowers brilliant yellow. Introduced by Messrs. Thwaites, of Ipswich.—*Id.*

SPHÆROGYNE LATIFOLIA.—A plant of truly noble aspect. In habit it somewhat resembles the far famed *Cyanophyllum magnificum*, but whilst being perfectly equal to that species in the magnificence of its foliage, it surpasses it in habit and the general beauty of its appearance. The stem and leaf stalks are red, and thickly covered with reversed hairs. Its magnificent ovate leaves are of a rich velvety olive green color on the upper surface, and of a beautiful red underneath.

PRŪMNOPYTIS ELEGANS, *Philippi in Linnaea.*—Under this name, which literally signifies Plumfir, Prof. Philippi, of St. Jago, in Chili has published an account of a very fine conifer, that has been raised by Mr. Veitch. He describes it as a rather

large tree with linear, distichious leaves, inhabiting the inner Andes of the province of Colehagua. It bears, he says, yellowish green drupes about $\frac{3}{4}$ of an inch long; and its wood, which is handsomely veined, is in request among cabinet makers. The native name of the tree is Lleuque. The drupes or "Plums" are eaten when ripe as well as the stone they contain.

Whether this genus is really distinct from *Podocarpus*, we do not pretend to say. There is no doubt about its being nearly allied to the *Podocarpus andina* of Pöppig, of which we believe we have a specimen from the Paris Herbarium, marked "No. 936, Juniperus, Peru, Dombey." Indeed we should have thought it the same had not Philippi described the fruit as ovate, while Pöppig expressly states that of *P. andina* to be globose.

Messrs. Veitch's seeds were collected in 1860, on the Andes of Chili, at an elevation of 5000 to 6000 feet, by Mr. R. Pearce, who describes the tree as a pyramidal evergreen, 40 to 50 feet high, with a dark glossy green foliage, and much the appearance of *Abies Douglasii*.—*Gard. Chronicle.*

DOUBLE SCARLET ZINNIA.—Messrs. Vilmorin-Andrieux & Co., of Paris, announce in their "Supplement aux Catalogues, among other novelties for this year, a *Double Scarlet Zinnia elegans*, which, during two years they have been engaged in "purifying," though it may still have, they say, some tendency to vary so far as to produce a few plants with orange or copper-colored flower-heads. The *Zinnia aurea*, named by us long since, (1861, p. 114), and which also bears the garden name of *Sanvitalia Mexicana*, they call *Z. Ghiesbreghtii*; the notice of this latter plant is accompanied by a capital woodcut.—*Id.*

HIGGINNSIA REFULGENS.—Beautiful Rubiacæa, native of South America, has flowered in Kew a year ago. Succulent, stalk and leaves covered with upright standing hair. Sessile large leaves, from $2\frac{1}{2}$ to 4 inches long, upper side dark green, with a distinct violet border, under side of a violet purple shade. The flower-stalks and peduncles of a bright purple color; flowers much less striking than the leaves.—*Bot. Magazine.*

LONICERA AUREA RETICULATA—*New Honey-suckle.*—Introduced by Mr. Fortune from Japan. Leaves yellow-spotted on green ground, some perfectly simple and heart-shaped, others sinuous like oak leaves. So far under glass, but probably hardy. [This is probably the same as the *L. aurea reticulata*, now being sent out by Parsons & Co.—ED.]

Domestic Intelligence.

THE LATE DR. WILLIAM DARLINGTON.



We briefly chronicled the death of this distinguished naturalist in our last issue, and promised a fuller account of his life and eminent services. Well as we thought ourselves acquainted with him, now that he is gone we find how little comparatively we knew. The many new facts in his distinguished career that we have but recently learned, astonish us by their varied interest; and, with the very limited space that we know our memoir must occupy, it is not easy to enter on the task with any hope of giving credit to the subject. We sincerely trust that some one of his many compeers will do full justice to his memory in as full and worthy a manner as he himself has done in his day for his co-laborers, Baldwin and Townsend, and for his predecessors in the same cause, Bartram and Marshall.

William Darlington was born at Birmingham, Chester county, on the 28th of April, 1782. His parents were farmers, and William, after receiving a common school education, worked on the farm till he was eighteen years of age. He then commenced the study of medicine under Dr. Vaughan, of Wilmington Del., and, in 1804, received a diploma, with the degree of M. D., from the University of Pennsylvania. The two following years he endeavored to establish himself in medical practice in in his native village; but gaining little business, he devoted most of his time to languages and the natural sciences, particularly Botany, in which he be-

came subsequently chiefly distinguished. In 1806 he entered as surgeon in a merchant vessel, and made a voyage to the East Indies, returning the following year. He married at this time a granddaughter of General Lacey, of New Jersey, and of revolutionary fame, and established himself very successfully in his medical profession in West Chester, then consisting of little more than the traditional "store, tavern (Saracen's Head, we believe), and the blacksmith shop." Soon after this he entered warmly into the political agitations of the time, and defending warmly the policy of President Madison in the prosecution of the war of 1812, he raised a company of men for service, after the burning of Washington by the British; was chosen Major of the regiment; and paid the penalty of his patriotism by being expelled from the Society of Friends, in which he was raised. He subsequently joined the Episcopal Church, of West Chester, in which he continued till the day of his death. As a testimonial of his worth, it is worthy to remark, that this body of his fellow citizens of West Chester, had their church draped in mourning for him for thirty days, an unusual mark of high respect to a fellow member.

It was about this time (1814) that that versatility of genius, for which he is now so famous, began to develop itself. Though engaged in war, and in politics, (for he was elected by the Democratic party to represent his district in the United States House of Representatives,) he commenced to gather together materials for the "Flora of Chester County;" but so great was his love of precision and complete knowledge, that he did not publish his book till 1826, and then but with the modest title of "*Florula Cestricea*." He continued all this time his political interest in public affairs, representing his political party in the Halls of the nation, prominent as an active and hard working committee-man, in the 14th, 16th and 17th Congresses successively.

During the Presidency of General Jackson he was nominated for United States Senator for Pennsylvania, but was defeated by only a very few votes.

He now turned his attention more to the improvement of his own place of residence at West Chester; and it is not too much to say, that it is to him mainly that West Chester has arisen to its present distinguished eminence. He established an Athenæum, a Cabinet of Science, Halls of Temperance, Horticultural Societies, and instigated others to found schools, academies, banks and commercial enterprizes of many descriptions, to all of which he lent a warm personal interest. His free and frequent lectures on all kinds of topics that

might tend to benefit mankind, had always a powerful influence. His power in this respect was astonishing. No better evidence of this is afforded than by the fact that his "*Flora Cestrica*," a large work following his "*Florula*," in 1837,—a work of purely local character, describing merely the plants found growing wild in Chester county,—went through three editions, the last one appearing but nine years ago. This work, though but a local one, as we have said, gained for its author a world-wide reputation. Its great merit was in its excellent method. With that aptness to give instruction with ease and facility to the learner, which was a marked characteristic of Dr. Darlington, he fairly painted his plants to the student in words. There was no difficulty in identifying any plant once described by the Doctor's pen.

He was at once elected to fellowship in the principal scientific societies of Europe; enjoyed the confidence and correspondence of the most distinguished men; and his own countrymen, for once disproving the axiom, that "Republics are ungrateful,"—a maxim, by the way, that the Doctor himself never would assent to,—realized his worth, and Yale College conferred on him the honorary degree of LL.D. DeCandolle named in his honor a beautiful Texan plant, *Darlingtonia glandulosa*, remarking, as he did so, that it was fitting such a pretty American plant should be named in honor of such a distinguished American botanist. Unfortunately, the specimens were imperfect, and a better acquaintance with the plant established the fact that it was not really distinct from an old genus, *Desmanthus*, a plant of the Acacia family, by which name it is now known. Another new native plant of great beauty was however discovered and dedicated to him by Dr. Torrey, the *Darlingtonia Californica*, a pitcher plant, which it was always one of the Doctor's most ardent wishes to see in a living state. It was but a few months ago that perfect seed was for the first time received in the Atlantic States, and his friends, in whose hands the seeds were placed, did their best to afford him this gratification; and though he did not live to see it himself, it was some pleasure to him to know that one little seed had germinated satisfactorily to its raiser.

Dr. Darlington's constant effort was to render science practical and pleasing,—in every sense of the word, popular; and one of his happiest efforts in this line was made in his "*Agricultural Botany*." The first edition of this work appeared only in 1847, but it has already seen two editions.

In his personal character, Dr. Darlington was a marvel of liberality and generosity. Nothing dis-

tressed him more than to hear any thing unfavorable of any one. He was never disposed to listen to any thing of the kind, while he was ever ready to aid in every attempt to expose the merits of his friends and acquaintances. Tributes of esteem and respect to the memory of his friends, were indeed to him "labors of love." His "*Relique Baldwiniana*," published in 1843, to the memory of his friend Dr. Baldwin, interests even the most casual reader, who, with but a slight love for Botanical science, might desire to wile an hour pleasantly away. His "*Memoirs of Marshall and Bartram*," is a large work, replete with national interest, as well as to the purely scientific man.

Amongst several portraits of our deceased friend we have by us, we have selected for an engraving to accompany this brief sketch, one that was taken by the Bank of Chester County, of which he was for many years President, in 1851,—at the age of 70 years,—and we are pleased to add, that our artist, Mr. Stockton, has produced a perfect fac-simile of the original.

The funeral of this distinguished citizen was largely attended on Sunday afternoon. The face of the venerable gentleman was looked upon for the last time, as he lay in his coffin dressed in his every-day costume, and profusely covered with flowers, by a long line of relatives and friends passing into the parlor and out by another door of egress. A splendid wreath of white flowers was received by the family from a devoted lady friend in Philadelphia, with the direction that it be placed upon his breast, and then be hung upon his grave, which directions in every particular were strictly carried out. It was meet and right that the fragrance and beauty of these blooming and budding blossoms should consecrate the death and burial of Dr. Wm. Darlington.

We cannot conclude without remarking, that when, in the long coming future, the whole history of American Botany, Horticulture, Agriculture and the kindred sciences, shall be written, the name of Darlington will be among the first remembered and forgotten last; and his name will be venerated by Americans after the last of us who knew him shall have long passed away.

THE AGRICULTURAL BUREAU is preparing to carry into effect the provision made by Congress for experiments in cottonizing flax and hemp. The sum appropriated is only \$20,000, but samples of cottonized flax and hemp, and of cloth made from such material, have been produced here, and have given much encouragement to the prosecution of further experiments.

BLOOMSDALE—*Landreth's Seed Farm, Bristol, Pa.*—As we approach the grounds from the front, a prominent object meets the eye: a noble White Pine of gigantic proportions, somewhat the worse for many a winter's storm, but which still in all its majestic grandeur, as it has stood whilst generations have come and passed away. On entering the premises, we find ourselves in the midst of a lawn of ten acres, in the English style. To enumerate the various trees, in groups or single specimens, which most invite our notice, would interfere with the main object of our visit. We have come for a special purpose, and we can only allude to a very few of the species to which our attention may be supposed to be directed. A White Spruce, in rich luxuriance, measuring, as the branches trail upon the sward, upwards of sixty feet in circumference; the Himalayan White Pine, with its deep fringe-like foliage, twenty-five feet in height; the Cephalian Fir, with leaves as pungent as an Auracaria, twenty feet high, and many specimens of the same kind of nearly equal magnitude; Yews, of more than half a century's growth; a Purple Beech, of thirty feet in height, its branches as many in circumference, contrasting with the green around; numerous specimens of Balm of Gilead, Silver Firs, and Norway Spruces, unsurpassed in beauty of form, the last presenting every variety of habit in which it delights to sport: these are some of the gems of the lawn. But we must hurry on to the practical business in view.

The harvest, which, in seed-culture, lasts for many consecutive weeks, has just commenced. The first important crop that ripens is the turnip,—which is now being cut. The work is performed by the use of grass-hooks or toothless sickles; stem after stem is cut, until the hand is full, when they are deposited in canvas sheets; as these are filled, boys stand ready to spread others, men follow to tie up those which have been filled; others succeed, driving teams, and loading wagons, with ample shelvings, with sheet-full piled on sheet-full, until the sturdy oxen are required to test their strength in drawing them to the drying-houses; arrived there, each sheet-full is separately removed by rope and tackle, and the contents deposited on the skeleton scaffolding within the building, there to remain until the seed is sufficiently cured and dry enough to thresh. These drying-houses are buildings of uniform character, two stories in height and fifty feet square, constructed so as to expose their contents to the sun and air, and each provided with a carefully laid threshing-floor, extending through the building, with pent-house for movable engine.

When the houses are full and the halm in a fit state for threshing, the engine is started and the work begun. One man, relieved by others from time to time, (for the labor requires activity, and consequently is exhausting,) feeds the thresher, which, with its armed teeth, moves with such velocity as to appear like a soiled cylinder. Here there is no stopping for horses to take breath and rest weary limbs,—puff, puff, onward the work,—steam is as great a triumph in threshing as in printing or spinning. Men and boys are stationed at the rear of the thresher to remove the straw, and roughly separate the seed from the shattered halm,—others again being engaged in thrusting the dried crop from the scaffolds, and placing it in suitable position for the feeders. When one drying-house has been emptied, the engine is removed to another; the same process is pursued until the circuit of the buildings has been made; and thus the ceaseless round (ceaseless at least for a season) is continued. As soon as the crop in the first house has been threshed, the work of winnowing is commenced, and skilled hands thus engaged to follow on in the track of the engine. As each crop is cleaned and put into merchantable order, it is placed in bags of two bushels each, and carried to the storehouses and granaries, there to wait a requisition from the city warehouse.

* * * * *

The seeds of Bloomsdale have attained a world wide reputation, and to quote an expression used in reference to them, "are almost as well-known on the Ganges as on the Mississippi or Ohio." They are regularly exported to the British possessions in India, to the shores of the Pacific, throughout the West Indies, and occasionally to Australia. The drier atmosphere of this country ripens them better than the humid climate of England, adapting them to exportation; and it is no slight triumph to see them preferred by Englishmen on English soil. At home, thousands of hamlets, south and west of Philadelphia, until interrupted by the war, were supplied with Landreth's seeds.—*Atlantic Monthly.*

CATAWBA GRAPE.—Mr. T. T. Lyon remarking of this in *Michigan Farmer*, says:

It is a remarkable circumstance that the Catawba, where it is successful, cannot yet be said to have a superior, all things considered; and, did it but ripen two weeks earlier than it does, it would at once become the standard variety for the entire south-half of our Peninsula. On the Islands of Lake Erie, where vine culture is the leading business,

this is almost the only variety grown with reference to profit, and we are assured that, not only on the mainland of Ohio, but also along the lake shore, in Monroe county, Michigan, the Catawba ripens perfectly, and with certainty. Of this we were somewhat incredulous, as we doubted whether the west shore of the lake would be sufficiently sheltered from autumnal frosts, but we are assured by Mr. Bartlet, of Monroe, as well as by other individuals who have examined the ripe fruit upon the vines growing in the open grounds, that such is unquestionably the case. For the benefit of those in our State, who are disposed to plant this variety, we will express the opinion that it cannot be relied on, in our climate, in a locality where it cannot be safely left upon the vine till nearly or quite the first of November. We apprehend that the Islands and shore of Lake Erie, so far as the mere ripening of fruit is concerned, derive no advantage, but rather suffer delay from their lacustrine exposure during the spring; while the delay is more than compensated during the autumn, by the slowness with which the surrounding water gives off the heat accumulated during the summer.

Although little is said of the adaptation of the shores of Lake Michigan to the production of this fruit, it is the opinion of the writer that, whenever, in that region, suitable soils occur, the grape will be found entirely at home; and that, within a moderate distance of the east shore of the lake, possibly as far north as Grand Traverse, the Catawba will be found a safe variety to plant. Throughout the southern portion of the State, this variety, in favorable seasons, with judicious management, will become a tolerable table fruit; but, it is believed, that no inland locality, except perhaps in rare cases, will be found capable of bringing it to that degree of maturity necessary to fit it for the manufacture of wine.

DWARF PEARS.—Referring to two men, the *American Agriculturist*, says:—What is the truth upon this subject? Both these men are right. Dwarf pears are a success with the first man, because he takes care of them, and a nuisance to the latter, because he pays no attention to them. I have been cultivating pears since 1850, and have now about 150 trees, standards and dwarfs. The first trees planted were suckers, contrary to the advice of the books, and to the practice of the best pomologists. They were respectively budded with the Flemish Beauty, Louise Bonne de Jersey, White Doyenné, and Winter Nelis, and have never thrown up a sucker. The last two bore for the first

time last year, though they have had good cultivation, plenty of manure, and have been shortened in every year. The others began to bear three or four years earlier.

DEPARTMENT OF AGRICULTURE AND THE CROPS.—Commissioner Newton has issued Circulars to gain information of crops. These are to be continued monthly. He writes in explanation to those who receive them:

That the plan of reporting the average of land sown or planted, and the appearance of the crops by figures, is the most simple and likely to be correct: 10 representing an average fair appearance of the crops, while it will be quite easy by figures above and below 10 to represent how much above and below an average they range. Also, that this circular will be followed by others, monthly, till the crops are all in, each one being altered to suit the month for which it is issued.

For instance, next month will include Grass, Flax, and the Wool-clip. After that, enquiries will be made as to amounts harvested.

Although this may be imperfect, yet it is the first step toward collecting the Agricultural statistics of this country, and I hope the results may be such as to attract the attention of Members of Congress, and cause them to take some decided action for perfecting the system.

THE FASCINATION OF FRUIT CULTURE.—A correspondent of the *New York Tribune* in an account of the Horticultural Exhibition at Chicago, says: "I was amused to notice how much the exhibitors thought of their fruit: with many this is the first year their trees have borne, and this was particularly the case with those who lived in cities, and who only a few years ago turned their attention to fruit growing. Hour after hour they stood by their tables, their eyes running from plate to plate, and often re-arranged them so that each pear and bunch of grapes should show the best it could. Human affection is scarcely less devoted. I was reminded of a young wife, with her first baby. Some call this a species of insanity. Very well, I own to being a little insane on strawberries. But people do not understand it. They do not have before them the years of persevering industry, as the fruit-grower does, and they have no long hopes realized. They know not how he has watched his trees through all seasons, till they become 'familiar trees;' how he has thoughts of them when falling asleep, or on a journey, or how he has walked among them on Sundays with his wife. Of all the

descendants of Adam, none have so nearly succeeded in getting back into Paradise as the fruit grower."

MR. NICE'S MODE OF KEEPING FRUITS.—Some years ago, Liebig discovered the analogy between the slow decay of vegetable substances and fermentation, and settled many things in reference to temperature moisture and other circumstances under which these actions take place. Subsequent experiments confirmed the deductions of Liebig, and fixed the range of fermentation between 40° and 180° Fah. Appert, a French chemist, introduced the practice of heating vegetable substances to 180° or above, and at that temperature, excluding them from the air, and thus effectually preventing fermentation. This method has now become so common that it has nearly revolutionized this department of domestic economy.

Mr. Nice, of Greensburg, Ind., a few years since, conceived the idea of availing himself of the margin between the fermenting point (40°) and the freezing point below (32°). His first trouble was the presence of moisture in the atmosphere; this, however, he effectually remedied by the use of Chloride of Calcium, which, by absorbing the moisture, renders the air perfectly dry. Having obtained favorable results, he secured by patent his discovery. In the summer of 1860, Messrs. Fletcher, Williams & Vancamp erected in this city a large house for the purpose of testing the economical value of Mr. Nice's discoveries. As early as ice could be procured last winter, they put their house into operation. About one thousand bushels of apples, consisting of Bellflowers, R. I. Greenings, Rambos, Russets, etc., constituted the first experiment. These were put into the market last June, as perfect in every respect as when they were taken from the tree, and with a very trifling loss in quantity. Last summer, various experiments were made on small fruits, with very encouraging results. Raspberries and strawberries were kept eight weeks, after which they lost their flavor, though they showed no evident marks of decay.

Gooseberries, currants and cherries were kept in good order for a longer period, giving evidence that, with proper care, they may be kept the year round. Peaches, in ten weeks, showed evidence of decay; the skin sloughing without material discoloration. Of pears, about two hundred and fifty bushels were housed, and are now in a fine state of preservation. Among these are the Sugar pear, the Bartlett, Seckel, Flemish Beauty, and several other varieties of summer and fall pears. Present appearances indicate that they will be sound next

summer. Grapes that were in good condition when housed, have not the slightest degree changed either their appearance or flavor. A lot from the Cincinnati vineyards, that were much bruised in transportation, suffered loss for the first ten days after being deposited, but have undergone no sensible change since. The stock on hand is about one hundred and fifty bushels. I predict that the company will market grapes next June in good condition. Oranges, lemons, pine-apples, bananas and other tropical fruits, may be kept for months at any season of the year. Of the last crop of apples, two thousand five hundred bushels are on hand, in a most perfect state of preservation—the Fall Pearmain, Maiden's Blush and Rambo keeping as well as the Newtown Pippin, or Romanite. A small lot of sample apples, of the fruitage of 1860, are on hand, looking well, and retaining their flavor in a remarkable degree.

The results thus far obtained, warrant us in concluding that in all climates where ice can be obtained, the standard fruits may be furnished at all seasons of the year, at prices which will bring this luxury within the reach of every family; thus largely increasing fruit consumption, and proportionately stimulating fruit culture.—R. T. BROWN, Indianapolis, Ind., in *Ohio Farmer*.

ASSORTMENT FOR A FRUIT GARDEN OF TWO ACRES.—The following will be about the required number, cost and area, in tabular form.

1000 Strawberry plants, on	-	5 square rods, say	\$10
10 Cherry trees,	-	10 do do	3
12 do, dwarf,	-	3 do do	4
100 Raspberry bushes,	-	6 do do	5
100 Currant bushes,	-	3 do do	10
24 New Rochelle Blackberry,	-	2 do do	3
100 Dwarf Pears,	-	27 do do	25
50 Dwarf Apples,	-	14 do do	12
24 Peach,	-	16 do do	3
12 Standard Pears,	-	12 do do	5
40 Standard Apples,	-	160 do do	8
		253	\$53

To which may be added a dozen grapevines, on 5 rods. 263 rods are about an acre and two-thirds—two acres would be ample room. Omitting the 40 standard apples, an acre would more than contain all. In every locality favorable to the growth of fruit, there is no way in which an equal amount of profit, wholesome food, and desirable luxury may be obtained from the same area.—*Canadian Ag.*

EXPLORATIONS IN THE ROCKY MOUNTAINS.—Dr. C. C. Parry, whose explorations last year resulted in so many new plants, that have produced quite an excitement among the cultivators in Eng-

land, and whose discoveries we have occasionally called attention to in our journal, will make another trip the present season, under far more favorable circumstances than before. The Doctor having proved himself the right man in the right place, we trust he will be supported by our nurserymen and amateurs. We shall be very happy to receive and forward to him the names of those who would be willing to contribute towards the expenses for either seeds or dried specimens. This would be a great encouragement to him to persevere on his very expensive trip. We have already plants of the new *Abies Engelmannii*, *Pinus aristata*, and *P. flexilis*, growing, which he collected on his last trip, and are sure from this small experiment, that whoever may aid Dr. Parry will get the worth of their money.

LAW AGAINST WEEDS.—In Denmark the farmers are bound by law to destroy the corn-marigold; and in France a farmer may sue his neighbor who neglects to eradicate the thistles upon his land at the proper season. In Australia a similar regulation has been imposed by legislative authority, with, it is said, the most beneficial results. In Canada, we believe, enactments have been issued against allowing thistles to ripen on the road-sides and exposed situations, both from the legislature and township corporations; and it is passing strange that such important and beneficial regulations, on the proper observance of which both private and public wealth is so closely dependant, should in many districts become practically inoperative. It is high time that some firm stand should be taken, not only against thistles, but pigeon-weed, and the whole tribe of farm pests of this nature, forming as they do insuperable barriers to Agricultural progress, and consequently to the increase of wealth and national prosperity.—*Canadian Ag.*

ORCHARD HOUSES.—An amateur Horticulturist of Pennsylvania writes:

I fruited some 30 pots and boxes of Peaches, Nectarines, Apricots, Figs, etc., last year, and you can hardly imagine the pleasure and satisfaction it afforded to be able for weeks together to pluck the delicious fruit (not in Homoeopathic doses either); and the gratification and benefit derived from their use by an invalid wife, and several sick friends, both about home and in the hospitals. A good, efficient and movable heating apparatus, not requiring a great amount of fuel, or constant attention, would be a great acquisition to one like myself, as well as to many others, who attend personally to

their own houses, not for profit but as a pleasurable relaxation.

So many of our family and people are engaged in this momentous struggle for union and nationality, that increased load of cares devolve on those left at home. Notwithstanding, I think and hope our interest in Horticulture will not, or at least ought not, to flag; and, from present indications, the ardor among its votaries is increasing instead of diminishing.

Foreign Intelligence.

PRESERVING PEAS GREEN FOR WINTER USE.—This desirable result has certainly not yet arrived at the state of perfection we expect of it, and we have heard of many failures; but the following mode has been reported to us by a person well qualified to judge of such matters, as being very successful:—Carefully shell the Peas—then put them in tin canisters, not too large ones; put in a small piece of alum, about the size of a horsebean, to a pint of Peas. When the canister is full of Peas, fill up the interstices with water, and solder on the lid perfectly air-tight, and boil the canisters for about twenty minutes; then remove them to a cool place, and they will be found in January but little inferior to fresh, newly-gathered Peas. Bottling is not so good—at least we have not found it so; the air gets in, the liquid turns sour, and the Peas acquire a bad taste.

THE EXHIBITION IN NAMUR, BELGIUM, which took place last fall, must have been an extraordinary affair, judging from the sensation reverberating in the European horticultural press. Three thousand plates of fruits were exhibited, containing near 9000 specimens. Fruit was the paramount feature, though flowers and vegetables were fully represented, if not in the same proportion to fruit. Fruit, in fact, seems to have been the main object, since there were invited to this "International Congress" the horticulturists of Belgium, France, England and Germany. Among the notabilities present were, from Germany, Professor Koch, General Jacobi, Borchers and Trapp; from England, Rivers, Blandy, Murray, Lawson; from France, Leroy (of Angers), Willermoz, Lefèrè, Baltet; from Belgium, Royer, President of the "International Congress," and also President of the United Horticultural Societies of Belgium, Linden (of Nunels), Verschaffelt, and a host of others.

The delegates, representing fifty-eight societies of the four nations, resolved themselves into four Committees, one for Apples, the other for Pears, a third for Grapes, the fourth for stone fruit.

Of these fifty-eight societies, thirty-six sent collections of fruit, in the following ratio: 10 from France, 1 from England (the London Horticultural Society), 12 from Belgium and 13 from Germany.

The most striking collection was that of Mr. Nélis, of Belgium, that veteran in Pomoculture. There was not a known kind amongst his fruit, and yet he exhibited no less than 150 varieties of Pears.

The classification of the fruit exhibited and not exhibited, and the correct nomenclature, will be the task allotted to each committee. A final decision will not be made until after due exchanges of reports has been made between the various committees, so that each delegate, and each group of delegates have a chance of recording his and their opinions. A truly herculean task.

The most cordial and genial spirit characterized this congress. Its labors will be appreciated throughout the world, with lasting consequences.

MAGNOLIA LENNE.—A new variety of *M. purpurea*. Leaves and flowers appear together in April or May. Flowers large, round, inside almost white, outside purplish; 12 to 13 inches long by as many wide. Hardy; free bloomer. Shows a great deal of resemblance to *M. Yulan*, and but little to *M. purpurea*, its parent. Leaves deciduous. Leroy, of Angers, propagates it in quantities.

THE TRADE OF ANGERS.—According to some statistical tables, which we find in the French Horticultural Review, there were shipped in Angers, during the commercial year, beginning July, 1861, and ending April, 1862, two and one quarter millions of pounds of trees, shrubs and plants. They went all over France, and neighboring countries, to Germany, Spain, Portugal, Switzerland, Russia, Mediterranean coast, and North and South America. Of Apples, about twenty-one millions of pounds, of Pears, something over one million of pounds were shipped all over France. The best Pears go to England and Russia. There is, moreover, a great deal of truck raised, and Angers supplies the distant Paris market with most of the Cauliflower and Artichokes sold there. Chief general nurseries are those of André and Louis Leroy. Those of the first named "equal to any in the world." Camellias—Adolphe Cachet. Rhododendrons and Azaleas—Fargeton, Besnier. Ro-

ses—Robert & Moreau. Herbaceous plants—Ragot. Fuchsias and Verbenas—Paré.

THE PRINCESS ALEXANDRA'S BRIDAL BOUQUET.—It will doubtless interest your readers to learn that Mr. James Veitch, jun., of the Royal Exotic Nursery, King's Road, Chelsea, had by special permission of his Royal Highness the Prince of Wales, the honor of presenting the wedding bouquet. It was one of the most beautiful description, being composed of Orange blossoms, White Rose buds, rare Orchideous flowers, and sprigs of Myrtle, with a trimming of Honiton lace. The Myrtle was, by express command of her Majesty, sent from Osborne, and was taken from plants reared from the sprigs used in the bridal bouquet which Mr. Veitch had the honor to present to her Royal Highness the Princess Royal. It is, we understand, her Majesty's desire to have Myrtle plants raised and kept in the gardens at Osborne from each of the bridal bouquets of the Royal family in remembrance of these auspicious events.—*From the Times.*

FREAKS OF NATURE.—The Horticultural Society of Nantes, in France, takes notice of a common Passion-flower, which, in November last, was profusely flowering for the second time. Two facts in connection with it are noticeable. The wall it climbed on was facing due North, and the flowers, which in due season are rather too odoriferous, had at second flowering no smell whatever.

A GARDEN IN A PROCESSION.—The city of Hamburg, northern Germany, celebrated the 15th of March of this year as the Fiftieth Anniversary of the Expulsion of the French army. The different trades joined in the procession, each bearing its emblems and masterpieces. In this way the gardeners of the city and neighborhood appeared also, and with the following device:—A garden was drawn along by horses, made invisible by scaffolding, consisting of a pretty piece of lawn, in the midst of which stood a temple of Flora, surmounted by fountains, and the choicest greenhouse plants, amongst which the Palms charmed the eye most. The whole was beautifully arranged, novel in its way, and reflected very much to the credit of the Hamburg gardeners.

THE FERN-LEAVED CHINESE PRIMROSES have again made their appearance at the floral meetings of the past week, and prove to be far better than the figures of them represent. There is about them a degree of vigor which cannot fail to recommend

them to the notice of cultivators; while their distinct and elegant foliage will always render them ornamental, even when flowers are not present—the flowers themselves moreover being fully equal to those of good breeds of the ordinary fringed varieties. This being so, we have no hesitation in stating that they are highly deserving of general cultivation.

DEATH OF MR. J. VEITCH, SR.—This celebrated English nurseryman, whose name is probably connected with the introduction of more rare plants than any other in the world, died on the 14th of May, at his residence, at Exeter, England.

WEIGHT OF FRENCH FRUIT.—At an exhibition last fall, at Chartres, in France, the following are the weights of some of the fruits—Pears and Apples. We have reduced the French weights to decimals of pounds, but we give the French weights also. It may, however, be useful to some of our readers to note, that a kilogramme equals 2.2047 pounds avoirdupois; 1000 grammes equals 1 kilogramme. The weights are remarkable. We doubt whether America ever produced a Belle Angevine, of 37½ ounces:

PEARS.	Grammes.	Pounds.
Belle Angevine, a M. Dabout, du Cornet (Loiret),	1,064	2.37
Belle Angevine, a M. de Montboissier,	950	2.10
Doyenne d'Hiver, a M. Baubion, de Nogent-le-Roi,	900	2.00
Duch'e d'Angouleme, a M. Chapet, de Nog.-le-Phaye,	727	1.60
Beurre d'Arenberg, a M. Baubion,	495	1.00
Cure, a M. Baubion,	487	0.97
Calebasse Bosc, a M. Biard, de Chateaudun,	510	1.12
Saint-Germain, a M. Courbe, de Nogent-le-Roi,	493	0.98
Calebasse Victoria, a M. Humery, de Chateaudun,	351	0.77
Belle sans pepins, a M. de Lescluse, d'Uverre	500	1.10
Beurre Mauxion, a M. Langer, de Brou,	540	1.18
Triomphe de Jodoigne, a M. de Reversaux,	475	1.05
Triomphe de la Pomologie, a M. Gaudiche,	370	0.81
Belles Angevines quatre, a M. Courbe,	3,150	5.75
Beurre Superfin, a M. de Reversaux,	354	0.78
Bergamotte Sageret, a M. Biard,	300	0.66
Bon Chretien d'Auch, a M. Biard,	470	1.03
Bou Chretien Turc, a M. de Baulny,	590	1.30
Bon Chretien d'Espagne, a M. de Boisvillette,	458	1.00
Caillac, a M. Courbe,	930	2.04
Beurre Diel, a M. Courtois, de Chartres,	624	1.35
Colmar d'Arenberg, a M. de Lecluse,	690	1.50
Crassane, a Mme Marechal, de Chartres,	468	1.03
Gilgile, a Mme d'Astorg, de Beauvoir,	820	1.80
Rateau gris, a M. Cailliot, de Chateaudun,	610	1.34
Figue d'Alencon, a M. Damalix,	300	0.66
Bergamotte Esperen, a M. Biard,	300	0.66
Bon Chretien d'hiver, a M. Rousseau,	1,510	3.32
Beurre de Rans, a M. de Baulny,	568	1.25
Louise Bonne d'Avranches, a M. Boutillier,	245	0.40
Bergamotte Sageret, a M. Moret, de Chateaudun,	750	1.65
Cedron, a M. Gaudiche, de Chateaudun,	490	1.08
Bergamotte Esperen, a M. de Bossay, d'Arron,	287	0.63
Bezi de Chammoatel, a M. Lecompte, de la Perrine,	387	0.85

APPLES.	Grammes.	Pounds.
Belle Dubois, a M. de Baulny,	700	1.54
Caville Saint-Saveur, a M. Rousseau,	295	0.65
Caville blanche, a M. Loynes,	312	0.75
Reinette de Bretagne, a M. de Montboissier,	340	0.75
Reinette doree, a M. de Bossay,	290	0.64
Reine des Reinettes, a M. de Reversaux,	237	0.52
Reinette de Canada grise, a M. de Reversaux,	450	1.00
Reinette de Caux, a M. de Reversaux,	287	0.63
Beaute de Kel, a M. Grignon de Montigny,	282	0.61
Alfri-stou, a M. Rousseau,	363	0.80
Maltranche, a M. Rousseau,	365	0.80

VALLOTA PURPUREA.—From June to September are the months in which this exceedingly useful plant flowers; but by the following treatment, than which nothing can be more simple, it has flowered from the first week in November, having two fine five-flowered spikes in perfection on Christmas-day; it is then excellent for standing in rooms, &c. Indoors it is as valuable a plant as any in cultivation, and its value is enhanced forty-fold when in flower as above. To attain this, pot in May, studiously avoid letting the plants get too dry; keep them in a shady place until you find the roots have rambed into the fresh soil a little, then place them out in the open air under a Laurel or other shade, where they are effectually screened from the sun, leaving them in this position until September, when in all probability they will be just showing flowers; if not, put them in the full sunshine, slightly diminish their usual allowance of water, and as soon as the spikes are shown replace them in their shady position. Leave them there until you house your greenhouse plants, when they may also be taken in. When required to expand their flowers, give them a moderate temperature—such as the warm end of the greenhouse or the cold end of the stove.—*London Journal of Horticulture.*

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

DISCUSSIONAL MEETING, MAY 5, 1863.

Thos. P. James, Esq., in the chair.

Mr. James Eadie presented the opening essay on
**THE INTERIOR ARRANGEMENT OF
GREENHOUSES:**

This is a subject, of all others, on which there is likely to be a variety of opinions; every form of house, and almost every genera of plants, require a different arrangement, and whether the plants are young and small, or large-sized specimens, has also to be carefully considered. But that there is room for a very decided improvement, I think all will admit. Very much, however, depends on the form of house: for, if the house is faulty in construction, no amount of arrangement will ever give satisfaction, and, in my opinion, there is nothing so absurd as most of the greenhouses are. In most cases all the buildings are erected before the greenhouses are thought of; and then there is some dead wall which looks very unsightly, and it seems the best way to get rid of an eyesore is to erect a greenhouse against it. What a happy thought, to kill two birds

with one stone. At another time it is placed where it will look well from the windows of the mansion, regardless whether it be shaded from the sun by trees, buildings or any other impediment. Sometimes it is only the architectural beauty which is aimed at, with massy rafters and heavy mouldings, and lofty roof; fill it with small plants, pay a gardener to take care of them, to strive against nature. In these sketches you have a truthful picture of many of our greenhouses. Is it any wonder that such greenhouses are an endless source of disappointment and trouble, instead of pleasure and enjoyment? I am glad, however, to see that a new day is dawning on Greenhouse architecture; and if our Horticultural journals will only persevere, it will soon attain its full meridian splendor.

Of all the various forms of Greenhouses, the double-pitch fixed roof is perhaps the best, and admits of the best arrangement. But, whatever the form, we should endeavor to make the most of it; for with a little encouragement much may be done. I would here remark that stages are out of place in a private greenhouse: they are very unsightly, and can never be made to harmonize with the plants, besides, it is not natural for plants to be elevated on stages, where the dry air can circulate underneath and around them; they will grow better, with far less attention, if standing on the ground. Epyphites, perhaps, alone excepted.

In the arrangement of a Greenhouse, the heating medium, whatever it be, whether flue or hotwater, should pass along close to the front and back, and should never be sunk under the passages or walks. This is very important, as a great amount of heat is lost whenever so placed, the ground absorbing a great portion of the heat. The heating apparatus should be placed about 2½ feet above the level of the walks; a rough wall could then be built between it and the inside of the house, with rough stones, clinkers from a furnace, glasswork, or any other rough material that will admit of having crevices, where a little soil can be placed, in which some little ferns, mosses, Tradescantia, Periwinkle, or any other little plants can be put, which will have a fine effect. From the top of this wall to the front of the house lay supports, over which place boards covered with sand, on which to set pot plants; if the sand be watered occasionally, a genial moisture will arise off it which will be very beneficial to the plants. Be careful to leave the space of a foot between this covering and the front of the house, for the escape of heat, which by this arrangement, will be at the lowest part of the house, and between the plants and the cold,—a very im-

portant reason for being so placed. The passages should be at least 3½ feet wide, or even a little more, if you can afford the space. They should be of plain flagstones; always use as little wood as possible inside of a greenhouse, as it is very liable to rot and keep you constantly repairing.

A small border, about one foot wide, on each side of the walk, be planted with Lycopodium, will have a fine effect. The centre of the house can be considerably elevated, and some of the tallest and most conspicuous plants can be placed on the ridge from which they should slope gradually down to the edge of the walk,—but never so arranged that the eye can take in the whole at a glance; they should be rather irregular, some plants standing boldly forward, while others recede, thus making inequalities which are very pleasing, and which could be changed occasionally, by making fresh combinations. If the edge of the bank have a few rough stones interspersed between and in front of the pots, together with a few trailing and some dwarf variegated plants, planted so as to hide the pots of some of the other plants, the effect will be charming.

The walk could be made to wind around in graceful curves, and near where the curves of the walk unite, a large vase, with some noble specimen, or a wire stand, with some beautiful plants, could be placed, or a mass of rockwork, covered with plants so as to convey the idea that there was a good reason for taking the walk off the straight line.

If a little care and expense is bestowed on a greenhouse in its first arrangement, there is nothing so easy to keep in order, or will give so much satisfaction. By the above arrangement you have something that looks natural, and instead of the monotonous sameness of all the rows of pots on shelves and stages; and there is something natural and graceful, and which shows the plants to the best advantage. The plants always seem to be in their natural positions, and that is what you can never make them appear when placed on a stage. This mode of arrangement can be very fully carried out in large establishments, where fountains and ponds of heated water for growing aquatics, and well stocked with gold and silver carp, and with rustic seats, with plants trained up the back and sides, and give the greenhouse a magnificent and princely appearance.

Another form of arrangement, which is very simple yet works very well, is to have a front table about 4 feet wide and about 3½ feet high, just inside the house, under which your heating medium should pass, and which, if partially inclosed, will give a bottom heat for the propagation of cuttings,

or for the growing of tender plants, and which is of great use in forcing plants for flowering, starting the roots into activity and enabling the plants to bring their blossoms to perfection; or, if not used for any of these purposes, is still the best place for growing small plants, on account of their proximity to the light, and being small they do not shade the body of the house. On the inside of the passage a brick wall should be built about 2½ feet high, which should be filled up to the level of the top. If the appearance of the wall is an objection, it could be latticed over along the side of the walk, with an ornamental moulding on the top; then, by placing the tallest plants in the centre, gradually diminishing in size as they come out to the edge of the walk with a few nice plants in flower, mounted on inverted pots, thus bringing them nearer to the eye and making them prominent objects of attraction; by this arrangement the plants get all the light possible, and get it directly overhead which prevents the plants from being drawn all to one side, which is always the case, if grown on a stage; this is perhaps the best arrangement for growing specimen plants, and has always a neat and perfect appearance, and if a few beautiful climbers are added, to be trained up the rafters, such as Passiflora, Ipomea, Bignonia venusta, Jasminum grandiflorum, Rynchospermum jasminoides, Nasturtium, etc., with a few nice hanging baskets suspended through the house, give it a novel and beautiful appearance,

Mr. Walter Elder also presented an essay.

The Chair inquired whether staging is not requisite in greenhouses.

Mr. Eadie considered them out of place in an amateur's greenhouse. The ground could be raised or the walks sunk, and the roots of the plants thus kept in their proper sphere.

Mr. Satterthwait stated that there were many advantages in having staging in a commercial greenhouse. The space under them is useful for stowing away plants in a dormant state. In a wide house, with a roof of proper pitch, and no staging, plants in the centre are too far from the light to grow well.

Dr. Burgin advocated the use of blue glass, to increase the heat. Red glass is still better.

Mr. Schaffer had tried blue glass for cauliflowers without success.

Mr. Harrison gave his views of the reason why plants grow best near the glass. The heat rises to the upper part of the house, and plants requiring a high heat find a more congenial temperature near the roof than on the ground. It is not on account of obstructed light so much as diminished heat that

certain plants succeed better close to the glass than lower down.

Mr. Satterthwait thought this might be the true reason. Roses do best on the floor; Verbenas near the glass. More plants can be grown on stagings than on a flat floor, as they are better exposed to the light. Has no experience with colored glass. Does not believe healthy plants or fruits can be perfected under it.

Mr. Fairman Rogers stated that experiments at Kew Gardens had settled the question against the use of colored glass. Does not accept the general belief of gardeners, that all plants grow best near the glass roof. Soft-wooded plants, when growing quite feebly and straggling, can be made strong and stocky by covering with glass, even on the floor of the house.

Mr. Hibbert thinks the glass has a great attraction for plants, and draws them up. Verbenas cannot be grown on a low stage.

Mr. Graham did not regard it as a question of heat at all. Plants grow *slowest* near the glass.

Mr. Schaffer cited the case of plants in the woods, which shoot up, tall and slender, seeking the light.

Mr. Eadie said that plants are drawn up by the shade. In some houses plants grow more stocky 6 feet from the glass than 6 inches. Plants covered with a bell-glass, as Heliotropes, will *grow* more rapidly but not *flower*. If the roof is perfectly clear of obstructions, there will be no spindling. In the Lily house of Mr. Dundas, which is of this character, Caladiums grow to perfection.

Mr. Hibbert remarked, that the Caladium being a water plant, flourishes in the moist atmosphere of the Lily tank.

Mr. Rogers regarded the solid opaque sides of greenhouses, as they are generally constructed, as highly objectionable. Plants near the floor have not as much light as those above. In a house with a roof which presents the least possible obstruction to the passage of the light, there would be very little difference in the plants in any part of the house.

Dr. Burgin gave a statement of the atmospheric requirements of plants. Those plants requiring most Carbonic acid gas, which is heavier than air, do best in a low position.

Mr. Eadie was opposed entirely to staging. The same objects may be effected by other means. The walks may be sunk or the ground mounded up. Staging is out of place in a gentleman's private establishment.

Mr. Graham expressed similar views. Plants do better on a moist surface than on a dry staging.

Mr. Satterthwait. Plants must not be kept too moist at all times. Soil in pots soon gets sour if not dried out at proper times.

Mr. Hibbert. All plants do not flourish in a moist soil: Camellias do well; Azaleas and Pelargoniums do not.

Mr. Eadie. The London nurserymen grow Pelargoniums with from 2 to 4000 blooms on a single plant, in pots plunged into the soil. The finest plants of this genus he had ever seen were plunged in bituminous coal ashes. They were always moist and very healthy.

Mr. Satterthwait. The roots of plants thus treated go through the bottom into the border, and when cut off, for sale, the growth is checked. The great object is to get flowers without too much growth.

Mr. Rogers. The stages in the centre of his house are decaying, and it is a question with him how to renew them. They have not the same slope as the roof. If the roof be low and the stage near up to it, the view and the effect is bad.

Mr. Harrison objected to staging, from the fact that the plants on the uppermost steps are apt to be neglected or to receive less careful treatment than those lower down and more accessible.

Mr. Hibbert approved of platforms if of porous material.

MONTHLY DISPLAY, MAY 12TH.

The show of flowers and vegetables was, as usual at this busy season, only moderate in extent, though of fine quality.

James Eadie, gardener to Dr. Rush, had a large variety of foliage and miscellaneous plants and cut flowers. Several premiums were awarded to him for Table designs, Baskets of cut flowers, Collections of plants, and for a fine specimen Pelargonium, the Emperor.

E. R. Hibbert, gardener to Fairman Rogers, Esq., competed successfully in the department of Hanging Baskets, Foliage, miscellaneous, and hot and greenhouse plants, and Calceolarias, the latter very pretty and interesting.

Mr. Henry A. Dreer showed some fine varieties of Verbenas in pots, which took the prize.

Messrs. Mackenzie & Son present a half dozen beautiful new blotched seedling Petunias, which received the first premium.

John Landers, gardener to Dr. G. P. Norris, contributed 3 fine bunches of early forced Hamburg grapes, large and luscious, which received the award of the first prize.

Of vegetables the display was excellent, and the competition quite lively.

Thos. Meghran, the newly elected gardener to Girard College, had the best Rhubarb, and Anthony Felton, gardener to J. D. Whetham, Esq., the best Asparagus and general collection of vegetables.

A large number of plants, received from Isaac Newton, Esq., Commissioner of Agriculture, were distributed to the members; also seeds of the so stated Tree Cotton, from Wm. Saunders, Esq., Superintendent of the Government Propagating Garden. They presented a very different appearance from the ordinary cotton seed, which they resembled much in shape and color; but, instead of being single, were grouped in clusters of six to eight, in the form of a diminutive twist-loaf of bread. They will be thoroughly tested this year by the many skill propagators to whom they were distributed.

STATED BUSINESS MEETING, MAY 19TH.

Resolutions of thanks to Messrs. Newton and Saunders, for the plants and seeds presented by them, were offered by Mr. Schaffer, and adopted unanimously.

Dr. Kennedy announced the decease of the late William Darlington, M. D., to whose memory and virtues he paid a warm tribute, and presented the following preamble and resolutions, which were adopted:

Whereas, Intelligence has reached this Society of the decease, at the ripe old age of 81 years, of William Darlington, M. D., of West Chester, a respected and beloved member of the Society, and for many years its Professor of Botany,

Resolved, That in the death of Dr. Wm. Darlington, the Society has lost that member whom it most delighted to honor, and American Science one who, for more than 50 years has occupied a high rank in the lists of native botanists.

Resolved, That we will cherish the memory of our deceased fellow-member, whose multiplied accomplishments, high social position, and many Christian graces, endeared him to all within the extended sphere of his acquaintance.

Dr. Kennedy, Messrs. Thomas P. James, and Thos. Meehan, were appointed a Committee to prepare a Memoir of Dr. Darlington for the society.

A Committee of eight was appointed to obtain subscriptions to a guarantee fund for the Annual Exhibition, to be held at the Academy of Music, in September.

Messrs. Henry H. Kelly, John Burton, Remi Herrise, gardener to Lewis Taws, Esq., and Gottlieb Hauber, gardener to A. Catherwood, Esq., were elected to membership.

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

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VOL. V.—NO. 7.

Hints for July.



FLOWER-GARDEN AND PLEASURE-GROUND.

In many gardens there will be roses of poor and inferior kinds, or of good ones that the owner may desire superseded by better ones. This may readily be accomplished by budding or inoculating, and now and next month is the season to operate.

In almost all works on budding it is recommended to take the wood out of the bud to be inserted. This is necessary in the English climate, but unnecessary here, and never followed by practised hands.

Amateurs may have some rare or choice shrub they may desire to increase. They may now be propagated by layers. This is done by taking a strong and vigorous shoot of the present season's growth, slitting the shoot a few inches from its base, and burying it a few inches under the soil, or into a pot of soil provided for the purpose. Any thing can be propagated by layers; and it is an excellent mode of raising rare things that can be but with difficulty increased by any other.

Hollyhocks will be coming into bloom at this season. They have now become so much improved as to be one of the most popular flowers for the summer decoration of the flower garden. If the kinds are kept carefully separate, any particular variety will re-produce itself from seed. They may be more certainly kept pure by cutting off the flower stem;—each bud will make a plant. The seed should be sown as soon as ripe in a light rich soil, in the open air. If retained till late in the season they will not probably, flower the next year.

The raising of new varieties of florists' flowers is an interesting occupation to the amateur. The

process of hybridization, applies to all plants as well as to grapes; but good improved kinds of some things may be obtained from chance seedlings. The finest and doubtless of Roses, Petunias, Dahlias, Carnations, etc., should be selected, and as soon as the petals fade, they should be carefully removed, or they will cause the delicate organs of reproduction to decay before maturity. A flower may be so very double as not to bear seed at all, as in the case of the Gillyflower or Stock; but if the pistil remains perfect, as it usually does, seed will ensue.

Dahlia seed may be preserved till the spring. Antirrhinum, Rose, Carnation, and such hardy perennials, should be sown soon after ripening.

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.

Fuchsias in pots should have the coolest position of the flower garden assigned to them. They usually suffer much from Red Spider, which makes their leaves drop. The various remedies we have so often recommended should be applied. Frequent heavy syringings are particularly grateful to the Fuchsia.

The summer pruning of hedges and ornamental trees and shrubs, that require to be brought into particular shape, will be sedulously attended to through the season, according to former directions.

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 bucket full of water, allowing it time to soak gradually away, and when the surface has dried a little draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water through the season. If water is merely poured on the surface, it is made more compact by the weight of water, and the harder the

soil becomes, the easier it dries; and the result is, the more water you give the more is wanted.

The time is coming when transplanted trees of the past fall and spring will suffer more than during any other part of the season. If they show a vigorous growth of young wood, no danger need be apprehended, as it indicates that the roots are active, and can supply all the moisture the foliage calls for; but if no growth has been made, no roots have been formed, and the leaves are living for the most part on the sap in the wood and bark, and hot, drying weather will tell with injurious effect on such trees. This is generally first shown by the peeling off of the bark on the south-western side of the tree,—the most drying aspect; and where such exhaustion appears probable, much relief may be afforded by cutting back some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in hay-bands, or shading the south-west with boughs or boards.

VEGETABLE GARDEN.

Our hints for the last month will, in a great measure, bear a re-perusal at the commencement of this.

Sow endive, and towards the end of the month transplant in rows. They should be set out in rows eighteen inches apart, and one foot from each other. The soil can scarcely be too rich for them. Seed may yet be sown for a later crop.

If Broccoli is a desirable vegetable, it may be had all through the winter by being sown now. In about four weeks plant out into rich garden soil. On the approach of frost, take up the plants, with a portion of soil adhering, and pack them closely in a warm and somewhat damp cellar. They will continue to grow, and produce nice heads.

Beans may be sown up to the end of the month. For winter use, the White Kidney is very popular, although other kinds are very extensively grown for the same purpose.

In some families, large, full-grown Carrots are objectionable. Seeds of the Long Orange, sown now on rich sandy soils, form neat and desirable roots before winter. The same may be said of Beets.

Cucumbers for pickles are also sown about this time. They usually produce a greater number, and consequently smaller fruit, than when sown earlier. The Short Prickly is the kind to employ.

The main crop of winter Cabbage is often planted the first or second week in July. In planting, if the weather be dry, it is a good plan to make the holes before planting and fill up with water; after

soaking away, the plants may be set in, and they seldom wither afterwards, though without rain for a month. Another and more expeditious plan is to have the plants ready with their roots in a pan of water. They are then set into the hole at the time it is made. The water adhering to the roots then gives to the set out plants the advantages of puddling.

The remarks of last month are yet applicable for Celery.

GREENHOUSE.

An important point just now is to prepare winter-flowering plants. Cinerarias, Chinese Primrose, and Calceolarias should be sown about the end of the month; and cuttings made of most kinds of plants that are desirable. It is a great mistake, often made, to store up and treasure year after year, old and even 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.

Most of the plants are set out for the summer, as formerly recommended,—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.

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.

FRUIT GARDEN.

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.

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.

Keep pinching out all shoots from all fruit trees that are likely to grow stronger than the rest, or where they are not wanted.

Look after insects. Caterpillars of all kinds are best kept down by hand-picking.

Communications.

REMARKS ON THE CACTI TRIBE.

BY J. P. NORRIS, WESTCHESTER, PA.

Having had some experience with the Cacti tribe, perhaps a few words on the subject would not be uninteresting.

The Cacti tribe, although possessing little real *beauty*, are so very curious that they will fully repay any attention which may be bestowed upon them. They are very tenacious of life; so very much so that they are often found in the dwellings of the poor, where, in some cases, no other plant would thrive, nay, even live.

They are a plant which requires to be kept tolerably dry, and in a warm atmosphere. An excess of water will certainly rot them off at the roots. Another peculiarity of the tribe is that they grow much better when their roots have little space than when in a very large pot. Their soil should be composed of one part sand and two parts good potting soil. As a general rule they grow slowly and require little shifting; and when shifting is done, great care must be taken to prevent the roots from getting broken. The pots they are kept in should have at least one inch of broken potsherds, for if any water accumulates near the bottom of the pot it will certainly rot them off at the roots.

The propagation of the tribe Cacti is not, on the whole, difficult; and the whole secret of the success of some growers with this class of plants, is that they dry them for a day or two previous to planting them. Pure sand should be used, and the cuttings not put too close together. I have always found that young vigorous shoots root much easier than the old ones. For this reason I always propagate them after they have done flowering, when, if a good temperature be kept up, they will begin to sprout vigorously. If you want to propagate a few only, I would recommend that the cuttings be placed in three-inch pots in preference to the cutting pans; as the young cuttings of the Cactus just rooted cannot be moved and transplanted with as much impunity as other cuttings. After they are rooted do not be in a hurry to shift them into larger pots; a three-inch pot will answer for the first year, unless the plant grows unusually vigorous.

I think I have said enough about propagation of the Cactus, and will conclude by adding a few remarks on the beauty of the Cactus, if such it may be called. Some persons will exclaim, "There is certainly no beauty in them!" Wait till March or April, when they are all covered with beautiful flowers. Are they not pretty then? Besides, to the lover of nature they present a very interesting study. We should remember that "All is not gold that glitters," before we judge of this humble plant rashly.

FIVE YEARS OF THE MANETTI STOCK.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

Having, by experience with many hundreds of hardy roses, budded on the Manetti, been led to a conclusion concerning this stock somewhat different from my first impressions, I am tempted to lay the results of my various trials before the readers of the *Monthly*.

Nothing could surpass the growth of some sorts of Perpetuals on the Manetti during the first season. The hard-wooded varieties in particular, such as Madame de Cambacères, Triomphe de l'Exposition, and Prince Leon, made an amazing growth. I produced flowers far finer than I have ever seen them bear on their own roots. Some of them seemed to have a natural affinity to the stock, so completely absorbing its supplies of nutriment that scarcely the vestige of a sucker could be found. With others it was far otherwise, and the whole class of Bourbon Perpetuals, including the Géant and all his kin, except Gen. Jacqueminot, thrive but very moderately upon it. Still, the splendor of the flowers, and the enormous quantity of wood produced in the case of varieties first mentioned, made up for all failure elsewhere.

I was enthusiastic for the Manetti, and imputed the carpings of its enemies to the effects of careless or ignorant culture. Since that time, however, I have been won over to their side, for season after season has shown nothing but a record of decline, disease and death among the Manetti roses. During winter, they have all been carefully protected by earthing up, or by heeling in, root and branch, in light, well-drained soil. Yet, with every precaution, they make but a sorry figure by the side of the same roses on their own roots. I should make a few partial exceptions, all drawn from that vigorous hard-wooded class mentioned above. Some of them have held their own bravely, and though nowise matching their achievements of the first year, are still very commendable plants. Most of the

others are at present in the brush heap, waiting the application of the match. Some have been purged of dead and rotten wood by an unsparing use of the saw and shears, and reset for one more season.

As for soil and situation; the former is a strong, healthy loam, resting for the most part on gravel, trenched two feet or more in depth, highly manured with a well-rotted compost, and in every part drained thoroughly, either by nature or art. The land has an eastward slope, inclining southward. My practice has been to plant the stocks aslant in the earth, so that the junction of rose and stock was an inch or more beneath the surface. In planting stocks with dormant buds, this object was gained by the following means:—the entire stock, with the bud, of course, uppermost, was planted at an angle of about forty-five degrees, wholly beneath the surface, but the hole was only partially filled in, the upper end of the stock, with the bud, remaining exposed. When the bud had well grown out, and the wood had begun its first stage of hardening, the earth was drawn into the hole. In the course of the season, the young and green shoot commonly threw out roots. In the next spring, the stock was cut off, the rose cut back, and planted with a good root of its own.

To those who grow flowers for exhibition, I cordially commend the Manetti; but let the amateur, who wants a permanent ornament for his lawn or garden, shun it as an exasperating nuisance. For him, the rose should be self-rooted. A self-rooted rose is best produced from cuttings of half-ripe wood, *calloused in the cold*, and rooted either with or without a little bottom heat. Next in quality are roses propagated by layering in the open ground. Indeed, if the layers are well tongued, and other circumstances are favorable, they will throw out a bundle of roots from the extremity of the tongue, and form in all respects, as good plants as cuttings. An easy and rapid method of propagating self-rooted roses is by cuttings of the green wood calloused and rooted under glass, with a close heat. Plants thus obtained have always, with me, proved inferior to the others, both in vigor of growth and in the power of bearing the winter. These frail and sickly children of the forcing-house have been swept off by scores, when their brethren of the same parentage, but of hardier birth and nature have stood uninjured.

THE SWEET POTATO.

BY W. W. RATHBONE, MARIETTA, OHIO.

The Nanssemound is the only variety of Sweet Potato worthy of general culture in the Middle States. It produces more bushels per acre than the common Potato, on moderately fertile land; does well in almost all kinds of soil, and is fit for the table, in this latitude, from the 20th to the 30th of August.

Soil.—Select rolling or well drained land. It is an error to suppose, as many do, that sandy or gravelly soils only will do. Any soil that can be made and kept mellow from May to September, will do. *New land is first rate.* It is a common error to select land too rich—such as old garden plots. Such locations produce too much vine. Side hills, too poor for a good corn crop, will often prove the best of locations. Such side hills, however, almost invariably need manure. It should be well rotted, and may be applied in hill or broadcast. On heavy lands use anything that will loosen the soil, such as ashes and leaf mold.

Planting.—Hills or ridges? On loamy or clayey soils make hills by all means. On *very* light soils ridges will do. I prefer hills in all cases: 1. You are more certain of a crop. 2. The potatoes ripen earlier. 3. More bushels of *large* tubers can be obtained; and, 4. Early in the season, the large potatoes can easily be found by the bursting of the hills, and grabbed without injury to the crop.

The first idea that presents itself to many who attempt Sweet Potato raising, is a *great ridge*. In fact the first attempts of the mass of cultivators of this much neglected esculent, are of such a nature as to bring the least possible return. I have often seen ridges five and six feet from centre to centre. I plant acres, and the tips of the hills only measure 2½ feet each way, and tend with horse. This makes hills the proper size. They should in no case exceed 3 feet; and 2½ is better. Make the hills as high as possible; dry weather never hurts Sweet Potatoes. The *very weight* of earth in large hills and ridges prevents the growth of potatoes, and accelerates the vines.

About the 15th of May, when danger of frost is over, we begin setting out plants, and continue until July. Put one plant per hill, and 15 inches apart in the ridges.—Set deep enough to have two or three leaf *buds* below the surface; if cut down by worms they will grow anew. Never set when the ground is too wet to work—put the plants in the cellar with earth on the roots and wait. Choose a cloudy day, or afternoon after 4 o'clock, or early in the morning—especially foggy ones. *Do not*

wait for rain. It is a common error to set plants in a muddy time. I plant very fast thus: One to drop plants—one to pour water; *never omit the water*—and two or three to set. Make a hole large enough to hold the roots, insert the plant at the same time the water is being poured, fill the hole quickly with mellow earth without pressing. Do not use so much water as to have it run over the top of the hole: finish off with dry earth. Never water again; it is worse than useless. The philosophy of setting thus is: the water performs the triple purpose of floating the fibres into a horizontal position—carrying the fine earth among them, and putting the water in the only place needed.

After Culture.—After every rain, as soon as the land is dry enough to work, break the crust in close contact with the plants. I do this rapidly with both hands—clasping, raising, and pressing the earth on tips of the hills. A smart boy can thus “hoe” 1000 plants per hour. It answers all the purposes of a regular hoeing while the plants are young—breaking up *ant holes*, and giving life to the plant. Keep the surface clear of weeds. Be careful not to hoe too deep. The best potatoes lie immediately below the surface. Never cut off vines. If they root at joints lift them on sunny days. Dig before frost, and put in a warm, dry place to keep.

If the above directions are followed, Sweet Potatoes can be raised with profit any where in the Middle and Western States.

MY EXPERIENCE WITH GRAPE-VINES.

BY PHINEAS CHEWCE.

While sitting in my store one day,
And reading what the *Monthly* had to say,
And sipping of my wine,—
My commercial head was nearly turned,
And my thumbs and fingers fairly burned,
To plant a vine.

I journeyed straightway to my cottage yard,
But found the soil so awful stiff and hard,—
So poor and bad,—
The situation worse; yet worse the site,—
A score of still worse things unmann'd me quite,
And made me sad.

When ebbing hope runs by, how sweet
The turning tide's full flow to meet!
While I felt blue,
Gottlieb Katzen, whom I knew of yore,
A noted Vigneron, before my cottage door
His person threw!

He very kindly gave me all the rules
Of all the grape wise men, and all the fools,
And showed the best,—
And when he saw I understood, he said,
With practice soon, and reason in the head,
I'd learn the rest.

My cottage lot, which erst had nothing nice,
Now seemed to me the veriest paradise
For luscious fruits.
I felt I knew the noble art;
Could fix each branch, and shoot, and part,
From leaves to roots.

A squad of men within my place that day
Was set to make the border right away,
Full three feet two;
And twenty feet in width; for Gottlieb said,
Unless the border was thus perfect made,
'Twould never do.

We had the border filled with splendid soil,
Selected from the woods around for many a mile,
And just got done;
When Gottlieb ran a trial picket through,
And found, instead of soil full three feet two,
But three feet one!

As I, dear reader, you I know will smile,
For what on earth can do an inch of soil?
But Gottlieb swore,
Unless in this he had his wished for way,
By rotten roots, and other dear bought ills I'd pay
For evermore.

Friend Snooks, the tailor, in the other row,
A first rate gardener as such titles go,
And clever man,
Came in just then, and gave me his advice,
To use good carrion, and perhaps a spice
Of rotten tan.

The tannic acid, mixed with nitrogen,
Was worth a bed of even three feet ten,—
The tailor said,—
And rotting bodies, even bones or hide,
Was worth all Gottlieb's notions, long or wide,
Or depth of bed.

This tallied square with what the chemists' taught.
A rotten carcase soon was found, and bought,
And two good hogs.
And tan besides; and then poor Gottlieb's bed,
With all the schemes of my directing head,
Went to the dogs.

The new born notions had the fullest sway,
And, meteor-like, the grape-vines shot away—
In time of course ;—

But somehow something somewhat like a blight,
Attacked the vines. And they grew nearly white,
And daily worse.

And then I thought of what I knew before,
Of a noble grape vine near a neighbor's door,—
The Widow Best.

She said she'd failed in every thing she'd tried,
Till near the roots she put a cat that died.
But mark the rest !

It would not do to set the body *so*,
Or *any way* to let the corpus go,—
She dug the hole
To set the body with the tail due south ;
But more important still to set the mouth
To the North pole.

And thus her grape-vine lived and grew,
Nor rot nor mildew ever knew,
Nor grapes to fail.
An electric current, so she thought,
Ran through the body, as it ought,
From head to tail.

I did my vines like Mistress Best's,
And now am rid of all my pests.
Fruit never fails.

But those who wish to try the plan,
Must lay the nicest way they can,
The heads and tails.

[Our correspondents seem bound to force rhymes
on us. We pass the above, as we think it may
point a moral if it does not adorn a *tales*.—ED.]

HALE'S EARLY PEACH.

BY W. W. RATHBONE, MARIETTA, OHIO.

I would like to enquire whether Hale's Early Peach has rotted in other sections than this. Four trees on my place,—high plain, loam soil,—did not produce a perfect specimen last season. The Early York (Serrate) fails in the same way. The Troth's Early Red I find an excellent peach, when the two former fail. The Hale's Early, last season, rotted in another instance on a high sandy plain. If it had not this fault it would be a great acquisition. It is a week earlier than the Serrate Early York, is a larger peach, and bears crops when the trees are extremely young.

EARLY FORCING OF FRUITS AND VEGETABLES.

BY MR. E. SATTERTHWAIT, JENKINTOWN, PA.,
Read before Pennsylvania Hort. Society, Jan'y 7th.

The writer has long had an opinion, which has strengthened into an abiding conviction, that what is wanted to advance the cause of Horticultural science and to increase its usefulness, is not mere theoretic dissertations and discussions ; for these, though oftentimes very plausible and interesting, yet not being founded upon practical knowledge and ascertained facts, but too often cause the adoption of erroneous ideas, and lead to disappointment, discouragement and loss, and have the effect to retard and defeat the object they are intended to promote. The writer offers this as his apology for not attempting to give a general or complete essay upon the subject assigned to him. He considers that he will better promote the object which the society has in view, by giving a few simple facts and practical details upon those parts of the subject with which he is familiar.

In regard to the subject of forcing fruits. Apricots, Nectarines and Peaches, can be successfully grown in almost any sort of glass structure that will admit of abundant ventilation. Though not essential, I should always recommend a flue, or some mode of heating artificially. The plan I should recommend is to grow them in pots. Pot the trees when one year old in 11-inch pots ; cut them back very severely, pinch them in during the next season's growth, shift into a size larger pot in the fall, and they will be ready for fruiting the next season. They may be wintered in the cellar or in a cold house, and brought into the forcing house and started any time from January to March. When growth commences, of course a rigid pinching in must be practiced. As the season advances, an abundance of air and room must be given to perfect the flavor of the fruit ; and after the fruit is so far advanced as to be out of danger from *curculio*, a portion or all may be removed from the house and the pots plunged in the open border, where they will do well, and require less care in watering, and keeping clear of spider, &c. Repot again in the fall, and give plenty of fresh fertilizing material. This is of course only a very brief outline of the system. Much more might be said upon the minor details, and much profitable discussion may, no doubt be elicited upon the different modes of culture recommended ; but I shall leave that to those who have had more practical experience on the subject, and shall conclude this branch of the subject by saying, that what little experience I have had with

it goes to satisfy me that the whole thing is very simple and easy, and attended with no real difficulty, and, when entered into with the right spirit, and with ordinary care and attention, success will be certain. Cherries may be successfully forced in this way; and it is said Plums also;—I doubt, however, whether much can be done with these; but not having tried them, cannot speak from experience.

Of Grapes I shall say nothing, because that is a subject worthy of a separate essay of itself and will no doubt be assigned as such to some one qualified to do it justice, which the writer is not.

Strawberries can be successfully forced in any kind of glazed houses, with or without heat. The plants for this purpose should either be potted in the spring, or allowed to root in the pot in summer, in either case the runners must, of course, be taken off the plants as they appear. They should be repotted into 6 or 7-inch pots late in the fall, and plunged in a cold frame and slightly protected with leaves till wanted; and can be brought into the house and started in succession from December to March. I am trying strawberries this year for the first time, on a large scale, in hot-beds, which at present promise well. There is no trouble with red spider in hot-beds.

I shall leave the subject of forcing fruits by saying, that though not able as yet to impart any valuable information in regard to it, I am giving particular attention to the subject, and shall always be ready to impart the results of my experience for the benefit of the society.

In regard to the forcing of vegetables, I may say that I have been in the practice for several years of forcing for market large quantities of Asparagus, Rhubarb, Lettuce, Radishes, Beets, Cauliflower, etc. These are all grown in hot-bed, made in the ordinary way; that is, pits sunk in the ground to the depth of from 3 to 5 feet, and lined at the top with boards; the sash fitting closely, and nearly level with the surface of the ground. The ground selected for this purpose should be dry, and in as warm and sheltered a situation as possible. For Asparagus the pits should be $3\frac{1}{2}$ feet deep; these are filled to the depth of 2 feet with fresh horse stable manure, wet and tramped as it is put in; on the top of this is put about two inches of the old decomposed manure and soil from the beds of the previous year. On this the roots are placed. These must be old or at least full grown roots; those only a year or two from the seed will not do. They should be dug in as large masses as possible, with all the earth left on that will adhere to them. These

masses of roots and earth are packed close together in the beds, and covered with about 3 inches of the old hot-bed soil, which will fill the frame to about 6 inches from the glass. The surface of the bed is then carefully raked and planted with Lettuce, Radishes, Beets, Parsley, Cucumbers or Cauliflower; for this last the pits must be at least a foot deeper, so as to leave sufficient room for the plants to grow. In order to make the most of the ground, Lettuce is planted between the Cauliflower plants and between the hills of Cucumbers, and rows of Parsley between the rows of Beets. We commence putting in beds in this way early in December, and continue in succession till late in March. Asparagus put in in this way will be fit to cut in about two weeks, and we have it constantly from Christmas till it comes out doors. The Asparagus roots, after cutting 5 or 6 weeks will be nearly exhausted, and will not throw up many more shoots; but by this time the other crops planted in the bed will have grown so as to want all the space. In this way we get two crops at once from the same beds, the one not interfering with the other.

Lettuce and Radishes are very extensively grown for market in cold hot-beds, that is in frames under glass without any artificial heat; but in this way they cannot of course be had very early.

In our plan of using manure for producing heat, we get two, and sometimes three successive crops in a season from the same beds.

For Rhubarb the pits should be five feet deep. The roots are put in in the same way as asparagus, with the same quantity of manure and soil; but, of course, nothing else can be grown on top of the beds with rhubarb, as we do with asparagus. The varieties we use are the *Linnaeus* and *Victoria*, which both do well but no doubt any other large sort would do.

Tomatoes may be grown in a greenhouse, and fruited any time in the winter or spring. To do this the plants should be started early in the fall, potted first in small pots, shifted 2 or 3 times, and fruited in 10-inch pots. The variety introduced here by Mr. Dreer, as the "Extra Early," appears to be an admirable sort for this purpose.

It may, perhaps, be proper to say something on the subject of forcing plants of certain vegetables, to be transplanted in the open ground for an early crop. This is regularly done in large quantities with Cabbage, Lettuce, Tomatoes, Egg-plants, Peppers and Sweet Potatoes. To grow these, the beds are made the same as has been described, with about 6 inches of soil on top of the manure. It is a good plan after putting in the soil, to let it lay a

few days, to start the seeds of any trash that may be in the soil, then give it another raking to destroy these before sowing. For Cabbage plants the soil should be poor; they should be started very early, say first of January, sow quite thin, and give the plants abundance of air, removing the sash altogether for a week or two before transplanting to the open ground, which should be done as soon as the ground is fit to work. Tomatoes and Egg-plants may be started about the first of February. When the plants are about 3 inches in height, they should be transplanted to another frame and allowed plenty of room. For Tomato plants the soil should not be rich; they should be allowed plenty of air, so as to get well hardened before planting out, which should not be done till May. Egg-plants require a strong heat, and a rich soil, and not much air; they should not be planted out till June, when they should be taken up with as large balls of earth as possible, and planted in very rich soil.

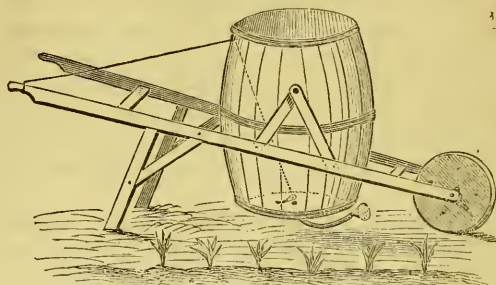
In the management of hot-beds it is very necessary to have an ample supply of mats. They are very simply and cheaply made of rye straw. The beds must be covered with these at nights to keep out frost; and in very cold and cloudy weather it may sometimes be necessary to keep them on during the day, this however should not be done except when absolutely necessary to keep out frost; as a long exclusion from the light would be fatal to the plants. For this reason, snow must be at once removed from the sash. In the early part of the winter, it will not be necessary to give much air, and no water; but later in the season they will require air and water in proportion to the increased power of the sun. This must be attended to daily, and with judgment and discrimination.

I know of no other vegetables than those which have been named, that can be profitably forced. There are many others, such as Peas, Beans, Potatoes and Sugar Corn, that it would be very desirable have earlier than we do; but I know of no way of forcing them that would not be very expensive. I presume there would be no difficulty in growing them in hot-beds or in a forcing house, but the amount of room they would require would make them very costly. I have tried starting Lima Beans, Squashes and Cucumbers in hot-beds in pots, but failed in obtaining them any earlier by this means.

[We gave sometime ago an abstract of Mr. Satterthwait's remarks as we reported them, and now give the essay entire. It will well repay an attentive perusal.—Ed.]

A WATERING BARROW.

BY F. R. S., BURLINGTON, N. J.



In describing this barrow it is desired to bring into notice, not only a very useful apparatus, but also one that every gardener may make for himself. There are plenty of excellent machines for watering gardens, but they cost money. In nine cases out of ten this one need not cost a cent.

The arrangement, as may be seen by the cut, is very simple. Having selected a good water-tight barrel, put through it a strong wooden bar, with the ends rounded and projecting two or three inches from the sides. This bar should be about a foot from the top of the barrel. A hole is then bored in the bottom of the barrel, and a piece of leaden pipe, about two and a half feet long, inserted and secured. A valve with a leather hinge is placed over this hole. A string from the valve is passed over a pulley, which may be made of a common spool, near the top of the barrel. This being done, mount the barrel on such a barrow as is shown in the cut, put a rose upon the leaden pipe, fasten the valve string to the right handle of the barrow, and the machine is made. If there are no unused barrow wheels on the premises, one may be made by sawing two thick pieces of plank in a circular form, and nailing them together, with the grain of one at right angles with the grain of the other. Bore and chisel a square hole in the centre of this and insert an axle which is of easy construction.

The peculiar convenience of this watering barrow is, that it may be wheeled along a row of vegetables or flowers, and by pulling the valve-string with the fore-finger of the right hand, the water will flow from the rose until the barrel is empty, and the row will be watered with very little trouble and much expedition. If another pipe and rose be placed so as to project from the other side, both valves may be worked as easily as one, and two rows may be watered at the same time. The pipe being flexible, may be bent so as to suit the distance between the rows, the height of plants, &c. This apparatus is particularly adapted to places where there is much "row watering" to be done.

New or Rare Plants.

NEW ROSES.—Many of the best English Rose-growers have been canvassing the claims of their favorites. Summing up, the Editor of the *London Chronicle* says:

"The enviable position of having most thoroughly won the suffrages of the aforementioned critics, is held by the Duc de Rohan, a brilliant crimson flower, which, according to Mr. Radclyffe, is 'sure to gratify everybody,' and to which the epithets superb and first-class are unhesitatingly applied. To the same series of richly-colored crimson flowers belong Maurice Bernardin, which is said to be quite first rate; Oliver Delhomme, spoken of as one of the very best; Charles Lefevre, a magnificent sort, and one of the finest, with the flowers shaded with maroon; Souvenir du Comte Cavour, a rich and effective crimson with dark velvety shading; and Madame Julie Daran, which is generally spoken of with satisfaction, though the terms used are not quite so ardent as in the other cases. These, then, are no mean accessions to the ranks of high-colored Roses. Not inferior, but of another stamp, come Beauty of Waltham, a rosy crimson, which is not surpassed in beauty or in quality; Francois Lacharme, on which the epithets beautiful, exquisite and quite first-rate are worthily bestowed; Robert Fortune, which is said to be both superb and useful; John Hopper, which is generally acknowledged to be first-class; and Madame Charles Wood, which is set down as quite a show variety. Suchare, the most decided acquisition to the rosy-colored series, the sorts varying among themselves in tint as well as in character. Lastly, we have a white, called Louise Darzins, with equally satisfactory vouchers, and pronounced to be quite a gem. These are all of the Hybrid Perpetual series.

Among Tea-scented Roses, three of the authorities already quoted, speak in the highest possible terms of Gloire de Bordeaux, a variety with the habit and foliage of old Glorie de Dijon, from which it was raised, but with flowers quite different in color, being of a 'silvery white, the back of the petals rosy-pink.' If it has the good qualities of its parent, it deserves all praise."

NEW EVERGREENS AT THE LONDON APRIL EXHIBITION.—The *London Gardener's Weekly* says:

"Messrs. Veitch's lot of novelties comprised *Abies Mertensiana*, a short-leaved bristly looking

Spruce, remarkably racemose and twiggy, and calculated to make a fine effect in the specimen form, as well as to form showy belts and clumps in the pinery. *Torreya grandis* in a small state is not very attractive; it has a Taxodium style of leafage and growth, and will make a fine plant for furnishing, if once or twice nipped in when growing, to promote a dense habit. *Euonymus radicans* in the variegated form is a much better plant than any of the variegated forms of *E. japonica*, for though the golden-leaved *Japonica* is a most beautiful object, it is very difficult to keep it true and neat, and impossible to get it up to a large size. But this *radicans* has a more twiggy habit, and makes free lateral growth, the shoots being crowded with small dull-surfaced leaves, and in this variety very plentifully blotched with creamy variegation. The variegated form of *E. radicans* is unquestionably a shrub of the highest value, both for its excellent habit and intrinsic beauty.

The most striking plant in Mr. Standish's lot was *Retinospora pisifera*, the margins of the tufts of leaves being of a rich yellow color, and looking as if each separate bundle of twigs terminated in gold fringe—a very lively and regal-looking object for conservatory decoration, and probably quite hardy out of doors. The variegated form of the Umbrella Pine, *Sciadopitys verticillata variegata*, cannot be judged in a small state; no doubt, if the variegation is permanent, a great tree of this pine on a lawn or knoll in park will be one of the most remarkable objects ever yet seen in English landscape. *Osmanthus ilicifolia* is in all its forms, both green and variegated, so like a holly that it would have few claims on our attention were it not that it grows about four times as fast, and we need not wait fifteen years now for specimens of the handsomest of all variegated evergreen shrubs. Mr. Standish also, showed the true *Skimmia japonica* again, smothered with huge heads of bloom, which promise marvellous bunches of berries by-and-by. Another of the really useful things from the same grower was *Eleagnus japonicus variegatus*, a charming shrub. The green-leaved *Aucuba japonica*, in both the male and female form, was exhibited.

Ilex Fortuni, from the Bagshot nurseries, is an interesting shrub; as unlike a holly as any of the race could well be. It has small dull-green leaves, on slender twigs, and in leafage as much more like a *Buxus* than an *Ilex*. *Thujaopsis Standishii* was a wretched specimen, not worth the pot that held it. *Raphiolepis ovata* is a fine characteristic shrub, invaluable for conservatories and cool greenhouses.

PINUS ARISTATA.—A new species of Pine, discovered by Dr. C. C. Parry in the Alpine Regions of Colorado Territory.

During his first botanical expedition to the Pike's Peak region, Dr. Parry, in searching for James' *Pinus flexilis*, found, instead of one, two five-leaved Pines, which evidently had been confounded by Dr. James; thus the discrepancies of his description are fully explained. His general description of the tree and the edible seeds belong to what we now name *P. flexilis*, while the "erect cones" (smaller than those of *P. rigida*) "with unarmed scales" must be very imperfect young ones of this, or old ones of the new species, which had lost their awns.

On alpine heights, between 9,200 and 11,800 or 12,000 feet high, on Pike's Peak and the high mountains of the Snowy Range, Dr. Parry, 1861 and 1862; Messrs. Hall & Harbour, (Col. No. 530) 1862. Also on the highest of the heights of the Coochetopa Pass, nearly S. W. of Pike's Peak, (altitude over 10,000 feet,) where Capt. Gunnison discovered in 1853 what seems to be this species without fruit; (see Pac. R. R. Rep. II., p. 130;) the leaves which I could compare are those of our plant. Fl. end of June and beginning of July. Flourishing best in the higher elevations and never descending below 9,000 feet, in its lower ranges not ripening its fruits as well as on the bleak heights, this truly alpine species—in that respect our representative of the European *P. pumilio*—characterizes the highest belt of timber on the peaks of Colorado. On sheltered slopes a tree 40 or 50 feet high and 1 to 2 feet in diameter, it becomes a straggling bush, prostrate, and almost creeping, on the bleak summits of the high ridges. The bark is thin and scaly, even in older trees, not more than 3 or 4 lines thick, of a light grayish brown color; that of younger branches smooth, with many large vesicles containing a clear fluid balsam, which remains between the layers of the old bark. Wood white, tough, not very resinous; of extremely slow growth, so that a small, smooth-barked stem of 13 lines diameter exhibited about fifty annual rings, all between 1-6 and 1-60 line wide, the smaller ones consisting of 3 to 6, the widest ones of 15 to 25 layers of cells, each cell 0,007 line in diameter. A tree of 2 feet thickness would at that rate indicate an age of over 1,000 years; but the annual rings of larger trees growing in favored situations are wider, and, if a specimen sent by Dr. Parry is not mislabelled, sometimes as wide as $\frac{1}{2}$ line, giving the largest trees a probable age of 500 to 800 years. Branches spreading, very often many of them twisted, stunted, or dead; the larger branches and the stem it-

self frequently covered with young branches or shoots, which seem to keep life in the old trunk. Leaves crowded from the axils of ovate, acuminate brittle, at first light brown scales, which, persisting longer than the leaves themselves, cover the branches with their rough blackish remains; leaves light green on both sides without white dots, mostly with numerous exudations of white resin, usually curved upwards, entire on edges and keel, abruptly acutish, stouter in fruit bearing, more slender in such trees as produce principally male flowers, in very robust specimens $1\frac{1}{4}$ and rarely even $1\frac{1}{2}$, usually about 1 inch long; on sterile branches straight and horizontal, "giving the branches the appearance of so many bottle brushes." The vaginae consist of 7 or 8 oblong scales with fringed margins, adpressed and forming a sheath 3 or 4 lines long on the young leaf, soon spreading and squarrose, falling off in the second or third year. Many lanceolate acuminate scales, perulae, sheathe the lower part of the shoots; shorter and broader bracts, bearing in their axils the male aments, follow next. The aments together form a very short spike, or rather head, 6 or 8 lines long; often these heads persist on the axis for 2 or even 3 years with a few bunches of leaves above each one, giving the appearance of a leafy spike 1 or $1\frac{1}{2}$ inches long! Our figure does not represent this condition distinctly, but shows the numerous naked spaces, about 10 in number, which in former years had been occupied by male flowers. I have seen branches with 16 such naked spaces, proving that leaves were persistent for 16 years—a fact unheard of among pines, where leaves are said to endure only 3 years. The stipitate oval ament 3 to 4 lines long, has a proper involucreum of 4 oblong scales or bracts of equal length. It seems that the involucreum of the male ament and the form of the ament of the anthers, together with the fruit and seed, offer characters of importance for the distinction and arrangement of species, hitherto neglected probably because living nature has not been studied as diligently as the dried mummies of the herbaria, and these contain so few good flowering specimens of Pines; the number of leaves, so much relied on, is of secondary consideration, and is often calculated to mislead, separating the most natural affinities, such as our Cembroid Nut-pines with 1 or five leaves, or the Pineoid Pines (*P. Pinea*, *P. Sabiniiana*, *P. Torreyana*) with 2 or 5 leaves. *P. sylvestris* has an oval ament 3 lines long, with an involucreum of 3 equal lance-linear acute scales in the axil of a lanceolate recurved bract, which is deciduous with the ament; anther with a short, nearly entire crista.



BRANCH AND MATURE CONE OF PINUS ARISTATA.

P. Austriaca has cylindrical curved ament $1\frac{1}{4}$ inches long, with an involucre of about 10 very unequal and almost distichous oval scales, in the axil of a linear-lanceolate recurved persistent bract; anther, with a semicircular entire crista, large enough to entirely hide the body of the anther in the yet closed ament, and give the latter the appearance of a young cone. Crista of the anther scarcely indicated by a knob, smaller than in any pine examined by me. Female aments single, or 2 together, near the end of the young shoots, bristling with the lanceolate, aristate, erect scales, of purple black color. Cones oval, obtuse, $2\frac{1}{4}$ to $2\frac{1}{2}$ inches long, about half as much in diameter, often covered with resin as if varnished; their purplish-brown or blackish color is found also in a little group of alpine pines of the Popocatepetl with 3 to 5 leaves, discovered by Roezl. Bracts, as in all pines, not obliterated ("evanidæ") as is usually stated, but much altered, and rather indistinct; more or less thickened and partly connate with the base of the scale; in our species, only the upper obtuse mucronate part membranaceous and free; scales 10 to 15 lines long and 4 to 6 lines wide at their exposed part; transverse ridge of the rhombic, rather flat, protuberance of the scale very conspicuous; the slender mucro or awn, from the small rhombic central knob, 2 to 3 lines long, curved upwards, at last tortuous and easily broken off, has suggested the name for the species. Seed nearly 3 lines long, with the obovate wing 6 to 7 lines long; embryo in all the seeds examined by me, with 7 short cotyledons.

Systematically, this species belongs to Endlicher's section *Pseudostrobus*, which comprises many Mexican, some Central American, and a single West Indian species; it is its only representative in the territory of the United States.

THE *Botanical Magazine* for the month of May figures the following plants—*Alocasia Lowii*, a beautiful Bornean addition to the class of ornamental-leaved stove plants, having very much the character of *A. Veitchii*, but with the advantage of being a plant of freer growth. It is a fine thing. *Saxifraga Fortunei*, an evergreen Saxifrage, introduced from Japan by Mr. Fortune. It has the general features of *S. sarmentosa*, but the cordate-reniform seven-lobed leaves are green, and the white unspotted flowers, which grow in a branched panicle, have the lower petal about three times as large as the rest, and notched with a few coarse teeth. It is a very pretty plant, but will be quite eclipsed by a variety in which the leaves are beautifully va-

riegated; also introduced by Mr. Fortune to the nursery of Mr. Standish. *Hemantus Natalensis*, a near ally of *H. insignis*, and a fine greenhouse bulb, with the sheaths at the base of the stem beautifully spotted and tipped with crimson, the leaves themselves oblong acute, and the flowers collected into a roundish head at the top of the scape, pale green with orange-yellow anthers, and surrounded by an involucre of rich ferruginous purple bracts; it comes from Natal. *Scilla Natalensis*, another ornamental greenhouse bulb from Natal, with a tall scape supporting a long raceme of blue flowers, and broad lance-shaped leaves sheathing the stem by their broader base. *Heterotropa parviflora*, a neat little Japanese perennial, with a good deal the appearance of our common *Asarabacca*, except that the leaves are cordate approaching to sagittate, with a pallid stripe along the centre, and a good deal marked with blotches of grey.

ABIES ALBERTIANA.—In our second volume, page 87, we took occasion to say that the plant known in England as *Abies Mertensiana*, could not possibly be the *Abies Williamsonii*, which we then figured, and which the English were distributing as synonymous with that species. They have now discovered that they have never had *Abies Mertensiana*, but the plant so named proves to be a distinct species, which Mr. Murray,—not the best authority, however—has named *Abies Albertiana*.

Dr. Lindley, however, in the London *Gardener's Chronicle*, seems to lend weight to Mr. Murray's views, and we presume, therefore, it will prove a good species. A sketch accompanies the description in the *Chronicle*, but appears so very much like our common Hemlock (*Abies Canadensis*) in general form and habit, that it is difficult to convey by this kind of illustration its peculiar distinction.

The following is Mr. Murray's account of it:

"A tree of 100 to 150 feet in height. Branches flexible and weeping. Branchlets slender, with a dirty-brown bark, pubescent. Pulvini slightly angularly decurrent, thickened at the apex, wholly adpressed to the branchlet; phyllulæ semiorbicular. Buds small, surrounded at the base by pulvini, and enclosed by one row of about five scales. Leaves from 3 to 7 lines long, perennial, subdistichous, petiolate, linear, somewhat pointed, entire, above glabrous and without stomata, below with a midrib, on each side of which are about 9 or 10 irregular and inconspicuous rows of stomata. Inflorescence not observed. Cones fawn-colored, about an inch in length, elongate-obovate, with five rows of

scales in the longitudinal spiral, amounting to about 25 scales in all. Scales elongate, oblong-oval, about 6 or 7 lines in length, and $3\frac{1}{2}$ lines in breadth, coriaceous, somewhat glabrous, and subsituated on the outside where exposed, tomentose inside and where covered by the neighboring scales, stipitate, eared at the base on one side, rounded on the other, margins slightly irregular. Bracts linear, blunt at the point, with the margins entire, about 3 lines in length, and three-quarters of a line in breadth. Seeds small, inequilateral, easily separated from the wing, which is about three times the length of the seed, and one and a half times its breadth.

“Agassiz, in his ‘Lake Superior,’ says, ‘There are in all continents remarkable differences between the vegetation of the shores of a continent east and west within the same limit, or the same isothermal line.’ We may add that it seems that the western coasts of continents under such conditions are more likely to have similar conditions of climate than an opposed east and west coast, even although they be nearer in position. Hence that we may *a priori* expect, under the same isothermal lines, to find the plants of the western coast of America more likely to thrive in this country than those of the eastern coast, and that we may reasonably anticipate that the *Abies Albertiana* will thrive better than the common *Abies canadensis*, a supposition which is confirmed by the more rapid growth and greater hardiness of the young plants of *Abies Albertiana* already tried.

The tree was raised from the first consignment of seeds received from Jeffrey in 1851; is consequently about 11 years old. It is about 15 feet high, and the place where it is growing is on the southern slope of the Grampian Hills, about 10 miles west of Perth, and consequently in a much worse climate and more exposed district than will be found in three-fourths of the kingdom. Another beautiful specimen, 14 feet 6 inches high, is to be seen at Haafodunos, the property of H. R. Sandbaek, Esq.

“Specimens of the cone and leaves of *Abies Mertensiana* and of *Abies Albertiana* may be seen in the collection of the Royal Horticultural Society.”

LASTREA STANDISHII.—A handsome fern, introduced into this country by Mr. Fortune, who met with it in a nursery garden in Japan. From him it passed into the hands of Mr. Standish, who exhibited it during the summer of 1862 under the name of *Polystichus concavum*, which name was given to it on account of the remarkably concave

upper surface of its fronds. However, when it produced its fructification it was found to be of the *Lastrea* family, and has had the name of Mr. Standish connected with it—a name which is familiar to every English horticulturist. The color of the fronds is a lovely bright pale green, and its spreading fronds, deflected pinnæ, and concave pinnules give it a very distinct and well-marked character, while from their size and the multitude of their crowded divisions, arising from the decompound structure, they are also very ornamental and effective. It is nearly hardy, and probably quite so.

WELWITSCHIA MIRABILIS (*Wonderful Welwitschia*.)—A native of Damara and Cape Negro, in western tropical Africa. A truly marvellous plant, which is described as attaining sometimes to the size of six feet across the apex of the trunk, with ribbon leaves two and even three fathoms long.—Mr. Anderson, the African traveller, in speaking of it says:—“It is only found in one single locality—that is as regards Damara Land, which locality is exceedingly circumscribed. It grows moreover in sandy places, and luxuriates when it can find a few stones where to fix its extraordinary tap root, penetrating often several feet deep, so that it is indeed a work of labor and patience to extract one single plant. I have been thus occupied more than an hour, and even then I have come away with only a portion of the root. The leaves attain a length of several feet, a small portion of the point only being withered; in other respects they are evergreen; they are straight-grained, and you can tear them from top to bottom without deviating a single line from a straight course. Rain rarely or never falls where this plant exists. I have crossed and re-crossed Damara Land throughout its entire length and breadth, but only found the plant growing on that desperately arid flat stretching far and wide about Waalvisch Bay, or between the twenty-second and twenty-third degrees of south latitude. It is most common about the lower course of the River Swakop.”—*Bot. Mag.*, tt. 5368, 5369.

VERBENA LORD LEIGH.—Raised by Messrs. S. Perkins & Sons, Park Nursery, Coventry; crimson-scarlet, yellow eye. *Lord Craven*, produced by Messrs. Downie, Laird & Laing, of Sydenham and Edinburgh. “Decidedly the finest of purples.”—*Florist and Pomologist*, ii. 25.

MONOCHLETUM HUMBOLDTIANUM (*Humboldt's Monochatum*.)—A native of Caracas. Flowers in the stove in November, and rather later. Flowers reddish-purple. *Ibid.*, t. 5367.

The Gardener's Monthly.

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✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

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TREATMENT OF SHRUBBERY IN SMALL GARDENS.

To most persons a garden is simply a plot of ground whereon they may raise fruit, flowers or vegetables,—nothing more. As a subject for taste or the exertion of fancy, few appreciate a garden; and those who do make of their attempts in this way unhappy failures.

We have seen some instances of the kind that were very instructive. One friend we knew years ago,—a kind and good man, who had amassed a considerable fortune in commercial pursuits, and who decided on having a fine country place. He had bought many works, and especially read with delight, and as he supposed, much profit, "Downing's Landscape Gardening." He also determined on having the best professional advice, and sent many miles for one of the best Landscape Gardeners. Ushered into the presence of the great man, his brain active with visions of grottoes and cascades, of belts and masses, and the harmonics of light and shade, color and contrast, and the many beauties he expected to aid his patron in developing, our poor "professional" was somewhat taken aback by the enquiry, whether he "could lay box edgings?" Of course nothing came of that visit. A neighboring butcher, who had run short of employment in his regular "profession" offered his valuable services. His opinions were gratuitously given, and highly appreciated; and the "gardening" went on in gay style. Scores of men were employed in every direction. Rocks were blown out,—ground dug up here, and hauled there,—all the nurseries for miles around were ransacked for the trees "big to make a show," and "straight and purty;" and even owners of neighboring yards had tempting offers for all the trees of "reg'lar shape" they had. Thus things went on for a couple of years. Then our friend got tired. His kind adviser of the butcher persuasion "bought himself a little farm;" and the proprietor proceeded to do

his own "Landscaping." And the way he went about it was this:—He took a hand full of stones, and threw them around. Where the stones fell the workmen dug holes, and there the trees were planted. When he went any where, and saw a pretty tree, it was bought, and set in the holes; and any nurseryman or tree peddler that came along and saw a spot where a tree could be stuck, and had "just the thing for filling up that naked space," was sure to be invited to send it along, with the bill. This was about ten years ago. It is certain that \$10,000 have been spent on that place; yet, if the proprietor can feel any more pleasure in it than ninety-nine hundredths of the community would feel in the wildest wood, which he could have bought in the same vicinity for a few hundred dollars, we cannot understand him.

Sometimes we wish it could be that a talented Landscape Gardener was employed by some of our rich Horticultural Societies, on a mission for the conversion of the heathens and barbarians who know not the true end of gardening. We send out collectors to ransack the earth for all the pretty things to be found. We encourage by premiums good cultivation; and by handsome sums for essays, lectures, and practical discussions; do every thing we can to multiply the mere materials of Landscape gardening, but do nothing for the art itself.

The love for smooth lawns, handsome shrubs, fine fruits and pretty flowers, has progressed amazingly; but design, expression, meaning,—all that we understand by true art in arrangement,—has not progressed. For all that has been done in that line, with very few exceptions, the neighboring tailor, baker or shoemaker, might as well have been employed; and the Landscape Gardener, so called, gained both cash and credit in the mending old soles, or repairing the rents in his neighbor's dilapidated garments.

As we like to give our papers more of a practical turn than one merely enunciatory of principles, which, like our friend who understood Downing's teaching to "follow nature" to mean "plant trees where the stones fall," some may take too literally; we will try to explain by an illustration what we mean: Almost any small suburban residence will afford the example. The place is probably about a half or one acre; the house is in the middle of the lot, and a few yards from the street. A gate opens square with the front door, and branching off on either side, runs around under the windows to the back offices. A few scattered trees are thrown over the ground, and then shrubs stuck in every where;

with perhaps an unfortunate flower-bed, the plants struggling for life in summer with the strong roots of some vigorous Maple tree, make up the entire finish. The whole looks but one thing. There are plenty of ingredients in this horticultural dish to be sure; but it comprises but one pudding for all.

Now there is folly in attempting to carry out on a small place all the principles of Landscape gardening we would apply to a large one. We cannot have grandeur, extent, bold curves, and many other nice points; but we can have something as good, and one particularly—*variety*. One of the greatest arts in laying out a small place, next to endeavoring to add to its apparent size, is to give variety. Indeed, to aim at variety is to adopt one of the surest means to add to apparent size; provided both ideas be kept in view during arrangement. Lawn, trees, shrubs, and fountains, should not therefore be mixed in one incongruous mass; but be each kept separate and apart, and be as much made a distinct feature as possible. A few trees will be required for shade, or for shelter from cold winds, or to close unsightly objects,—other few should be selected for individual beauty, to stand by themselves,—others again for a few large masses of fine, green foliage, or for special beauty at some particular season of the year. Shrubs will be in request as a screen to hide boundary fences,—to make rounded outlines for sharp corners, or to give apparent reasons for curves in walks,—for the cheering beauty of their flowers in large and tall masses at different seasons, as well as to mark a boundary to the lawn. The lawn itself is of course a prime object. It is usually the one chief thing for which a citizen ought to have a home in the country, and should be kept particularly safe from encroachment by other departments. Then the flowers, walks, statues, arbors, vases, or what-nots; if all are in their proper places, and so fixed as to make them distinct and marked features,—prominent, and yet seeming complete harmony by happy transitions with the rest. More variety may be had apparently on a small place than on a large one.

We cannot here enter deeply into this subject, but we will here notice a common error in the encroachment of the shrubbery on the lawn. In the anxiety to preserve "every foot of grass," shrubs are usually scattered every where. The real effect of this is to decrease the apparent size of the place. Others, seeing this error, group their shrubs, but still on the lawn,—not in beds as it were by themselves, with a distinct outline or verge of grass around the shrubs, and no grass between them. In this case the shrubs destroy the proper effect of the

lawn; and the grass detracts from the beauty of the shrubs. Moreover, the cleanly cultivated ground between the shrubs, relieves the eye from so much green, and furnishes an agreeable repose.

No one who has seen the beautiful effects of light and shade in summer, playing through a mass of shrubbery, where the soil is kept raked and clean about the plants, would ever think of letting them stick in the lawn in the usual way.

What we have said of horticultural missionaries, will of course be taken only for what it is worth,—but we would in all seriousness suggest to some of our public bodies, whether it would not be well to offer premiums for the best specimens of taste and design in garden arrangements. It could of course be arranged to suit places of different sizes: for instance, one, two or three acres. The premium should be something handsome,—say a service of plate,—and a committee of acknowledged taste and nice discrimination,—if from a distance all the better,—be carefully selected to examine the plans offered in competition, and to make the awards accordingly.

RENEWING STRAWBERRY BEDS.

It is sometimes made an objection to certain kinds of strawberries, that after producing a few crops they die out, and leave the cultivator without a crop for the ensuing year.

It is worth remembering, however, that all strawberries bear better, and produce fruit of better quality the second year of planting out than at any other period of their lives, and it is probably on the whole better to base one's calculations on renewing beds every second year.

This is more particularly desirable where strawberries are grown in hills,—a plan which is now followed by most who seek the best results,—and which plan is very liable to be attended by the well known enervating effects of overbearing.

Many market growers of the strawberry, whose pecuniary interest generally lead them to the most profitable way of growing fruit, renew their beds every third year. They make a plantation every season, which, after bearing two crops, is destroyed. A new one planted, and an old one abandoned, thus keeps up the annual succession. These are not planted exactly in hills, but in plow rows,—the plants, perhaps, twelve inches apart, and the rows two or two and a half feet. These rows are usually hoe-harrowed continuously through the early part of the season, till the fruit is ripening, when the whole beds are left to the undisturbed possession of the runners and the fruit. In Sep-

tember, after the new ground has been thoroughly prepared, the runners are taken off and set in pans of water, from which they are transferred to their assigned positions in the new rows. All the runners not wanted are then cut off with a hoe or harrow, the plants left to bear one more good crop next season, which is usually the best, after which they are destroyed, and the ground planted again with young plants, or left for the purpose of using for some other crop, accordingly as it may suit the views or convenience of the planter in regard to rotative cropping.

This is a general outline of the practice of some of the best growers we know. They each vary in some particular; but the main point is in the early renewal of the plants as we have stated.

The questionable point would be this. Granting that a third year's crop from the same plants would not be as good as the second year's had been; would the difference be so great as to warrant the increased labor of making new beds? We believe it would. Moreover, the labor is very likely to be overrated; for it costs but little more to make a new plantation than it does to clean out and fix up an old one.

There are some instances, no doubt, where it can be proved best to let a bed remain more than two fruiting seasons, and as long as it will bear well. In the ever varying circumstances under which horticultural rules are to be practised, these anomalies are continually occurring; but we have no doubt, as a general thing, it will be found most profitable and satisfactory to make a new plantation every second or third year.

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.

ORCHARDS—*A., Rochester, N. Y.*—We must repeat, that we regard the plan of not allowing even the merest blade of vegetation to grow in an orchard from the time it is set out until it is old enough to cut up for firewood, as nothing but a "sentiment." We have never seen such an orchard; and if any one can tell us of one, we will go and see it. It would not "pay;" and we need not point out why. The reasons are obvious, and all this,—granting, for the sake of argument, that the trees might be a little better for it.—

First, To make an orchard profitable something must and will be grown on the ground during the first few years of its existence, at the very least.

Supposing we admit cropping an injury, grass crops are least so of any. We do not, however, consider it an injury, unless suffered to mature or under other limited circumstances.

Second, It makes all the difference *how a thing is done*:—An auctioneer was selling a lot of German sausages, of very uncertain age, and got but one bid. "Only fifty cents a barrel?" said the crier, "why they are worth more than that for manure." A city ruralizer took up the idea. He had just bought a farm in the country, and he sent out his ten barrels of sausages, with directions to Peter to drop one in with each hill of corn; which was done accordingly.

The next week formed an awful time in that county. The inhabitants thought all the plagues of Egypt were to be repeated on them. Dogs by the thousand were running here and running there, each with an ancient and odorous sausage;—and if the mysterious hints we sometimes have of the unexplained scarcity of dogs about sausage time, have any weight at all, certainly the dogs now had a full revenge. But the city farmer—he voted sausage manure a humbug of the purest water; and to this day nothing but the strongest barn-yard fertilizer will go down with him.

The fact is, the best of principles are fraught with danger in ignorant hands; and we can point to scores of instances where orchards are "ruined by grass;" and we know many "good orchards under cultivation," in good hands. Instead of principles we had better give you an example for practice:

If your land have a tenacious subsoil, under-drain it; Judge French's or Klippart's book will aid you. Then manure with whatever fertilizer you may decide on as best adapted to your soil and circumstances. Plow deeply, then set your trees 25 feet apart, and sow at once with grass seed and *white clover*. The object now should be to get a *tough sod*. This is obtained by mowing often,—say three times during the season around the trees, and twice at least over other parts of the ground,—leaving the grass to lie where it falls. In some cases, perhaps, the grass may injure a particular tree; that tree may have weak roots, or the grass roots may get extra strong, and run the tree too severely for moisture. In such cases pull the grass out. Common sense will do more for you than the best rules. This is the art of gardening, to apply knowledge to varied and varying circumstances. Perhaps in that case, mulching,—usually a questionable practice,—may help it: just as a mustard plaster, not a comfortable application usually, may

at times be excellent for a pain in the back. The second year you may cut your crop of grass—never allowing it to get too old; in fact, make a rule to take two crops a year—immediately under the trees three times if you wish, and let the grass rot where it falls. When your trees or grass are likely to fail, top-dress: in many cases perhaps annually. Should any one tree, at any time, not seem to grow as well as you would wish under this treatment, haul a load of old vegetable muck, and spread, say two inches deep under the tree, and you will find all as well as you can wish.

STRAWBERRIES—*J. C. W., Fishkill, N. Y.*, asks: "As I am going to plant out a strawberry bed of two thousand plants, I would like you to inform me, through the columns of the *Monthly*, which of one or two kinds it is best to plant, as they are intended for family use. Would you recommend the *Triomphe de Gand*, *Wilson's Albany*, *Hooker's* and *Hovey's Seedlings*, or any one of these kinds separate."

[In a plantation of 1000, for family use, we should plant 250 of each of the four named varieties. The strawberry is a fruit that makes strong local attachments, and it is next to impossible to say in advance what kinds will do best in a particular locality. Besides, for "private use" there is the pleasure of watching the claims of rival contestants, as well as of having something nice to eat. Of the kinds named the *Albany Seedling* is the most certain to produce a large crop of tolerable fruit; *Hooker* produces the best quality of fruit in all you get of them; *Triomphe de Gand* the best, combining quality and productiveness; *Hovey* often excels in every way, but is considered coquettish. This is the general rule with them.]

COAL TAR—*B., Euston, Pa.*, asks:

"Will Coal Tar Dry-rot Hemlock fences?"

[Nothing is worse than Coal Tar for fences. The dark color favors intense heat, which soon causes the wood to crumble away. Rough sawed boards will last as long as the posts, and if these are charred well before putting in the ground, they will endure for a quarter of a century at least.]

NAME OF PLANTS—*Marmont, New London, Ct.*
—Will the Editor please name the flowering shrub and Pine inclosed. The shrub grows in swamps, and is very sweet.

[The shrub is *Fothergilla alnifolia*. No one can name a Pine from a single fascicle, but yours is most likely *Pinus excelsa*.]

BEURRE DE MONTEGENA PEAR—*B. Euston, Pa.*, asks about the season, flavor and general quality.

[*Beurre de Montgeron* is probably meant. The *Album of Pomology* gives it a high character as a September pear, with the flavor of a *Seckel*. Specimens we have seen had, however, an astringency not agreeable.]

Books, Catalogues, &c.

MEMORIAL OF WILLIAM DARLINGTON, M. D.,
by Washington Townsend.

In looking over some pamphlets by the late Dr. Darlington, none seemed to have been dictated more by a spirit of love and affection than his "Memorial of David Townsend," his life-long friend and co-laborer in Botanical science. It was moreover one of the last legacies of his prolific pen,—and the first tribute to his memory, that reaches us, it is very pleasant to note, comes from the son of him whom the Doctor's pen so worthily commemorated.

One of our correspondents, in our last number, referred to a touching sentence in one of the Doctor's works in reference to the flowers of his native county growing over his grave. By the following extract from Mr. Townsend's memoir, it will be seen that more than one has felt the force of the sentiment, and that it has been made to commemorate his services in a very effective way:

"His mortal remains rest in a quiet and shady spot, selected by himself, in the beautiful Oaklands Cemetery, near those of his friends, the gallant Major Barnard, and the brave young Capt. Evans, the patriots and soldiers of former wars, where the hand of affection well caused to be realized his wish, inscribed upon the stone above his grave, that 'the plants of Chester, which he loved and described, may blossom forever above his tomb.'

*'Plante Cestriensis
quas
dilexit atque illustravit
Super Tumulum ejus
Semper floreat.'*"

We may add here, that in our hurried notice of Dr. Darlington we said that the *Darlingtonia (Desmanthus) glandulosa* was a Texan plant. So far this is correct, but it extends, according to Torrey and Gray, through all the Western States from Illinois to Texas.

Californian and Japanese Seeds. List from J. M. Thorburn & Co., New York.

We are much pleased to find by this list so much enterprize apparent amongst our seedsmen. Messrs. Thorburn & Co. deserve great credit for their efforts to introduce these rare and beautiful things to public notice; and we hope to hear soon an appreciative public have bought out their entire stock. Considering that they are imported direct from Japan and the Pacific, the prices are remarkably low, and they afford a rare opportunity for our nurserymen to have new and desirable hardy evergreens at a small cost.

Babcock & Bro., Summerfield, Ill. A handsome general catalogue of 30 pages.

New and Rare Fruits.

BELLE AGATHE CHERRY.—Synonyme.—*Belle Agathe de Novembre.*—This valuable Cherry was obtained from seed, by Captain Thiery, of Haelen, in the province of Limburg, in Belgium; so recently as the year 1852, and the rapidity with which it has spread is a sure indication of its merits and of the estimation in which it is held.

The fruit grows in dense clusters, and is small or about medium size, roundish oval, slightly depressed at the two extremities. It is of the Bigarreau character, but assumes more red on the skin than the Bigarreau. The skin is thick, the stalk long and slender. The flesh is hard and crackling like that of the Bigarreau, and when ripe is of remarkably nice flavor, sweet and sugary, and of a yellow color. The stone is large for the size of the fruit.

This remarkable variety was introduced to this country from Belgium by Mr. Rivers, about ten years since. About the middle of September, when Cherries are gone and forgotten, this sort commences to ripen and as it is a most abundant bearer, the trees when covered with their bright red fruit have a most summer like look, reminding one of June. In size it resembles the Kentish; its flesh is firm, juicy, and sweet, and for the season refreshing and agreeable.

At Sawbridgeworth the birds do not touch it, so that during nearly the whole of October, two tall standard trees there are most ornamental. Whether the birds leave it unscathed because Cherries in October are unknown to the ornithological world is a question to be determined, at any rate the variety is well worthy of cultivation.

A small and very hard-fleshed Cherry called

Tardive de Mans, is probably the parent of the Belle Agathe.

The tree is very hardy and vigorous, and an abundant bearer.—*London Florist and Pomologist.*

THE MUNIER GRAPE.—While in Massillon recently, Mr. James M. Brown called our attention to a new grape which is thought to have originated in that vicinity, and which ripens several weeks earlier than the Isabella. Other gentlemen as well as Mr. Brown, give this grape a character which surprised us, both on account of its earliness of ripening and excellent quality as a table grape, besides which, they say it is a great bearer. From an inspection of the vine on the premises of Mr. Brown, we are sure the grape is as hardy as the Isabella or Concord. All that we could learn of the origin of the grape, was, that the original vine was found growing on the premises of an honest German near Massillon, and the fact of its good qualities having come to the knowledge of several amateur cultivators of the city, it was propagated from, and in every instance fully justified the expectations of its propagators. How such a thing could be, if all this is true, and the grape not fall into the hands of professional fruit raisers, is more than we can account for. It is known as the Munier grape, and we hope our enterprising nurserymen will give it a trial. Here is a chance for Mr. Marshall, of the Prospect Hill Nursery, to get up a sensation fruit, a feat which he barely missed in the case of Hale's Early Peach.—*Ohio Farmer.*

Domestic Intelligence.

TEA IN PENNSYLVANIA.—It was recently asserted in the daily papers that the Chinese Tea plant had been found to thrive admirably in some of the interior lands of Pennsylvania. After the numerous dupes who have been caught by "Australian" Coffee, Tree Cotton and many other ignorant schemes of ignorant men—for we do not regard them all swindles—we did not suppose there were any "green ones" left. But it appears the maxim of the philosopher that there is a "new fool born every day," is about right, and we believe it is a fact that there are parties as a company in treaty for a large tract of land to go into Pennsylvania Tea Culture!!

HORTICULTURE IN CHICAGO.—Since '57, the year noted for good and bad times, quite a sensible difference must have been noticed in this city, in

the quantity of plants exposed for sale. Then the only place (except chance comers from a distance,) was the seed stores where plants or trees could be purchased. '58 was about the same. In '59 the first home establishment for the sale of plants was opened in this city—that is a regular store or depot in town. Now how changed—each prominent street contains one or more. The effect of this is, of course, a much larger quantity sold, and we must hope a corresponding improvement in the character of our home garden.—*Prairie Farmer.*

ASCENT OF PIKE'S PEAK, JULY, 1ST., 1862.—The following letter, by Dr. C. C. Parry, was written to Prof. J. Torrey, M. D., and communicated by him to the "Transactions of the Academy of Natural Science, St. Louis:"

Dear Sir: In accordance with frequent suggestions from you, recommending the examination of the memorable botanical locality known as James', or Pike's Peak, I feel gratified in being able to furnish you with a brief sketch of the results of such an exploration, accomplished on the 1st of July, 1862.

Since Dr. Edward James, of Col. Long's expedition, first visited this alpine summit forty-two years ago, on the 14th day of July, 1820, there is no record of any professed botanist having made the ascent. For this long period, its peculiar vegetation has bloomed unheeded, and the meagre collection of plants made by Dr. James has not been duplicated in scientific herbaria.

It is true, indeed, that of late years, since the rapid settlement of the adjoining region, popularly known as Pike's Peak, various pleasure parties, intent on sight-seeing, and even *ladies* have ventured to this snow-crowned summit, and Mr. M. S. Beach, of Colorado City, our guide on this last occasion, counted it as his third ascent; but by all these its floral treasures were only casually observed, and in no instance, that I can learn, have botanical collections been made.

The truthful and graphic account given by Dr. James, in Long's Expedition, of the ascent of this "highest peak," shows that the route then taken was substantially the same as that followed by us, and is no doubt the most accessible, at least from the northern slope.

That remarkable and interesting stream, known by the expressive French name of *Fontaine-qui-bouit*,* which circles round the gigantic mass of

* The name, originally given to the carbonic acid spring, has been transferred to the stream into which it empties its waters, and is now used exclusively for it.

rocks comprising the main peak, together with its lower range of mountains, pursues a general course east of south, and collects the waters flowing from its northern and eastern slope. This drainage is effected through numerous tributaries, coming more or less direct from the main peak, and cleaving their way through chasmed valleys and *canons* of the most rugged character. Up one of the main forks, which enters the principal stream at the noted locality called "Soda Springs," or Boiling fountain, lies the most direct route for making the ascent. This stream, which ought to receive the historical name of *James Creek*, at its junction with the *Fontaine-qui bouit*, is about six feet in width, but soon contracts its dimensions, as the valley through which it descends becomes narrow; and, farther up, is obstructed by fallen rocks. Winding among these, its swift current rushes along till a sudden descent projects it in the form of rapids and falls. Here, the scenery is wild in the extreme; the torrent, often lost entirely to view among masses of rock, shoots forth in frequent cascades, or is seen through the vista of overhanging cliffs, boiling along its tortuous channels. The trail here is a succession of tedious clamberings from one mass of rock to another, or winding along the steep verge of precipices, and over sloping banks of decomposing granite. Among these rock crevices, grows profusely the elegant flowering shrub *Rubus deliciosus* of James, now just passed out of flower, and maturing its reddish purple fruit. This latter, however, will hardly be found to merit the title of *delicious*, the mass of the berry being composed of large grains, with very meagre insipid pulp. An interesting associate of this common shrub is the *Jamesia Americana*, Torr. & Gr., its neat white flowers contrasting prettily with its wrinkled velvety leaves. Conspicuous among other plants, may also be noticed the *Yucca angustifolia*, now in the full glory of its globe-shaped flowers, of satiny lustre. Here and there, also, in detached localities, *Pentstemon Torreyi*, Benth., sends up its brilliant red spikes.

The trees include the elegant pyramidal forms of *Abies grandis*, here remarkable for the unusual length and breadth of its leaves; *Abies Douglassi*, is also common, associated with *Abies Menziesii*, and *Pinus ponderosa*. Succeeding these at a higher elevation comes the Pine, which must now be undoubtedly regarded as the original *Pinus flexilis*, James. As such it has for several years been recognized by Dr. Engelmann, from the collection of Fendler, and others, though still doubtfully regarded in late European works on Coniferæ. Dr. Jame.

account of this tree being quite meagre, and in some respects contradictory, it may be satisfactory to dwell at some length on its peculiar habit, as exhibited in this its original locality. In general appearance, it very closely resembles our *P. Strobus*, from which it differs mainly in its shorter and stouter entire leaves, more branching mode of growth, as well as in the yellowish brown cones, with peculiar thickened ligneous scales. The cones are inclined to be pendulous. The fertile aments occupy the extremity of the growing branch, extending in the same line with it; but in the second year the terminal bud shoots out, and by its development the growing cones, 1 to 5 together, are gradually deflected. Rarely more than two of these become fully grown, and as a general rule the mature cones fall off at the close of the second year, the opening scales having previously dropped their wingless seeds. These seeds are nearly equal in size to those of the New Mexican nut-pine, *Pinus edulis*, of an irregular oval form, 4 to 5 lines long, and possess similar edible qualities. In addition to other peculiarities of this pine, may be noticed its slowness of growth; thus on a small trunk of $7\frac{3}{4}$ inches in diameter, there were 232 annual rings. Its wood is soft, of fine texture; the heart wood inclined to a yellowish cast. The flexibility of its branches, on which Dr. James founded its specific name, is partly due to the thickness of the elastic bark of the smaller twigs. The bark of the trunk is of a dark reddish-gray color, considerably furrowed, and about equal in thickness to that of our common white pine. The average height of full grown trees is from 40 to 50 feet; they have a rounded outline, are generally low branched, and spreading; in the largest specimens observed, the trunk, a short distance from the surface of the ground, had a diameter of two feet and upwards.

The vertical range of this species, as observed between latitude 38° and 40° W., is from 7,000 to 11,000 feet above the sea. It rarely occurs in large bodies of timber, but is mostly of scattered growth, being associated, at its lowest range, with *Pinus ponderosa* and *Pinus contorta*, and at its upper limits with *Pinus aristata* and *Abies Engelmanni*. Besides *Pinus flexilis*, which alone seems to have particularly attracted the attention of Dr. James, he mentions, in a cursory way, the occurrence of *Abies balsamea*, *A. Canadensis*, *A. alba*, *A. nigra*, and *A. rubra*, these being the then recognized representatives of the fir tribe in eastern N. America. In this enumeration, the very common error of confounding analogous species was committed; an error to which those who simply observe, and do

not collect, specimens, are quite apt to fall into. It is sufficient to state, in this connection, that not a single one of these species is recognized at present as occurring in this part of the Rocky Mountains; in fact, most of the species there met, were, at that early day, unknown to science. Under the names of *Abies nigra* and *A. rubra*, there is little doubt that Dr. James had in view a very puzzling Rocky Mountain species, which, in imperfect material, has frequently turned up in collections from this region, as being usually classed under the names of *A. alba* or *A. nigra*. My attention having been particularly directed to this species by Dr. Engelmann, I became soon satisfied, in pursuing the investigation, that this was in fact a single undescribed species, appearing under different forms according to soil, altitude and exposure; to which, accordingly, I have ventured to affix the name of its actual discoverer, calling it *Abies Engelmanni*.

[To be continued.]

CULTURE OF ASPARAGUS.—We are now past the best of the asparagus season, and congratulate ourselves on having found a *parasite* that will help destroy the asparagus beetle. This spring, some of our fine old beds, nearly destroyed by the beetle last year, were plowed up and turned to other uses. Quite late in the season last year, a large flock of swallows (several hundred) were attracted to the beds of one of our extensive growers, staid some days, and almost cleaned the premises of the insects. Probably this circumstance, after many remedies had been tried, suggested the placing of coops of hens with young chickens on the beds very extensively this summer; and it is computed that this plan will make a difference of at least five thousand dollars in this town of Oyster Bay alone. Hens with chickens, and small birds as gardeners, are better appreciated than formerly. The revenue from asparagus in our town averages from \$15,000 to \$20,000 annually.—R. M. B., in *N. Y. Journal of Commerce*.

TO MAKE TAR.—Procure some good fat pine and cut it in small pieces; fill a large kettle that will contain at least fifteen gallons with the pine you have prepared; then turn your kettle bottom upward on a large stone; place sods around it, leaving a small opening on the lower side for the tar to run out; place a dish under the stone to catch it. All things made ready, build a good fire upon the top of the kettle to dry out the pitch, and if your wood is good you will have from four to six quarts of good tar.

TOMATO TRELLIS.—The *New England Farmer* gives the following sketch of a Tomato trellis any one can easily make. It is a pretty idea, and one which will add beauty to utility in a vegetable garden:



THE *Canadian Agriculturist* gives the following kind notice of our Magazine. The many similar favors we receive from other members of the Agricultural press we always highly appreciate, but this one we quote because we consider it a tribute to that firm love for Horticulture implanted in the American people, which can support handsomely a Horticultural journal in the midst of the direst National troubles that ever fell to the lot of any people:—

The Gardener's Monthly: W. G. P. Brinckloe, Philadelphia; and C. M. Saxton, New York.

This excellent serial continues to pursue the even tenor of its way. The May number contains a variety of papers on subjects of seasonable interest to all lovers of a garden. It has several good illustrations. It is refreshing to see works of this character so well sustained in the adjoining republic in the midst of appalling national troubles, which, thank God, cannot obliterate the love of the pure and the beautiful from the human heart. Price, \$1 50 a year.

AMERICAN LOVE OF FLOWERS.—The love of flowers, and the profuse use of them on all sorts of occasions, are American peculiarities worth noting. There is no city in the world where this amiable fondness for flowers is carried to a greater extent than in New York. At public dinners they always stand in bouquets two feet high, alternating with the monumental confectionery at short intervals along the table, eclipsing your opposite neighbor, and drowning the odor of soup and roast with their perfumes. Young gentlemen graduating at a New York college or seminary think themselves ill-used if their fair friends do not pelt them with a dozen sizable bouquets at the close of their oratorical debut. The ladies of New York must take care that they do not kill an operative favorite some night with their kindness. There must be a ton of bouquets at the Academy on a crowded night. What if they would all be fired at the *prima donna* together! The flowers do their acceptable part to speed the soldier going to the war, and welcome him on his return. When the regiments marched out of town every day, two years ago, there was scarcely a musket in whose grim muzzle did not stick a little bouquet. It was the parting gift of somebody to the poor soldier, and was kept, we will warrant, long past its bloom and odor, reposing at last, perhaps, in a soldier's grave, on the breast of him who had carried it and its tender memories through the flame and thunder of twenty battles. And when the soldier returns a hero, what is the gift that is most commonly offered him, thrust through the open windows of cars at stopping places, stealthily slipped into his hand as he marches along the streets, or thrown at him from second stories by fair spectators? What should it be but that most grateful and significant of all tributes, a bunch of flowers? Kings, traveling through their provinces, have had their paths strewn with roses by obsequious subjects. Those flowers were flatteries. But the flowers which are bestowed upon our returning veterans, and blushing received by them, are proof of the real affection and gratitude with which the people regard them.

The other offices that flowers perform in this country, and to a remarkable degree in New York, such as beautifying front yards and back yards, parlor windows and attic easements, adding to the gladness of weddings, ornamenting the desk of the lecturer, and even the pulpit cushions of churches, etc., etc., are too multitudinous for enumeration. The remarkable fact is, not that flowers are used for so great a variety of purposes, but that they always appear in such overwhelming profusion.

Americans have been charged with a love of gaudiness and excessive ornamentation. They must plead guilty to the accusation in the matter of flowers. But a bountiful nature has covered the land with them, and made their cultivation as easy as that of weeds. It is not surprising that the favorite pattern of American bouquets is huge and flaring. Happily the love of flowers can never be indulged to a harmful excess.—*N. Y. Journal of Commerce.*

ACTION OF MANURES.—The action of manures is often very capricious, but only in appearance. If a manure is not efficacious, the cause is in the ground. If we give to a piece of ground phosphorous, when it requires potash, no effects will be produced; and, on the other hand, if I give potash to land which requires phosphate, I shall do no good. There must exist a certain analogy between the different elements necessary to the plant; and it is when this analogy exists that the elements of the nutrition of plants exert their whole action. Stable dung, the normal manure, does not produce every where the same results. In one soil it raises the productions one-tenth, whilst in another it increases it one-third—a proof that it is not the dung alone which produces the crops, but that it acts in concert with the earth and the nutritive substances of the plants it contains. Different opinions have been given upon the manner of treating dung. Some advise taking it directly from the stable to the fields; others advise that it should be left to rot in a pit. Every thing depends upon the manner in which we employ the dung, and the nature of the soil with which we have to do: *there is not in agriculture one good absolute rule; every thing depends upon circumstances.*—*Canadian Ag.*

HEAT OF CULTIVATED SOIL.—I have been of the opinion that stirring the soil in the spring increased its temperature by letting in the rays of the sun; but I have been making some experiments which do not sustain this opinion. On the 31st of April I took four thermometers and placed them upright in holes in the soil about a foot deep. No. 1 was placed in a hole on the lawn; No. 2 in a hole the same depth on bare land that has not been dug this spring, and No. 3 on land that has been dug; No. 4 I placed in a similar hole in the cold frame—in other words, on land covered with glass. All the thermometers were carefully covered to exclude the air. After they had been in the ground a few hours I examined them, with the following result:—No. 1 (in the grass) marked 52°; No. 2 (land not dug) 51°; No. 3 (land dug) 52°; No. 4

(under glass) 59°. The temperature of the air at the time (5 o'clock, P. M.) was 65; in the cold frame it was 180°. The next morning, between 5 and 6 o'clock, I examined them again, the temperature of the air being 46°. No. 1 marked 51°; No. 2, 52°; No. 3, 50; and No. 4, 56°. (The temperature of the air in the cold frame was also 56°). A few days later, after we had had a good deal of rain, I examined them again. They then stood:—No. 1, 54°; No. 2, 53°; No. 3, 52°. I examined them again May 19th, and they stood:—No. 1, 53; No. 2, 52°; No. 3, 52°. The temperature of the air at the time was 63°.

These results do not show any decided difference in the temperature of the soil. Its uniformity rather surprised me. I thought the grass would exclude the sun, and also evaporate more water, and thus produce cold; but such does not seem to be the case.

I was talking to Prof. Dewey about these experiments, and he asked me to test the temperature of the soil near the surface. I did so this morning in the same soil, but only two inches deep. I covered the thermometer completely with soil. No. 1 (in grass) marked 59°; No. 2, 59; No. 3, 59°—*all the same!* It will be seen, however, that the soil near the surface is about 7° warmer than that a foot deep.—*Genesee Farmer.*

DECAY OF APPLE-TREES IN ILLINOIS.—The climate and soil of Illinois are very favorable to the rapid growth and early maturity of the apple-tree, but we hear much complaint of their being short-lived. W. C. Flagg says, in a recent address:

"The oldest apple trees I have seen in Illinois were not over 60 years of age, and were generally in a very decrepid state. My own trees, the oldest of which are forty years old, have mostly succumbed to the infirmities of age, and the hard winter of 1855 and 1856. Of 100 seedlings and 217 grafted trees set in 1822, about 40 per cent. of each were living in 1862. The longevity of the grafts and seedlings was the same, which is contrary to general opinion."

SELECTION OF FOOD BY PLANTS.—At one time physiologists had a dogma to the effect that plants have no power to select food from the soil, but must take everything that reaches the roots, much or little, good or bad, provided it is soluble in water. Upon this foundation rested a complicated system of vegetable physiology, fragments of which are frequently met with in modern writings, though the system as a whole, never attained a satisfacto-

Foreign Intelligence.

ry shape, To suppose that plants have the power of selection somewhere is a necessity, otherwise they would be unable to maintain their specific characteristics. To suppose that power to exist in the roots is the most simple and natural theory, because it is easier to prevent an entrance of obnoxious substances than to turn them out afterwards.

Most of the systems on the other foundation teach the absurdity that poisonous or unwelcome substances are received into plants merely to be excreted, and excreted merely to be reabsorbed; and this, notwithstanding that such excretions have never been discovered in the soil, nor the excretory organs in the plants.

Chemical analyses of the ashes of plants would seem, at first sight, to settle the matter by showing that different sorts, growing side by side, have their mineral constituents unlike, or in unlike proportions; but great variations are also found in plants of the same species growing in different soils.

A similar difficulty once puzzled mineralogists, but has been satisfactorily settled by modern chemistry, and the solution seems equally applicable to the apparent discrepancy in the vegetable analyses. It is certainly applicable in some instances; but we do not know as the matter has been sufficiently investigated to show that it is so generally. It is, in few words, as follows:—Certain substances have the power of replacing each other, within definite limits, most of which have been already ascertained.

Direct experiment upon the action of the roots is exceedingly difficult, and the results have not yet been decisive.

In France, Mons. Cauvet has recently come to the following conclusions:—

“That roots physiologically sound do not absorb indifferently all substances dissolved in water. That it is only after the more or less complete destruction of the spongiolets that colored substances, such as were used in his experiments, whether poisonous, inert, or not capable of being assimilated, can be absorbed, and that death ensues unless new roots are thrown out; that roots physiologically sound have no power of dejecting substances, whether poisonous or otherwise, which have been already absorbed, but that when the plant survives the first shock, the poison or deleterious matter is carried to the leaves, which die in the order of their evolution, while a minute quantity is eliminated from the sound leaves, together with the water of evaporation.”

NEVER remove a plant from one place till you are ready to put it in another, unless to get rid of it.

THE LATE MR. VEITCH.—The benefits on the whole community of active competition, is well illustrated by a few facts in the history of this gentleman. We have not yet received any particulars of his life from the English journals; but we remember one thing that indicates clearly the energy of character for which he has been distinguished.

Soon after his establishment as florist at Exeter, in England, he found competition in a firm of richer men,—Luccomb & Pince, we believe. It soon became a race who should be most famous for novelties. L. & P., with their larger capital, offered and paid immense prices for new plants; when, however, Veitch did get any thing, his superior skill and knowledge of the practical part of the business enabled him to make more of it. So jealous of this competition did Veitch become, that in order the more perfectly to guard himself from any undue advantage to his opponents of his knowledge, he had his propagating department walled in, and no stranger ever found admittance inside. Thus the contest went on, with varying advantages to either, until Veitch determined not to be outdone, and considering the plan of “waiting for something new to turn up” might be left to his competitors, took to turning things up himself, and boldly organized a collecting expedition of his own. He employed Mr. Thos Lobb to go on a voyage to Brazil, the result of which was very productive in new plants, and very profitable to him. This, we believe, was the initiation of strictly Horticultural expeditions,—a precedent which was followed by the Horticultural Society, in the person of Mr. Robert Fortune, and by others.

Of course such energy as Mr. Veitch's triumphed; and though, we believe, Luccomb & Pince still exists as a very respectable firm, it is freely conceded that Veitch has run a long way beyond it.

We have no doubt that when the history of Mr. Veitch comes before the public, it will be found one of the most interesting to the gardening community every published.

ENGLISH PRICES OF ORCHIDS.—On Wednesday last Mr. J. C. Stevens sold at his auction rooms, 38 King Street, Covent Garden, a collection of Orchids, comprising many valuable species and varieties, the names of a few which we enumerated last week. It may interest our orchid-growing readers to be informed of the prices realized by the more important lots, and we enumerate a few:—

Ærides Fieldingii, several of these were sold at from 2*l.* 12*s.* 6*d.* to 4*l.* each; *Vanda Batemanni*, 2*l.* 16*s.*, 2*l.* 10*s.*, 2*l.* 14*s.*; *Vanda gigantea*, 1*l.* 9*s.*; *Lælia purpurata*, 1*l.* 14*s.*, 2*l.* 12*s.* 6*d.*; *Vanda Lowii*, young plant, 4*l.* 8*s.*, strong plant, 9*l.* 15*s.*; *Vanda suavis*, 1*l.* 15*s.*; Veitch's variety and a *Lælia*, 2*l.* 4*s.*; *Phalænopsis amabilis*, 1*l.* 14*s.*; *Dendrobium tortile* and *Vanda Batemanni*, 2*l.* 18*s.*; *Saccolabium guttatum* and *Ærides odoratum*, 1*l.* 18*s.*; *Saccolabium guttatum*, strong plant, 2*l.* 10*s.*; *Ærides virens* and *Vanda Batemanni*, 3*l.*; *Phalænopsis grandiflora*, 2*l.* 2*s.*; *Vanda violacea* and *Cattleya mossiæ*, 2*l.* 10*s.*; *Cattleya lobata* and *Lælia anceps*, 2*l.* 10*s.*; *Ærides Schroederi*, 16*l.*; *Cypripedium villosum*, 2*l.* 10*s.*; *Odontoglossum citrosmum*, 3*l.*; *Cypripedium caudatum*, 7*l.* 10*s.*; *Phalænopsis Schillereans*, 11*l.*; *Cymbidium eburneum*, 15*l.* 10*s.*; *Dendrobium cœrulescens*, 4*l.* 4*s.*; *Cypripedium Stonei*, 5*l.* 15*s.*; *Cypripedium* sp. nov., 10*l.* 10*s.*; *Trichopilia sauis*, 6*l.*; *T. crispata*, 25*l.* 10*s.*; *Dendrobium lituiflorum*, 26*l.*

GARDENING IN JAPAN.—Mr. Robert Fortune has recently written another very interesting book on Japan. He says amongst the novel agricultural operations practiced by the Japanese and Chinese, none appear to him more curious than that of preparing fresh vegetable matter for manure. This method of economising the weeds and such like natural enemies of the husbandman, seems to be extensively pursued, old men, women and children, being seen employed on every hill-side, cutting grass and weeds for the purpose. Mr. Fortune calls this using "vegetable matter in a fresh state for manure;" but it is not exactly so, for he goes on to describe the process as consisting in mixing the weeds with mud and water, when the compost rots after a very short time, and affords nourishment to the rice crops.

Japan, he says, is of all the countries the most beautiful in spring. "The trees were now clothed with leaves of the freshest green, and many of the early kinds were in full blossom. On every hill-side and in every cottage garden there were some objects of attraction. The double-blossomed Cherry tree and flowering Peaches were most beautiful objects, loaded as they now were with flowers as large as little Roses. Camellias, forming goodly-sized trees, were common in the woods, and Azaleas adorned the hill-sides with flowers of many hues. Here the *A. obtusa*, with flowers of the most dazzling red, was peculiarly at home. *Cydonia japonica* was seen in a wild state creeping amongst the grass, and covered with red blossoms; and several

varieties of Primrose (*P. cortusoides*) were met with under trees in the shady woods."

Of the outskirts of Yeddo he says, "Park-like scenery, trees and gardens, neatly clipped hedges, succeeded each other. The whole country here (the village of Su-mae-yah) is covered with nursery gardens. One straight road more than a mile in length is lined with them. I have never seen in any part of the world such a large number of plants cultivated for sale. Each nursery covers 3 or 4 acres of land, is nicely kept, and contains thousands of plants, both in pots and in the open ground. As these nurseries are generally much alike, a description of one will give a good idea of them all.

"On entering the gateway, a pretty little winding pathway leads up to the proprietor's house, usually situated near the centre of the garden. On each side of this walk are hardy ornamental trees and shrubs of the country, often dwarfed or clipped into round table forms. The beautiful little Yew (*Taxus cuspidata*) occupies a prominent place amongst dwarf shrubs. Then there are the different species of Pines, *Retinosporas*, *Thujas*, and the beautiful *Sciadopitys verticillata*, all duly represented. Plants cultivated in pots are usually kept near the house of the nurseryman, or enclosed with a Bamboo fence. Glass houses are not yet in use for rearing tender plants, instead of which sheds and rooms fitted with shelves are used, into which the Japanese huddles them for shelter during the cold months." Amongst other plants in the nurseries, Mr. Fortune notices Cacti, Aloes, Fuchsias, and other exotics to Japan, which are not yet introduced into China. In one garden he found nothing but varieties of *Acorus* growing in square Nanking pots, and in each pot was a rock of agate, crystal, or other rare stone, many of them representing the famous Fusi-yama, or "Matchless Mountain" of Japan.

POPULAR AND EARLY ROSES AT THE APRIL LONDON SHOW.—First in this department we must name the collections of Roses from the two great nurseries of Messrs. Paul & Son and Mr. William Paul. Imagine plants and flowers equal to about a sixth part of the first National Rose Show contributed by two growers in the months of April, and it will give some idea of the scale on which Roses are now grown under glass at the nurseries. Here too were all the best of what we call autumnal Roses in their very best state of substance and color, showing very careful and very gentle forcing, and the beneficial effect that way of the splendid

weather we have had this spring. Mr. William Paul, of Waltham Cross, put up a row of twelve nice plants, very various in size and shape, but as the large plants were in the centre and the smaller at either end, graduating from the centre each way, this group had a very complete appearance, and was one of the best in the show. The varieties were Vanquier de Solferino, Triomphe de Lyon, Parmentier, Catherine Guillot, Modele de Perfection, Beauty of Waltham, Cardinal Patrizzi, Victor Verdier, Senateur Vaisse, Lælia. Among the cut flowers from Mr. William Paul and Messrs. Paul & Son, the best were Anna Alexieff, Beauty of Waltham, Mathurin Regnier, Marquis de Fancault, Jules Margottin, Charles Lefebvre (with a yellow eye,) Nipheton, Bougere, Souvenir d'Elise (charming,) Eugene Desgaches, President Lincoln (a fine purplish-crimson,) Goubault, Comte de Falloux, Tanerede, Victor Verdier, Eliza Sauvage, President (too much expanded, and quiet in a flare-up state,) Socrates, Devonensis, Clara de Silvan, Madame Julie Daran (with a yellow eye,) Souvenir de Malmaison, Louise De Savoy (a nice canary color, but looking like a smashed saucer in its extravagant expansion,) Louise Peyronney, Oliver Delhomme (most beautiful,) Madame Furtado.—*Gardener's Chronicle*.

METHOD OF ASSISTING SEEDLING FRUITS INTO EARLY BEARING.—Some valuable and interesting additions have of late years been made to the family of Pomona; and, although not quite prolific as her sister Flora, or attracting numerically so large a class of admirers and manipulators in the art, has nevertheless some of her productions of a higher standard, and of more real intrinsic worth. These will doubtless be rising into fame in a further generation, when the productions of her gay sister have been either superseded by her own offsprings, or fail by change of fashion or circumstances to interest and gratify. Orchard-houses have already done much by way of promoting and extending fruit-cultivation. By them also a new field and wider scope are opened up for amateurs, who may, in addition to the cultivation of choice-well-known sorts, raise seedlings and prove their value in a shorter space of time than when planted in the open air. Those who are not in possession of one of these structures will find early fruit bearing enhanced by budding on and near the extreme points of the branches of well-established trees of the same genera, and their value tested in a much smaller space than could otherwise have been done by growing on their own roots.

The plan I adopt here is to get them budded the first year, when the plants are in the seed-leaf; they are potted singly into small pots and grown in heat until they stop their growth. At this stage they are removed to a cooler place for about a month, which gives them a sort of rest, and enables them to be easier excited into growth. When again put into heat, this, with the assistance of a good-sized shift into rich loamy soil, and a brisk heat, soon starts them into a second growth.

As soon as the buds rise freely from the wood, they are taken off and inserted on healthy and strong-growing shoots of the current year; this operation has commonly been performed about the end of August. I have had by the above method buds inserted upon the trees the seed was taken from in less than ten months. Although I have not yet proven any of my own productions to be a *decided acquisition*, I still hope, and the interest is the same. I may, however, state that I have had several quite as good as the parent sorts they were raised from, consisting of Grapes, Peaches, Apricots and Plums; in the latter sort I have some seedlings growing of each year's raising since 1855; these are budded mostly on the Green Gage, which I find answers the purpose better than many other sorts. It gives a chance also of fruit from other sorts when it fails in its own. The year and number are attached to each bud when inserted. In referring to my note-book I find there were ten sorts flowered last spring; but out of these only some three or four set their fruit, and those were imperfect specimens to judge from. The show of fruit-buds is good for this season, and hope to have a greater variety in fruit.—*Florist and Pomologist*.

A BUILDING for the Exhibition of Flowers and Fruits has commenced to go up for the Vienna Horticultural Society. The society having no funds for such undertaking, the Emperor of Austria gave the ground, and six members of the society the funds. At the head of these stands Baron Meyer, with a quarter of a million florins. The necessary balance of one hundred thousand florins was made up by Baron Hohenbruck, Messrs. Gerold and Arthaber, the Count Czernin, and Podosehka the architect. Such munificence is worthy to be recorded throughout the world's horticultural press. Happy the city, where the love of flowers can wield the enchanter's rod and raise such noble emulation.—*Regensberger flora*.

ENCOURAGE toads. They are good friends to gardeners, because they destroy their enemies.

OSMANTHUS AQUIFOLIUS. — This plant and its variegated varieties appear to be perfectly hardy, and are beautiful evergreens, promising some day to rival the Holly, which is saying a good deal. Of course, being so recently imported they have not yet had the actual trial of a severe winter, but we have *seen* them quite fresh after exposure to the trying early frost of last autumn.—*London Gardener's Chronicle.*

SOCIAL ENJOYMENTS.—The following extract from an English paper shows how society can be made very enjoyable without necessarily following the usual frivolities so generally pursued for want of some one with the necessary tact to introduce something better. It is the report of a rural gathering of friends of kindred tastes, who resolved themselves into a "Field Naturalists' Society."

Since our last report of the proceedings of this society, we are glad to learn that it has prospered; the report is highly satisfactory, the present number of members being 550, of which number 515 are ordinary subscribing members. During the past year the society has made twelve excursions to places of interest in the neighborhood, or within such distance that they can be easily reached by train on Saturday afternoon, allowing time for a ramble, and then return home in the evening.—Botanizing seems to be the favorite amusement, prizes being given to those who obtain the best collections of rare plants; and during these rambles many interesting discoveries have been made of some importance to the flora of the country. These excursions are such delightful affairs that we are tempted to give a slight sketch of one of them:—

"The concluding excursion of the season was undertaken on Saturday, September 20th, when upwards of 100 members visited Alderly. The afternoon was one of the very finest of the season, and the walk certainly one of the most gratifying the society ever enjoyed. Pursuing their way first along the lane below the Hough, the plantations were entered at a point in a line with the 'Wizard.' Mounting hence into the upper portion, the highest part was reached ere long, and from this it was easy to descend by the variety of paths that lead to village. After tea, which was partaken of by 120, the Hon. Sec. give a brief *resume* of what had been accomplished during the season, and announced that the winter season would commence on Wednesday, October 29th, with a *soirée* in the accustomed place of assembly, the library hall of the Athenæum. During the walk a new and very

rich locality for the *Schistostega pinnata* was discovered by Mr. H. G. Tippet."

The notices of the natural history of the district, and of the legends and the archæology, will give the proceedings of the society a permanent value. In any case they will serve as memoranda of some of the most enjoyable and profitable afternoons of the years they cover, and will prevent the recollection of them being effaced. Not very much has been accomplished during the year in the way of discovery—the object of the society in going into the fields being less to look after things that are rare than to become familiar with the beauty of common things. How great has been the success in this, the exquisite herbariums and cabinets of insects of the members sufficiently attest.

The most interesting event of the year, as regards novelties, has unquestionably been the visit of the nightingales. The first made itself heard at Wilmslow, near the end of the Bollin Hall Park, on the Manchester side of the railway viaduct. For several weeks, commencing in the early part of May, it sang nightly, and the crowds of people who were attracted by the fame of the bird from distances of many miles became at last quite a trouble to that usually quiet neighborhood. The second of these lovely songsters took up its lodgings in a grove close to the Strines Print Works; and the third in a little wood adjacent to the railway station at Sale. The Strines nightingale was visited by numbers little inferior to those that made their way to Wilmslow, and it was very gratifying to see rough "navies" and thoughtless lads alike attracted by its melody, and earnestly co-operating to preserve the birds from disturbance.

It is very pleasing to contemplate the results of the example set by this society—societies of a similar kind having been formed in Wigan, Bristol, Sheffield, Bradford, Liverpool, and various other places; and we shall be glad to hear of similar societies being established all over the kingdom.

LACHENALIA TRICOLOR.—Amidst the numerous varieties of bulbous-rooted plants whose flowers adorn our greenhouses during the earlier months of the year, few deserve or are better entitled to the gardener's attention than the one named above. Their beautiful spikes of trumpet-shaped red and yellow colored flowers, whether intermixed with other plants or otherwise, are sure to be attractive. To me it is a matter of surprise that their culture among floriculturists is not more universal, as they are not of recent introduction, having been brought into this country from the Cape of Good Hope

in the year 1774: and, unlike the Hyacinth, Narcissus, &c., they do not require to be purchased annually that sound and good flowering bulbs may be secured, as the Lachenalia increases every year in number and strength, if the grower will bestow some degree of care. This induces me to offer a few simple rules for the cultivator as practised successfully by myself.

Towards the latter part of July, I turned them out of the pots in which they had flowered the previous spring, they having been allowed to remain dormant in the same during the summer months; in sorting them, the stronger bulbs are selected, and five of each are planted in a six-inch size pot, commonly known as 32's. Good drainage and clean pots are indispensable. With me they thrive best in a strong loam (not clayey,) but of a silky or soft texture; add to this about a fourth part of dry rotten manure, with a little sand. If the manure be decayed cow-dung, so much the better, provided it is free from worms. They are then placed in that part of a cool pit where the influence of the solar rays act but slightly on them—the object being the present stage of their growth to check too rapid an evaporation in the soil, as frequent watering when there is not an abundance of rootlets to absorb, the fluid would tend to diminish the nutritious properties of the soil. When they have begun to vegetate freely, expose them more fully to the light and air; their rich dark green speckled leaves will then soon begin to strengthen in growth. That a healthy vigor may be preserved during the winter months, place them on the upper shelf of a greenhouse, near the glass, but do not neglect carefully watering them. You will occasionally find water, from drip and other causes, in the centre of the bulb where the flower-stalk is emitted; it would be as well to dislodge the same, although I do not think its presence is of any material consequence. As the flower-spikes become perceptible, allow the pot as much room as your means will admit of for the display of their vigorous foliage. During the blooming season, shade on hot sunny days; this will preserve the color as well as the flowers. When they have ceased blooming, gradually ripen the bulbs by reducing the quantity of water, till you wholly discontinue the supply, when they may be put in any corner of the greenhouse till the period of disturbing them as previously recommended.

The offsets or smaller bulbs may be planted, ten or twelve or more in number, according to their size, in a five-inch or 48-size pot; they will not all flower, yet you may increase your stock of strong-

flowering bulbs for selecting from in the ensuing season. The Lachenalia will submit to be forced, but it is at the expense of weakening both the bulb and the flower spike.—JOHN F. McELROY, *Gardener to W. J. Lancaster, Esq., Stamford Hill, N., in London Gardener's Weekly.*

GARDENING BY LADIES.—A correspondent of the London *Cottage Gardener* describing the residence of Mr. Justice Haliburton—the “Sam Slick” of literary notoriety, says:—

“I paid a visit to these gardens about a year since on the occasion of a fancy fair given for some charitable purpose, and never do I remember to have seen bedding done so well, or so choice a collection of plants brought together in a place of so limited an extent. I was given to understand by a florist of some celebrity, who was present, that the arrangement of the beds and collecting the plants were in the hands of the lady occupier herself.

Their taste for the harmonizing of colors I consider natural in all women of refined education, only unfortunately most of them display their taste in decorating themselves more than in ornamenting their gardens.

But if ladies were to follow gardening more usually than they are apt to do, how much oftener we should see the cheek resemble the Rose in place of the Lily; and how soon, also, we should perceive the lighter tints made use of in decorating the inside of the bonnets. They would soon be aware that glaring coloring was not suited to their complexions so well as the more subdued shades.

Moreover, God has given us health that we may enjoy the blessings He sends, and depend upon it, that where a lady gardener resides it is there the physician's carriage seldom stops.

GRASS TURF must have every necessary attention now, or the consequences will be a burnt-up lawn by July, and the predominance of coarse grasses. Proper care of grass turf now not only preserves its beauty for present enjoyment, but improves the quality, frequent mowing tending to weaken the coarse grasses and encourage the finer kinds, which latter are overpowered and choked out when the strong-growing kinds are allowed too much their own way. Where there is any extent of grass, it is high time the scythe was abolished, for the machine soon pays for its cost in the saving of time, and it is no longer fair to require gardeners to waste their strength on scythe and broom and roller, when the machine performs all three operations of cutting, sweeping, and mowing at once. A sprinkle of guano or nitrate of soda where the

turf is poor will be very beneficial now. Grass newly up from seed to be handled very carefully, and not to be rolled or beaten till after it has been once mown. If appearances are not important, it is a good plan to mow seed grass as soon as it is strong enough, and leave the mowings on the ground. A boy should follow the scythe and rake them back on to the swathe cut; if the machine is used, take off the grass box, and let the knives scatter the cuttings. The new turf will look unsightly for a fortnight afterwards, but it will be immensely benefited by the mulch of its own material.

—*London Gardener's Weekly.*

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

MONTHLY DISPLAY, JUNE 9TH.

The principal attraction of the evening was the large and splendid show of Strawberries, by seven different contributors. Among so many fine specimens it would be almost invidious to state a preference. The Committee however awarded the first prize for a single quart to Mr. E. Satterthwait, for the Triomphe de Gand; and for the best collection 21 varieties, to Mr. Wm. Parry, of Cinnaminson, N. J., whose Essay, delivered at a previous meeting, we shall publish next month.

Messrs. J. McGowan, G. M. Kohl, J. Cook, Anthony Felten, and H. A. Dreer, were among the exhibitors.

Mr. Dreer deposited, for the grower, samples of "French's Seedling," of a beautiful vermilion color, large size and fair quality, in flavor somewhat resembling Hovey's Seedling. It is said to be as early as the May Queen and very productive.

Mr. Kohl had a dish of the Abington Blush, beautiful and excellent.

A dish of large and beautiful Athlete Strawberries from J. Cook, gardener to Rev. J. M. Richards, elicited much praise.

The plants and cut flowers on exhibition were mainly from the hot-houses of Dr. Rush, D. Rodney King, Esq., and Genl. Patterson, whose gardeners, Messrs. J. Eadie, J. Fairbrother, and A. Graham, received premiums for their several displays. Mrs. Catherwood, Mr. P. S. Bunting, and Mr. Satterthwait, each presented a pair Hand Bouquets, and Mr. D. W. White a new Seedling Begonia.

Miss Ella James' contribution of Indigenous plants contained some very rare specimens, which

were much admired. A neat and simple arrangement, in a basket-lid, of growing plants, comprised two Droseras, a Sarracenia, Vaccinium, Gaultheria, Cupressus, and an Osmunda; in addition there were cut specimens of most of the above and of the Xerophyllum asphodeloides.

Our young botanists should be stimulated by so graceful an example to a more diligent study of our wild flowers, ferns, mosses, and other native plants.

Messrs. P. Mackenzie & Son had a collection of cut roses, mostly choice named sorts; also one of Sweet Williams, in great variety, of the most brilliant hues, "worthy," said the Committee, "of a place in every garden." Their show of seedling blotched Petunias was very fine, of every variety of marking, some quite regular, others sportive and grotesque; they were mainly of a reddish-purple on a white ground. Once well established in the character of their variegation, they are very desirable and will be much sought after as bedding plants, in place of or as an addition to the old white standard sort.

A. Felten, gardener to J. D. Whetham, Esq., made an excellent show of vegetables, which received the first premium in each department.

STATED BUSINESS MEETING, JUNE 16TH.

After the usual routine of business, the following gentlemen were elected to membership:—Charles H. Spooner, James E. Caldwell, Donald McQueen, gardener to J. Longstreth, Hugh Graham, and W. Sutherland, gardener to Mr. Hutchinson.

KENTUCKY HORTICULTURAL SOCIETY. AT LOUISVILLE.

The following officers have been elected for 1863:
President—Dr. Wm. Allen.

Vice-Presidents—Dr. Jos. A. Moore, Edward D. Hobbs, Andrew Hoke.

Treasurer—Benjamin D. Kennedy.

Recording Secretary—Ormsby Hite.

Corresponding Secretary—Thos. S. Kennedy.

Executive Committee—A. G. Munn, Chairman, C. C. Cary, Wm. Mix, S. L. Garr, H. S. Duncan, Henry Nanz, J. Sacksteder.

Fruit Committee—Arthur Peter, Chairman, Jacob Johnson, James Stivers.

All communications for the Society should be addressed to the Corresponding Secretary, No. 418 Main street, Louisville.

The Society holds weekly exhibitions of fruits and flowers at Masonic Temple, every Saturday morning, at 10 o'clock.

INDIANA POMOLOGICAL SOCIETY.

We have received and read the transactions of this society with much interest, and give below the results of their deliberations in a

LIST OF FRUITS RECOMMENDED FOR GENERAL CULTIVATION.

Apples.—Autumn Seeknofurther, Yellow Bellflower, Red Astrachan, Early Harvest, Early Strawberry, Sweet June, Trenton Early, Benoni, Early Red Margaret, Maiden's Blush, Rambo, Fall Wine, Belmont, Winesap, Jersey Black, Pryor's Red, Westfield Seeknofurther, Smith's Cider, Rawle's Janet, White Pippin, Newtown Pippin, Canfield (for cider), Gilpin or Little Red Romanite, Willow Twig, White Winter Pearmain, Twenty-ounce Apple or Cayuga Red Streak, and Keswick Codlin (for market).

Pears.—White Doyenne, Louise Bonne de Jersey, Rostiezer, Winter Nelis, Vicar of Winkfield, Bartlett, Flemish Beauty, Seckel, Belle Lucrative, Steven's Genesee, Julienne.

Peaches.—Crawford's Early, Crawford's Late, October Yellow, Serrate Early York, Old Mixon's Cling, Old Mixon's Free, Early Barnard, Morris' Red Rareripe, Early Tillotson, Cole's Early Red, Royal Kensington, Druid Hill, Late Heath Cling, Late Heath Free, George IV., Smock Free.

Grapes.—Hartford Prolific, Diana, Delaware, Concord, Catawba, Herbemont, Clinton.

Cherries.—Early May, Early Richmond, Belle Magnifique, May Duke, Late Duke, Early Purple Guigne, Reine Hortense, Governor Wood.

Strawberries.—Wilson's Albany, Triomphe de Gand, Iowa or Early Scarlet or Washington and Hooker.

Raspberries.—Purple Cane, Catawissa, Ohio Everbearing.

Gooseberries.—Houghton's Seedling, Mountain Seedling, Pale Red Cluster.

Currants.—Cherry, Red Dutch, Red Grape, White Grape, May's Victoria, (for late fruit).

Blackberries.—New Rochelle or Lawton.

Quince.—Orange or Apple.

LIST OF FRUITS RECOMMENDED AS PROMISING WELL.

Apples.—Summer Rose, Fenley, Porter, Dyer, Fall Queen, Jonathan, New York Pippin, Ladies' Sweeting, Broadwell, Winter Sweet Paradise, London Sweet Pippin, Swarr, Green Sweet of the West, Indiana Favorite, Golden Sweet.

Pears.—Beurre D'Anjou, Tyson, Beurre Bose, Onondaga.

LIST OF FRUITS RECOMMENDED FOR FURTHER TRIAL.
Apples.—Moore's Sweeting or Red Sweet Pippin, Cannon Pearmain, Nickajack, Rome Beauty, Northern Spy.

Pears.—Des Nonnes, Passe Colmar.

Cherries.—Belle d'Orleans.

Strawberries.—Austin Seedling, Kitley's Goliath.

LIST OF FRUITS RECOMMENDED FOR AMATEURS.

Apples.—American Summer Pearmain, Fameuse, Lowell or Orange, Fall Pippin, Peck's Pleasant.

Pears.—Easter Beurre.

Cherries.—Yellow Spanish or Bigarreau.

Strawberries.—McAvoy's Superior.

Raspberries.—Brincklé's Orange.

LIST OF PEARS RECOMMENDED FOR CULTIVATION ON QUINCE.

Louise Bonne de Jersey, Duchess d'Angouleme, Belle Lucrative or Fondante d'Automne, White Doyenne, Buffum, Seckel, Steven's Genesee and Flemish Beauty, if doubly worked.

ADDRESS BEFORE THE FRUIT GROWER'S SOCIETY OF WESTERN NEW YORK.

This instructive address, by H. T. Brooks, Esq., late President of the Society, was delivered on the occasion of his retiring from office in January last, and we have had it on file for republication from the *Rural New-Yorker* since that time, only now to find an opportunity. Like all of Mr. Brooks' addresses, it will repay a perusal long after the occasion for it shall have passed away:

HISTORY OF THE APPLE.

Geology, an acknowledged chronological authority, informs us that the order Rosaceæ, to which the apple belongs, is a little older than man. As if conscious of the coming of her lord, the earth blossomed with unwonted flowers, and strewed his future home with golden fruit.

Whether apples early became prominent as food we do not know, but there seems reason to suppose they should at once assume the place they prove so fit to fill.

Solomon among inspired, and Homer among profane writers, 1000 B. C., mention the apple. Joel speaks of the apple-tree 200 years later.

Some Biblical critics assume that since the apples of Palestine are known as indifferent fruit, the glowing descriptions of the sacred writers would better suit the citron, quince, etc., than the apple. Whoever will take the pains to observe the apple-tree in blossom or bearing, must admit that its beauty and fragrance fully answer the description of the Sacred Volume. I can, perhaps, enlighten the pomology of these critics, by informing them that the

present condition of the apples of Palestine is a poor index of what they were 3,000 years ago,—all vegetable products improve or deteriorate with good or bad management.

“And GOD saw every thing that he had made, and behold it was very good.” Such doubtless, were the apples of Adam's time; but the nomadic character of succeeding generations would insure the general deterioration of fruit; yet, in exceptional cases, very good apples may have reached Solomon's day. If the wise man's apples were “Crabs,” when he says, “Comfort me with apples, for I am sick of love,” we must admit he was driven to desperate expedients.

Beyond all doubt, the Crab or Wilding was the prevailing type for several centuries anterior and subsequent to the Christian era. At the bottom of the Swiss Lakes, have been found the remains of a people so ancient as to have no metallic instruments—older than Rome—but among their stores was an entire black and shrivelled Crab apple. The ancient Germans, Tacitus informs us, satisfied their hunger with wild apples (*Agrestia poma*), among other things. The word for apples, in several languages, traced to its root, signifies fruit in general; but as this fruit has appropriated the generic term, it has proved its antiquity, universality and importance. Herodotus, Theophrastus, and Virgil speak of the apple. Pliny treats it largely, and says that the Crabs or Wildings “have many a foul word and shrewd curse given them on account of their sour harshness.” He mentions several improved varieties introduced by Cestine, Manlius, Claudius, and others.

Grafting was introduced previous to this time. Columella, who wrote before Pliny, describes several methods, and Virgil, born 70 B. C., says, (as translated by my friend, Prof. Morse, of Wyoming), “And we oftentimes see the branches of one tree inserted in another without injury,—the apple ingrafted upon the pear,” etc. Christ, also, alludes to grafting.

The Api or Lady's apple is believed to be the Appiana, and by some the Petesia of Pliny.

The dark ages was a dark time for apples, but it is known that Agriculture and Horticulture were kept alive by religious establishments, endowed with lands by princely patrons. Cultivated apples doubtless owe much to their fostering care.

The ancient Celts knew the apple calling it Ab-hail, Aval, Avel, in different dialects.

In 973, King Edgar, “while hunting in a wood, lay down under the shade of a wild apple tree.” In 1175, Pope Alexander III. confirmed to the Mon-

astery of Winchcombe “lands, orchards, meadows,” &c. The fruiterer's bill of Edward I., in 1292, mentions the “Poma Costard,” which was grown so extensively that the retailers of it were called Costard mongers. The Costard is now rarely found in England, but the Winter Pearmain, that has a still earlier record, being cultivated in Norfolk in the year 1200! is still extensively grown and highly esteemed. (See Bloomfield's History of Norfolk). The Pippin, the Romet, the Pomeroyale and Marigold, are very early spoken of. In a note-book, kept in 1580 to 1583, “the Appell out of Essex, Letherecott, Russet Appell, Lounden Peppen, Pearmeane, Grenlinge, Bellabone,” etc., are mentioned. The “Husbandman's Fruitful Orchard,” published in London in 1597, enumerates Pippins, Pearmains, John Apples, Winter Russetings, and Leather Coats.

John Parkinson, who wrote in 1629, was the first English author who gave any thing like a satisfactory account of Early English apples. He enumerates fifty-nine varieties, with “twenty sorts of Sweetings, and none good.” Either he was very sourly disposed, or the best sweet flavors were very coy, and slow to come out, discriminating very unmercifully against the ancients, and in favor of us. Rea, 1665, mentions 20 varieties, 16 of which were not mentioned by Parkinson, from which we conclude that the popularity of some sorts was of short duration, as is the case in our day. Meager, 1670, gives 83, and Worlidge, 1676, gives 92 varieties. From this period there were sorts enough, the world knows. Coxe, in 1816, enumerates 133 varieties; Downing 182; Hogg's “British Pomology,” enumerates 942, and Robert Thompson over 1,400 varieties; and yet our “New American Encyclopedia” takes the trouble to tell us there are over 200 varieties.

It is well known that apples were introduced to this country from England by the first settlers. “The Governor and Company of the Massachusetts Bay in New England,” introduced apple seeds in 1628. Governor Winthrop was granted Governor's Island, in Boston Harbor, April 3, 1632, on the condition that he should plant thereon a vineyard or orchard,—I suppose he planted it. Orchards were planted near Pawtucket, R. I., 1636, and at Hartford, Conn., 1645. Mr. Henry Coleman says, “An apple tree growing in Kingston, Plymouth county, and planted 1669, the year of King Philip's war, bore, in 1838, thirty bushels of good fruit.” Pretty well for a tree 169 years old,—it was a “High-Top Sweeting,” a favorite apple with the Colonists.

The apple, like the pear, is tenacious of life; our best varieties, with their owners permission, will last from fifty to eighty years, and some hardy and vigorous trees have reached at least two hundred years of age.

There was recently standing in Prince George county, Maryland, a Codling" tree sent there by Lord Baltimore over a century ago.

The interest that our fathers took in fruit is further witnessed by the liberal premium of £10, awarded in 1768, by the Society for Promoting Arts, etc., to Thomas Young, of Oyster Bay, for the largest nursery of apples,—the number being 27,123. The famous apples of the 17th century were the Pearmain, Codlings, Catsheads, and Red Streaks,—the Golden Pippin, a small yellow apple of very fine flavor, though well known at that time, reserved its popularity for a later period. Miller, in 1724, records among others, the following apples that are well-known now, Juneating, Summer Pearmain, Sops of Wine, Gilliflower, Flower of Kent, *Go No Further*, which being interpreted, means, "I am as good as you can get."

Our own Newtown Pippin, of world-wide repute, dates back to the same period. The original tree was a seedling which grew near a swamp in Newtown, Long Island, about 1700, on the estate of Girsham Moore, and the fruit was called the Girsham Moore Pippin for a long time. The tree lasted over a hundred years, and finally died from excessive cutting, it having been much resorted to for scions to graft with.

The Baldwin, New England's Favorite apple, originated in Wilmington, near Boston, more than a century ago, (if it had started last year, I don't believe the Yankees would like it so excessively well); it grew on the farm of Mr. Butters, in the part of the town called Somerville, and was known as the Wood-pecker's apple. (the wood-peckers having perforated the tree,) being disseminated by Col. Baldwin & Sons, it was called *Baldwin* apple.

One of our old varieties, the R. I. Greening, tells its own birth-place and color. It deserves its high reputation.

The Spitzenburgh and Swarr grew up on the Hudson, under Dutch patronage. We have borrowed some choice flavors from our neighbors on the other side of this beautiful Ontario—the Fameuse, St. Lawrence, Red Canada and Pomme Grise.

The Red Astrachan, that helps when we want help, having learned, like the Arctic corn, to grow quick, and the Duchess of Oldenburg, ice-bound Russia sends us greeting. Scientific Germany, rich

in treasures of thought, makes us her everlasting debtor for the Gravenstein; while France, in the warmth of old friendship, sent her Reinettes, Nonpareils and Pomme D'Ors.

Italy, with her *Api*, or Lady Apple, weds the present to the past; and old Spain and her monks watch for mankind through the world's eclipse, the Pomological treasures of the East.

Britain, our fatherland, sent us all she had; and we return again more than we received. Our own neighborhood, the favored home of the apple, with just pride points to its Melon and Northern Spy, while the Early Harvest and Rambo own to an American origin. The Pimate I cannot trace. Coxe does not mention it in 1816; Downing records it in 1845. The King of Tompkins County, born in the Jerseys, is an apple eminently fit to be eaten. Hubbardson Nonsuch, of Hubbardson, Mass., and Jonathon of Kingston, N. Y., are not unknown to fame.

The Pippins are as numerous as our celebrated family of Smiths, and seem to glory in being citizens of the world. I find enumerated in "British Pomology" 128 distinct Pippins.

It is too late to ask, "What's in a name?" Judas Iscariot has copyists enough, but no namesakes. The poorest child, even in South Carolina, would sooner go without a name than take Benedict Arnold. And yet, every Paul is not a Saint; nor every Jefferson a patriot.

Apples sometimes take their patron's name, and if the apple be only a good one, that name bids fair for immortality; I would sooner trust the Roxbury Russet than any granite obelisk from New England quarries.

If great names would make apples, what may we not expect from *Gloria Mundi*, the glory of the world; *Nonpareil*, unequalled; *Sine Qua Non*, indispensable; to say nothing of the Kings and Queens.

Among the efficient friends of the apple, beside the old writers alluded to, I will mention Mr. Knight, President of the London Horticultural Society, who assiduously labored to correct the nomenclature, and arouse an interest in the apple itself. The Society over which he presided, as well as our own American Pomological Society, now under the able presidency of Marshall P. Wilder, of Mass., have done, and are doing a work for which the world should thank them. Mr. Robert Thompson, of England, Mr. A. J. Downing, of America, Diel and Van Mons, of Germany, and a host of others, have done a work beyond all praise.

The apple, famous for its many uses, was early

found to make a pleasant drink. The ancient Hebrews made a drink from apples as well as from other fruits. The ancient Romans knew all about it; the African fathers Tertullian and Augustine took time to mention it, if nothing more; while the ancient Britons, like our own Yankee fathers, patronized it liberally. Hogg says that there was a large cider manufactory as far north as Richmond, in Yorkshire, in the early part of the 13th century. The "Husbandman's Fruitful Orchard," 1597, says:—"I have seene in the pastures and hedgerowes about the grounds of a worshipping gentleman, dwelling two miles from Hereford, called M. Rodger Bednome, so many trees of all sorts, that the servants drinke for the most part, no other drinke but that which is made of apples. The quantitie is such, that by the report of the gentleman himselfe, the parson hath for tithes many hogsheds of sydir."

The Britons, I judge, belonged to the "hard cider" party, for we read of a kind "not to be drank till two or three years old." They made a famous drink called *Lambs-wool*, by putting the pulp of roasted apples into ale—victuals and drink, I should say.

The zeal of our Puritan fathers in the cider business is quite remarkable; the cider-mill early became one of the established institutions of New England, and other sections were not far behind.

The specific gravity of the juice varies in different apples. The famous English cider apple, Red Streak, gives a specific gravity of 10.79, and other varieties are as high as 10.85 and 10.91,—these latter may be considered pretty strong cider.

Favorite cider has been sold in New York for \$10 a barrel, and I venture to say that good cider is better than poor wine. The flavor of the cider comes to a great extent from the skin: small apples as having proportionately more skin, make the best cider. If we use cider at all, we will do well to study the best modes of making it, and select the best apples for the purpose; they must be mature, without decay, and must be made up when the warm weather is over, so as not to occasion excessive fermentation; and be sure and put it in sweet barrels.

If we would have good fruit, good culture is indispensable. It is a matter of extreme regret, that the mass of our citizens are so neglectful of what, by general consent, makes the best return for labor and capital employed. Fruit trees need manure, and the right kind of manure. Well-rotted barnyard manure, lime, ashes, charcoal and muck, are the leading fertilizers.

Columella treats of stirring the soil among fruit trees, and it is known that the Romans had tools similar in character to ours, including the spade, rakes, hoes or weeding-hooks, the *marra* a hoe mattock, etc.—and we know they used them sometimes, for Pliny informs us that the success of one cultivator, C. Furius Cresinus, was so great that he was accused before the Senate of practicing magic, and justified himself by the exhibition of his tools, exclaiming, "these are the implements of magic which I use; but I cannot show you the cares, the toils, and the anxious thoughts that occupy me day and night. (See Loudon, p. 24.)

This secret of promoting growth and productiveness by stirring the soil, so singularly divulged before the Roman Senate, eighteen hundred years ago, would seem to be a *secret* now, so far as the owners of many fruit orchards are concerned. But while we stir the soil, let us not destroy the roots by reckless plowing and spading.

In conclusion, I will only say that the apple, in my opinion, outweighs in value all other fruits together. It may not equal the exquisite flavor of the grape or the pear; but as the every day food of the million, I believe it will yet rival the potato itself. Its best varieties in nutritive value equal the potato pound for pound, and can be produced at one-sixth the cost of the potato. My friend, Mr. J. J. Thomas, of Macedon, who generally honors us with his presence at these meetings, estimates, in Patent Office Report for 1850, the cost of producing apples at two and a half cents per bushel. Before seeing his estimate, I had calculated it at from three to four cents, good varieties; they are, therefore, the cheapest of all food for man, and, excepting grass, for beasts. Hardy and less exacting than other fruits; adapted to a wider range of soil and climate; more regular and more abundant in yield; they are God's best gift to man, next to woman. Whoever has an acre of ground, and don't have a tree or two of Early Harvests, (I mention that apple first, as I find from a report of great labor and value, prepared by a committee of the American Pomological Society, P. Barry chairman, that the Early Harvest is more universally cultivated in the United States than any other apple, and best adapted to all localities,) Red Astrachans, Gravenstein, Primates, Fameuse, Pomme Grise, Wagoner, R. I. Greening, Northern Spy, or as many of some other varieties which he likes better, should be sent to the hospital of the incurables. Hoping that everybody will yet have, with an abundance of other fruit, plenty of good apples, I leave the matter with the public.

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THOMAS MEEHAN, EDITOR.
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Hints for August.



FLOWER-GARDEN AND PLEASURE-GROUND.

The latter end 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.

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 two 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.

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.

Transplanting evergreens in August and September, cannot well be done in any case where the trees have to be packed in boxes or bales to reach their destination; as the chances of drying up in such hot weather as we usually get in these months overbalances the advantages of the rapid push of new fibres by the trees at this season.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till the next summer. Last spring, and in the summer when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears so far as to get it into regular shape and form. It will not be forgotten that, to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

When White Lilies, or any other spring-flowered bulbous plants have done flowering, and the stems died away, they should be taken up and reset; the disease in lilies often met with is probably caused by their being too long in one place.

Most of what is to be done now in this department consists of the routine duties of neatness,—tying up, pegging down, removing faded blossoms, collecting and destroying insects, etc.

Many suffer their flowers to produce seed, but this injures the flowering. If it be particularly desirable to save seed of some things, allow only just as much to ripen as will be needed. In some cases, cutting off the flowers as fast as they fade, doubles the season of flowering.

Auriculas, Polyanthus, Pansies, Daisies, and other of these early flowering, half hardy plants, commence their root growth about the end of this month, when the time has arrived for replanting. Good fresh, and yet half decayed, sod from a pasture field, is the best to grow them in. Those who have the advantage of pots and frames, can repot also at this season.

FRUIT GARDEN.

August and September are favorite months to plant out strawberries, with those who desire a crop of fruit the next season. In making a strawberry-bed, a warm, dry spot of ground should be chosen, with, if possible, a good loamy or clayey subsoil. A moist, wet situation is very unfavorable. It is best to subsoil at least two feet deep, and, if the soil is poor, let it be well enriched with well-decayed stable manure. In setting out, take care that the plants do not become dry from the time they are taken up till they are replanted, and see that they do not wither afterwards. Many persons cut off the leaves, if they are afraid of their wilting under hot suns; but a much better plan is to shade. Inverted 4-inch flower-pots are excellent for this purpose; they may be taken off at night. The dews will so invigorate them, that the shade will only be required for a few days. Sometimes in September they may need a good watering; but this should never be attempted unless a thorough saturation of the bed is given; and in a few days after, the hoe and the rake should be employed to loosen and level the surface, which the heavy watering will, in all probability, have caused to bake and become very crusty. Where time can be spared to layer a few plants into 3-inch pots, they are very successfully transplanted afterwards, and much after labor in watering and shading avoided.

Strawberries are best grown in beds about four feet wide, for the convenience in gathering the fruit, and giving them the best of cultivation. About three rows in a bed, and the plants twelve inches apart in the row, will be a good arrangement.

As soon as the fruit has been perfected on the raspberry, the canes that have bore should be at once cut out. Some kinds throw up suckers very freely, and by this means rob one another and cause a very poor crop to be produced the next season. No time should be lost in thinning out the weaker ones, and only enough canes left that will be required to produce a crop the next season. The raspberry ought to be so treated in the summer, that no pruning will be required in the spring but to shorten the ends of the canes. In rare kinds, where it is of more importance to get up a stock of young plants, than to get a crop of fruit, this advice will not of course, apply.

Blackberries will, in the main, require very much the same treatment as the raspberry. They are also very liable to sucker up more than is desirable, and much attention will be required to keep them within due bounds. Neither of these two kinds of fruit should be planted near a lawn, as the roots, if they once get into the grass, are very difficult of eradication and as troublesome as the vilest weeds.

VEGETABLE GARDEN.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seed for future brow-sweatings.

Corn salad is often sowed the end of this month. It does not do well in damp soil or low situation.

Cut down straggling herbs, and they will make new heads for next season.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in eatable condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always claiming the earliest and best, to ensure a perfect stock.

Cucumbers, squash, and other similar plants, often suffer from drought at this season. Cold water does not help them much, but a mulching of half-rotten leaves strengthens them considerably.

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.

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.

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.

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.

HOT AND GREENHOUSE.

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 are.

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 kind 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.

Communications.

TO DESTROY TENACIOUS WEEDS.

BY E. FRYER, GARDENER TO HON. W. H. STARR,
NEW LONDON, CONN.

Your correspondent "B.," of Concord, Delaware Co., Pa., writes, in the June number, of his trouble with the Horse-nettle (*Solanum Carolinense*). It is a known physiological fact, that continued defoliation will kill any plant. For the sake of illus-

tration, a grape vine is quite a hard-lived customer, denude it of leaves, it will put out again, denude or defoliate it again and again, if necessary, and though so very tenacious of life, it must die. Why? The answer is given in the editor's reply to "B." The roots are "thoroughly exhausted in the effort, and the immature leaves have not yet had time to elaborate sap to recuperate this weakened energy." So it is with all other subjects of the vegetable kingdom, the weed as well as the useful plant, continued defoliation will finally destroy them.

The question is, How is this to be done with weeds on a large scale. To pull or dig up every one by hand, would not pay. It can just as readily be accomplished by the horse-hoe, Mapes' Carrot Weeder, or any other such instrument, will do it effectually. Hoed crops, that are well cared for, (*well-hoed*), or what is still better, *fallow*, for one year will effectually eradicate the horse-nettle or any other weed,—the nut grass of the south or the Durfy grass of the north not excepted. But it must be borne in mind that the weed to be destroyed must not be allowed to make even one green shoot, for so much of development will maintain the vitality of the root, and enable it to live for another year. A few years ago, (when we had peace, not war), the *Southern Homestead* offered quite a tempting reward to any one who would discover a means of destroying the nut grass,—the worst weed in the south. The offer brought out as a remedy: "Enclose a space with a good group of chickens for one season, and no nut grass will be found then," or of like substance. The chickens being fond of the young blades of the nut grass, pick up eagerly every little shoot soon as it appeared, by which means "the roots became thoroughly exhausted." The same can be accomplished on a large scale by the Horse-hoe, *timely* and judiciously applied: "a stitch in time saves nine" in this case.

CROPS IN MISSOURI.

BY H. FOSTER, SPRINGFIELD, MO.

Superabundant rains this season, and fruit very fine so far. Our strawberry season is greatly prolonged beyond the usual season. Wheat never better *quality*, though limited in *quantity*; will be ready for the reaper in ten days (from June 4th) at farthest. Quite a breadth of our summer grains put in late: everybody hesitating and afraid to begin; all now looking fine, and promising a rich reward. Wheat, corn and oats each \$1 per bushel; cherries and early peaches fast maturing: some cherries ripe and gone.

PENNSYLVANIA HORTICULTURAL SOCIETY

DISCUSSIONAL MEETING, JUNE 2, 1863.

The President, J. E. Mitchell, Esq., in the chair.

**Mr. Wm. Parry presented the opening Essay on
THE CULTIVATION OF SMALL FRUITS :**

This is not only pursued as a source of pleasure and luxury for the amateur gardener, but is becoming so extensive as to require hundreds of acres of land and thousands of laborers to conduct the operations in supplying our large cities with luscious fruit, and giving profitable employment to a class of persons not able to perform the heavier work of the farm. The wives and children of laboring men, instead of being an expense upon the family, can now earn more towards procuring the necessaries of living than the principal himself. It gives a constant stimulus to industry. Each receives pay for what he does : the feeble one, that picks a pint of berries, earns a penny, which will help to procure clothing and provisions for the comfort of the family. The system works beautifully, and shows how greatly we need the assistance of each other. The little child who carries a quart of berries from the market to the consumer, is not only working for itself and the large grower, but for the rich merchant, who could not otherwise get them so quick and fresh from the producer.

Strawberries being the earliest fruit of the season, are always well received, and give good returns for the labor and attention required to produce them. For many years they were an uncertain crop, from the fact that the finest varieties, such as Hovey, Burr's New Pine, and others, bore pistillate flowers, or those deficient in male organs, and required the presence of a certain quantity of male or staminate plants, producing a sufficient quantity of pollen to impregnate the pistillate flowers and develop their fruit, requiring some botanical knowledge and an acquaintance with the sexual character of the flowers, not generally possessed by those who cultivate them for market. But, since the introduction of the Albany, Downer's Prolific, Lady Finger, Triomphe de Gand, Austin, and other hermaphrodite varieties, bearing blossoms perfect in both organs, and yielding large crops of fruit without reference to other varieties, there is no difficulty in producing any amount required, with proper cultivation, which will now be considered.

The land should be rather elevated, and not liable to excess of water ; a southern exposure, strong loam, such as would be called good wheat and timothy land ; a sward plowed under for a crop of corn, is the best preparation of the soil the year previous to planting strawberries. After removing

the corn in the fall, or during an open spell in winter, let the stubbs be cut off and the ground plowed deeply ; then give a light dressing of manure, broadcast, the essence of which will be absorbed by the mellow earth during winter and be prepared for giving nourishment to the young plants the following season. As soon as frost leaves the ground in March, set out the plants. If the variety be Albany, Iowa, Hovey, or any kind that bears well in beds, mark out the rows five feet apart, and set the plants about one foot apart in the rows, and let them spread evenly over the ground ; the offsets or stools should be fastened not closer than within six inches of each other, and all surplus runners destroyed, same as weeds when they appear : for the value of the fruit will be lessened by an excess of plants, as certainly as a crop of corn would decrease if the quantity of stalks were increased above what were sufficient to give the greatest yield of grain.

If the variety be Triomphe de Gand, Trollope's Victoria, Lady Finger, Peabody, or any kinds that are particularly adapted to hill culture, mark the rows two and a half feet apart, and set the plants one foot apart in the rows, and keep the runners all cut off.

But little trouble need be apprehended on account of weeds, as they are not apt to make much headway the first season after a crop of corn.

During the first winter, the vines should be mulched over with stable manure, straw, leaves or litter of some kind, to protect them from the severity of the winter. The next summer they will yield their first and largest crop, after which it will require much labor to keep the beds mellow and clear of weeds and grass ; and the crops of fruit will diminish rapidly,—and there is great economy in having a new plantation coming on to take the place of the bearing one, so that after the first and best crop of fruit is gathered, no time or labor need be wasted waiting for inferior ones ; but the ground may be plowed, and will be in a fine condition for a crop of wheat, to be followed with grass.

Thus the strawberry will form a part of the rotation of farm crops, coming in after corn and before wheat.

Under the above treatment in beds, we have had 210 bushels per acre, which sold at nine cents per quart, brought \$600.

When it is desired to continue a strawberry bed several years in the same place, the plants should not be allowed to strike root nearer to each other than from ten to twelve inches, so that a small iron-tooth rake may be passed freely among them to loosen the surface and prevent grass and weeds

from starting; mark the rows five feet apart, and set the plants one foot apart in the rows, and, as the plants throw out runners, fasten two on each side of the parent, at ten inches distant, making beds 3 feet 6 inches wide, and leaving 18 inches for alleys. All other runners should be cut off.

This arrangement will average just one plant to a square foot of land, counting alleys, and will give 43,560 plants to the acre, and allowing four hills, occupying four square feet of land, to yield 1 quart of fruit, the acre at the same will yield 340 bushels.

It would be interesting to know the quantity of berries sent to this city during the season; and I would suggest the propriety of this society taking measures to ascertain that fact.

In order to form an idea of what were grown in our immediate vicinity of Moorestown, Burlington Co., N. J., we directed the toll-gathers last year to ascertain from each wagon the amount taken through one bridge over Cooper's Creek, leading to Camden, and it averaged over 600 bushels a day for ten days, one day reaching 700 bushels; so that within ten days over 6000 bushels of strawberries were carried to Philadelphia from our neighborhood through this one channel, and at the moderate price of \$3 $\frac{1}{2}$ per bushel, the farmers carried home with them from the city at least \$20,000.

The above does not include the large amount of strawberries sent to Philadelphia from this part of New Jersey on other roads, and by water, or the amount would be doubled; nor has it any reference to the quantity sent to New York from here by railroad. One farmer, who sends mainly by that line, has forty acres devoted to strawberries, and another received, for one day's picking, sent to New York, \$300. A short time since I visited the large strawberry plantations in Maryland, a few miles south of Baltimore, from whence the earliest strawberries in the Philadelphia market are mainly brought. Several growers there, residing near each other, have from eighty to one hundred acres each devoted to strawberries, and one of them more, and have received for the berries sent to Philadelphia, \$10,000 of a season, clear of commissions. Last season, I was informed, one sold 125,000 quarts at an average of six cents, amounting to \$7,500,—employing 150 pickers, men women and children, to gather the crop.

RASPBERRIES

Commence the latter part of June, as strawberries disappear, and continue in bearing three to four weeks. The choice varieties usually cultivated at the North, where the winters are uniformly cold from fall to spring, are very uncertain here, where

a warm spell in winter will frequently start a flow of sap, only to be chilled again by succeeding frosts, which greatly injures the canes, so that the Philadelphia market is not well supplied, and the fruit sells much higher, nominally, than strawberries, and averaged, for two years past, from fifteen to twenty-five cents per quart. The fruit is really worth more to the consumer than strawberries, as it is much heavier and will go further as a dessert; there is no waste of time and labor in preparing them for use, as the hulls are left on the vines when picking the berries.

Raspberries delight in rich, mellow, moist land; a northern exposure, somewhat shaded and protected by large trees, buildings and fences, to screen them from the direct rays of the sun, which sometimes dries up the fruit before maturity. They are a hard crop on the land, and should have a coat of manure or muck every winter, or they will soon run out by mere exhaustion. They are frequently planted in an old apple orchard, and flourish finely for a few years under the shade and protection of the large trees, feeding upon the decaying leaves and other refuse matter; but what is thus gained in berries is at the expense of the apples, and in a few years the trees show signs of having been deprived of their usual supply of nourishment, and both decline together.

It is proper to form a new plantation every three or four years, so that those that are past their prime may give way for other crops.

In preparing the ground for planting, plow open furrows in the fall, six or eight feet apart, according to the size and vigor of the variety; fill in muck during the winter, so that it may freeze and become mellow by exposure; at an open spell in the latter part of winter or early spring, set the plants 3 or 4 feet apart in the rows. Hardy native varieties can only be relied on as a field crop for supplying the markets generally.

The *Kirtland* is an early variety, perfectly hardy; fruit good quality, bright red, firm, and bears carriage well.

The *Allen Antwerp*, and *Allen Red Prolific* are both large and luscious fruits, and when planted in alternate hills or rows, have yielded abundant crops; but planted separately, the returns have not been satisfactory. There may be a deficiency in blossoms requiring impregnation from other sources, to insure a full crop.

The *Miami Black*, and *Doolittle Improved Black* are hardy and vigorous, and yield enormous crops, yet the color is an objection as a dessert fruit; they usually sell at 25 per cent. below the red varieties:

when the red brought twenty cents, we sold the black at fifteen.

The *Old Purple Cane*, (*Rubus occidentalis*), is perfectly hardy, ripens early, and yields abundantly; producing no suckers, it is necessary to bend down the tops and fasten them to the earth to induce them to strike root and form new plants.

The *Alpine Red*, (*Rubus strigosus*), is very hardy, withstanding the extremes of heat and cold without protection, and very productive.

The *Belle de Fontenay* is hardy and a vigorous grower, but is so addicted to throwing up suckers as to require much attention and labor to keep them thin enough to produce fruit.

Our market is more deficient in raspberries than any other small fruit, and will continue to be, so long as our growers plant the choice tender varieties, such as the True Red Antwerp, Fastolf, Orange, Hornet, Knevet's Giant, and other magnificent fruits for the amateur gardener, but will not succeed in open field culture in this latitude.

After years of experiments, I have discarded most of the varieties generally cultivated, retaining for field culture only the most hardy and productive, yielding about fifty bushels per acre, which have net \$4 per bushel, clear of commissions and other expenses.

The raspberry is uncertain and liable to many casualties that will injure the crop: an excess of heat or cold, wet or drouth, and sometimes causes unexplained, will disappoint the fondest hopes of the grower, especially if he depends on the choice and tender varieties.

The proper plan for farmers is to cultivate largely those kinds which are hardy and yield the most abundant crop; and when the market becomes supplied with them, give attention to the delicate and finer sorts.

BLACKBERRIES.

About the middle of July, as raspberries disappear, Blackberries come forward quite rapidly, and reach their height by the end of the same month, then decrease more gradually till the latter part of August.

There are several varieties that have been distributed at high prices, some of which have but little value.

Newman's Thornless was recommended for having but few thorns, but the fruit is too small and trifling for market.

The *Parsley* or *Cut leaved* is too late in ripening to be valuable for market.

The *Dorchester* is an early variety, canes tall, erect and perfectly hardy; fruit long, shining black,

sweet, firm and bears carriage to market well; and ripening its fruit within a short period, is nearly over by the time the

New Rochelle reaches its height. This variety is large and luscious when fully ripe, and continues in bearing a long time. The price gradually diminishes as the market becomes supplied with peaches and other fruits. Last year the Dorchester commenced at twenty cents per quart, and the Rochelles closed at five cents per quart.

Having ten acres set with the two last named varieties, they yielded me last summer over 650 bushels of fruit.

Having experimented on several kinds of land, from a firm clay to a light blowing sand, I prefer as the most favorable location for blackberries, a light, moist, sandy loam, well under-drained, if water would otherwise stand near the surface. In preparing the ground open the furrows in the fall ten feet apart, and during winter spread muck along them, leaving it exposed to the action of frost. Early in spring set the plants about four feet apart on the muck; corn, potatoes, or other vegetables, may be grown midway between the rows for the first year or two. The roots that follow along the row and feed on the muck, will grow more vigorously than the lateral or side roots, hence the strongest and best plants will come up nearly where they are wanted to produce fruit the following year, but should not be suffered to stand along the rows thicker than an average of one plant to a foot in length. The tops of the young canes should be shortened several times during the summer, so as to keep them at a height of about 2½ to 4 feet, which will induce the side branches to grow vigorously and develop fruit buds near the ground, and thus avoid the necessity of stakes and wires to prevent high winds from injuring the plants.

Blackberries were ready sale last season, averaging about \$3 50 per bushel, although the market was well supplied with many kinds of fruit. They will be likely to sell well for many years to come, as farmers, who have spent years in trying to clear their fields of briars, will not desire to plant them out again. Some patches will be planted on unsuitable ground, dry and hard, and will never pay cost; others, in the most favorable locations, where the soil is mellow and moist, will be suffered to grow at random, becoming large and rank, producing but little fruit.

To insure good crops requires close attention. The canes must be kept thin and headed back during summer, so as to cause the side branches to be well thrown out, which should be shortened in the

following winter or spring to a pyramid form, somewhat resembling a dwarf pear tree, when properly trimmed. A plant thus treated will yield more fruit, and of better quality, than if left to grow tall and slender, as by nature they are inclined to do.

There is no necessity for the market to be overstocked with the fruit, as it pays well to make it into wine. Three quarts of blackberries, and three pounds of sugar, with the addition of a little water, will make a gallon of excellent wine,—a wholesome and delightful beverage, highly recommended for its medicinal properties; worth \$1 while new, and its value increases with age. All the poorer berries, those that are over-ripe and soft, may be very profitably converted into wine at home, and only the finest and most perfect fruit sent to market for sale as a dessert fruit, which will command a fair price.

Several varieties of fruits, ripening at different times, may be grown on the same ground, with greater profit than to devote a separate piece of land to each, for the greatest draught upon the moisture and nourishment in the soil is at the time the fruit is ripening; hence, we commonly plant cucumbers, citrons and tomatoes, which mature at mid-summer, between rows of peas, that come off earlier, all to be followed by turnips and cabbage, which are gathered in the fall.

The largest crop of blackberries that I saw last summer was on the same land that had yielded, about a month previous, an excellent crop of strawberries. The blackberry plants were nicely tied up to wires, supported by posts and stakes along the rows, and the ground completely covered with strawberries, in and between the rows. Had both crops ripened at the same time, they would have suffered greatly for the want of moisture; but as they did not, the exhaustion occasioned by the strawberries was replenished with rains in time to supply the blackberries.

So, I believe, the large fruit trees may properly be mingled together. I have, accordingly, recently set out an apple orchard on that plan. The trees were planted forty feet apart each way, and a row each way between them of the Kentish or Early Richmond cherry, requiring three times as many cherry trees as of the apple. We then planted in each row of cherry trees, and between them, Dorchester blackberries, making them stand at the proper distance of ten feet apart; then planted strawberries between the blackberries, so as to completely occupy the whole ground, yet allow a plenty of room for all, as each requires a different substance from the soil peculiar to its own character

to promote its growth, and the time of ripening the fruit is not the same, each can be as well supplied with light, air, warmth, moisture, and nourishment, as though it occupied a separate piece of land. Strawberries ripen first, and as they disappear, the cherries commence, and very nicely fill up the vacancy that would otherwise intervene between the strawberries and blackberries, and require a continuation of about the same amount and kind of laborers to gather the crop. Last year my crop of Early Richmond cherry brought eight cents a pound at wholesale, three small trees yielding \$30, and twelve others, still younger, gave a profit of \$65. Allowing one hundred trees to an acre, which would afford them plenty of room, it is easy to estimate the amount of yield in addition to the strawberries and blackberries, from the same land.

The President suggested that an excellent beverage can be made from the strawberry. Had received from Mr. R. A. Grider, of Bethlehem, samples of Strawberry wine, made with sugar, of a very pleasant and delicate flavor, the taste and aroma of the fruit being well preserved. It retails readily at 75 cents a bottle.

Mr. Parry, in reply to an enquiry as to the most profitable kinds, remarked, that out of 25 to 30 kinds in cultivation, he found the Iowa, Downer's Prolific and Albany proved the most remunerative on his soil. Triomphe de Gand is not profitable with him.

Mr. Satterthwait. It is one of the most profitable with me.

The President. How long can strawberries be successfully grown in hills? From his experience, would say they failed entirely after the third year. Some have claimed that they would yield well for eight or ten years without renewal.

Mr. Satterthwait. Renews the beds every year. Plants in rows, 2½ feet apart. Tried 5 feet, but prefers the former distance,—as he thus obtains perfect beds 1½ feet wide the first year. The picking is also more carefully done, and the fruit reaches the market in good order, a very important matter. In narrow beds the fruit is also larger and finer. As to Raspberries, he differs from Mr. Parry concerning the finer varieties. Until within two years thought them unprofitable. Now raises quite as large or larger crops of the Fastolf, Hudson River Antwerp, Franconia, Knevett's Giant, Brinckle's Orange, and other tender varieties, as of the common varieties; gets double the price for them, and picks them at one-half the expense. They pay \$400 to \$500 per acre. In winter covers with earth

at little expense. Tried shortening in the canes of the blackberry and lost his crop. Others had the same experience. The best fruit is at the top of the canes. Lets them grow 6 to 8 feet high. Finds currants and gooseberries very profitable.

Mr. Parry. Has little experience in currants and gooseberries. Cutting back the canes of the blackberry causes the side branches to grow more vigorously; they grow as much wood as one long cane, and are more easily reached in picking. Uses neither stakes nor wires. Mr. J. Mitchell, of Burlington, has 40 acres of blackberries, 40 of strawberries, and a large field of raspberries. He does not approve of either stakes or wires. Mr. Satterthwait's method of planting strawberries gives twice as much alley way as his plan. As to picking, it is quite easy to reach half-way across the beds, which are 3 feet 6 inches wide. Each plant makes two runners on either side, at average distances of 10 inches.

Mr. Satterthwait. My alleys are only 1 foot wide, and less room is wasted than by the other method.

Mr. Harrison. By planting three rows of onion sets between rows of strawberries, placed 2 ft. 6 in. apart, a good profit is derived the first season. Has raised at the rate of 6300 quarts of Albany Seedling per acre.

Mr. Satterthwait. Plants in single rows and uses the cultivator with only one tooth in. The second year plows up the ground, and puts in a fall crop. Uses a mule for row cultivation with entire success.

The President. What is the best mulch for strawberries? Used lawn grass on one occasion and destroyed all his plants. Mr. Knox, of Pittsburg, uses straw, applied heavily, so as to completely cover the ground.

Mr. Parry. Prefers long stable manure put on in the fall. By spring the litter is clean and serves as an excellent mulch.

Mr. Satterthwait desired to hear the experience of those who had practiced the system of removing the runners.

Mr. Parry. A neighbor made a careful trial with a great many varieties. The results varied with the varieties employed. The Lady Finger and Diadem bore enormously. Peabody also did well. Hovey failed, almost entirely. Had himself tried three varieties in hills, brought from Maryland, where they are cultivated in large fields, of 50 to 100 acres: the Scarlet, Heart and Stewart, the latter being the one most generally grown there. In the hill system they bore no fruit.

The President. Produced on a patch of Albany Seedling, 20 feet square, the second year from

planting, 57 quarts, many of the berries from 4 to 5½ inches around.

Mr. Satterthwait. Has gathered 150 bushels from ½ an acre.

Mr. Harrison. The yield of all the different kinds varies with the soil. Trollope's Victoria, in a rich very light sandy loam, is one of the most productive of all varieties. In heavy clay is a poor bearer. Peabody does well in stools, but soon exhausts itself by the production of runners. Chilian Pyramidal is very prolific. Oscar a superb fruit, but weak plant and unproductive.

Mr. Satterthwait. The Victoria bears well, but the color is too pale for marketing. Mulching is very important. As soon as the ground is frozen so as to bear a cart well, cover the whole surface completely with long, strawy manure: it enriches, and serves as a mulch next year.

Mr. Schaffer. Mulched all his strawberries last winter except Trollope's Victoria, which came out this spring in better condition than any of those mulched.

Mr. Satterthwait. Of currants the *Cherry* yields as well as any other, and brings twice the price. The White Grape sells well, but there is only a limited demand for white currants. The strawberries sent to this market from Maryland are small and poor.

Mr. Parry. They get but little culture or care; are grown as one in a rotation of farm crops. Has seen, however, one lot of 80 acres in fine order. No sheds are used there to shade the fruit when gathered. With us movable shanties are always employed to shield the gathered fruit from the hot sun.

Mr. Harrison. The Washington growers produce fruit of the very highest quality. Mr. John Saul, of that city, was the first to introduce the fine foreign varieties into this country. One of the latest and best is River's Seedling Eliza.

The President. A friend writes me from England, that River's Eliza is acknowledged to be the best strawberry in Great Britain. Would like to hear something of raspberries: fine large fruit like the Hornet.

Mr. Parry. Has tried the Hudson River Antwerp, and most of the new foreign tender varieties without success, though protected in winter. They do not maintain their growth, and rapidly fail. Has sold them at from 50 cents to \$1 a quart, and even at that price they do not pay.

Mr. Satterthwait. Has experimented seven or eight years with the fine sorts. The first year did not protect in winter, and failed. Second year bent

down the canes and covered with litter; the plants did much better. Third year covered with earth in winter, and succeeded perfectly. Has long rows, several years in bearing, now vigorous and handsome. It is the same with the finer varieties of strawberries, they pay better than the common ones.

Mr. Schaffer. Has had the Hornet raspberry for four years. It bears profusely, and for a long season, and produces also an abundance of young plants.

Mr. Satterthwait. Brincklé's Orange is a poor grower, and soon runs out. Franconia and Knevett's Giant grow well.

Mr. Harrison. Does not approve of frequent agitation of the soil about the raspberry and blackberry. Has seen canes of the Lawton growing in grass sod produce a much earlier, larger and finer crop than those from the same plantation in the garden border. Raspberries are much more prolific and long lived if kept constantly mulched. Long stable manure, applied in the fall is the best covering. It is a question, also, whether the suckers should not be allowed to grow to a certain size, so as to strengthen the main roots, being afterwards cut away unless wanted for planting.

Mr. Satterthwait. Mulching is very successful, but costly. Cited a bed of raspberry plants three to four years old, always productive, which was annually mulched with second crop hay, which, by its decay furnished food to the plant. His own practice is to plow, very shallow, alternately up to and away from the rows, at a cost of about \$5 per acre. Mulching would cost twenty times as much.

The President. The cow pea has been recommended as a green mulch. Is it successful?

Mr. Satterthwait. All crops are benefited by a very shallow surface stirring of the soil. If plowed too deeply it is overdone.

Mr. Hayes. Once induced a farmer, on thirty acres of corn, to stop cultivation after it had attained 2 feet in height, or well above the weeds, and the crop was unusually large. In another case, a field was entirely neglected about the same stage of growth, and the result was the largest yield and the finest corn in the neighborhood.

WESTERN SHORE OF MARYLAND.

BY W. GILLINGHAM, UNION BRIDGE, MD.

I notice in the *Gardener's Monthly*, of June, enquiries by "Regular Reader," concerning the Western Shore of Maryland, as a fruit district. Being located in the region referred to, I will give what information I can on the subject.

The soil between Baltimore and Frederick is of nearly every phase of character, from alluvial deposits to the rugged mountainous slopes. In this vicinity it is mostly blue and yellow slate and limestone, producing oak and hickory timber, with a strip of red slate or shale, just east of the mountains. About thirty miles west of Baltimore, extend a chestnut ridge, parallel with the mountains, rather barren, but favorable for fruit growing. Upon the whole, the region referred to may be considered as well adapted to the production of nearly all kinds of fruit.

Among the winter apples, Hubbardson's Non-such, Newtown Pippin, Hollow-core Pippin and York Imperial, do well here, though producing a full crop but every other year.

In regard to the Allemarle Pippin apple. I was for some years a resident of Virginia, and have seen the fruits in the markets there; know that it is considered a first-class keeping apple; resembles the Newtown Pippin somewhat, and the trees have the appearance and habit of growth of that variety, though I have no intimate acquaintance with the fruit.

THE CITY OF NEW YORK.

BY AN OUTSIDER.

Business called me to the Metropolis. To begin at the wrong end, the word "Metropolis" or Mother City is a misnomer, and smells of arrogance and humbug. We owe these high sounding terms to the combined action of stump-speakers and newspapers, and should resist them. I therefore had better commence over again, and say,—Business called me to New York. That finished, I spent a few days in seeing the sights, particularly in the horticultural line. And if I jot them down here in the *Gardener's Monthly*, I do so presuming that a person, coming like myself from a small place, still with not altogether a neglected taste, is the proper one to receive the truest impression of things in general. First impressions show the striking, bold outlines best, and determine the value of the whole as a whole. Subsequent study and familiarity reveal the particulars and their value, either as distinct small features in themselves, or as parts of the whole. In no instance is this theory more true, I believe, than in landscapes. A truly grand one, or fine one, or perfect one, cannot be passed by the first time without striking the beholder. Charming views of landscape, and bits of picturesque country, however, can be discovered after having been passed by a number of times, without having been noticed.

New York, approached by water or seen from Staten Island, or from Brooklyn Heights, cannot fail to make a grand and fine impression on any pair of live eyes. It is a land and a waterscape of the highest order.

People do not appreciate it, and New-Yorkers themselves enjoy comparatively little what I deem the finest feature of their city.

The bays of Geneva and Naples may have finer skies, and their waters may be bluer. But certain it is that there is not there one-tenth of the life of New-York bay; their trade not being one-tenth of that of New York; and this animation is just the greatest charm of the scene.

People may go to Geneva and Naples at great expense and no little trouble; but was there ever any thing really enjoyed by the multitude which was cheap and was near?

I have seen the suburbs,—they interest me more than the inner *urbs*,—and a goodly number of fine places. I include those in the east side as far as New Rochelle, on the Hudson as far as Tarrytown, also the Park at Orange, N. J., and "the Island." Nature has made the most munificent tenders to her lovers in the shape of sites and beauties, of grand rivers, charming rivulets, sublime rocks and rural plains. Vegetation is not so varied and not rich as farther inland; per contra, the rough sea air gives it a sturdiness which I consider delightful.

Refraining from particulars, I will not mention individual places, however fine they be. Nature and wealth allied could not fail producing some fine work. Considering the greater number of inhabitants and the greater wealth, there should perhaps be a greater number of villas and cottages, particularly when compared to Boston suburbs. But I am told that New-Yorkers have not the fondness of the country in them; nor the steadiness to live comparatively secluded during at least a summer season. I am told they prefer leading a city life, only of a different kind, in Saratoga and similar places, that they trip it on the boisterous ocean to Europe—in short that they crave the excitement which country life giveth not. This may be slander, and I hope it is.

Returning to the city, we find it much less lined with shade trees than would seem desirable. The reigning shade tree here is the *Ailanthus*—quite in the same proportion as *Elmus* rule in New England, or Silver Maples in Philadelphia. Now the *Ailanthus* is a short-lived tree, putting out rather late, strewing the pavement, and the walkers thereon with the dust of its flowers, and these flowers giving forth a smell of a most penetrating kind. A very

large majority, in slang phrase, "hate" this smell; a rather small minority, among them the writer, like it. The minority ought to gracefully give way to the majority. Granted the large majority may be wrong and the small minority may be right,—majority should prevail. Minority may nevertheless see the day, though later, when in its turn, it will become majority; all the more reason for gracefully giving way. But as I am not writing against rebellion, I will cut the *Ailanthus* short off. Let it lie. Let other trees go up in its stead.

Cities should altogether beware of taking to *one* tree. That mistake has been repeated very often. Variety charms the eye, and is a sort of insurance against worms.

What next offers New-York city to the gardener's eye? Lots of stores does it offer for the sale of cut flowers, charming to behold and pleasant to smell. Often, of a winter's day do they all exhaust their supplies, and the cry is still for more. Such is the demand for them, such is the number of parties, such is the increasing fashion of bouquets, floral table ornaments, etc., such is the natural charm of the habit of flowers. Prices are corresponding, and spite of the war,—which New York, strong-backed like Issachar, seems to feel least of all,—florists' stores multiply. That is enough to gladden an American gardener's heart.

Pot-plants, those steady goers, are comparatively little sought after. They are not much sold in stores. Only the poor want them as "country on the window-sill," and they buy them in the markets. Incidentally let me mention, that I saw in Tompkins' Market a *Hermosa* rose, two distinct flowers, back to back, on one calyx.

New-York city excels in creepers, notably *Wistaria*, extending from the basement up to the balconies of the second (first?) floors, and often carried along the bannisters of the steps and across the stoops. A most fascinating way to break the monotony of the blocks.

As to its squares, the least said the better. With such large opportunities as Washington Parade-ground, the Battery, Bowling Green, Union Square, the neglect is all the more striking and culpable. Madison Square, in the very centre of fashionable life, enjoys a picket fence. The City Hall Park is the forcing-pit of loafers and rowdies; at present the most ugly imaginable hospital for our wounded soldiers has been erected there.

There is but one praiseworthy exception. Stuyvesant Square delights the eye with its neatness and good planting.

With so much greater pleasure turn we to New

York's pride and glory, the Central Park.

The idea of a park on so extensive a scale, and the liberality of the municipality in purchasing the ground, characterize the mighty city. Liberality is ever the companion of commerce. No less credit does New York deserve for having had the ability to pick out the competent engineer and landscape gardener for the plan and its creation. The periodically recurring loans of the city towards its completion,—“Central Park Bonds,”—the constant work, winter or summer, war or peace, heighten this merit. The highest praise, however, in our opinion, is due New York and New-Yorkers for having held the Park aloof from politics. This is so rare an exception in the general management of municipal affairs, and *a fortiori*, in those of New York, that any American may justly be proud of the fact. In consequence of it, the highest talent and skill, the best plants and trees at reasonable rates, and steady work by permanent laborers have been secured, and the work has been done in the most efficient way and the shortest time.

If digressions were not under the ban in a horticultural journal, a patriotic pen might justly be tempted to exult over this proof that the body politic of American cities is not yet wholly rotten.

The Central Park has done wonders already, and will continue doing them in an increased ratio. It has given a garden to the poor. It has given an arena to the driving public and greatly weaned the art of driving to taverns. The Bloomingdale road, with its frequenters, has declined correspondingly. It has given a skating pond to old and young New York, male and female, and popularized that healthful winter amusement. It must be a sight worth seeing, that of the great pond lit up by strong calcium light, crowded with skaters of a fine winter night.

The Park has done lasting benefit to the surrounding property. It has anticipated wants, drawing the population northward, increasing the area of improvements and producing a greater choice of houses and less exorbitant rents.

The Park is visited by almost every stranger coming to New York, and awakes in him a train of thoughts which, taken to his own home, put forth blossoms and yield fruit, whether in ornamenting his own homestead, or laboring for the beauty of his city, town, or village, as the case may be. For the good will ever bring forth good, just as the evil will ever produce evil.

The Park is also a school for the Landscape Gardener, and the Engineer. The human mind hails the difficulties which abound in this plot of ground

and delights in overcoming them. Most of these conquered obstacles have hardly left a trace to the beholder, and the general public will never be able to appreciate them. They are no less credit to the engineer and gardener for that.

We abstain from criticism. Where so much calls forth praise, it would look invidious and small to find fault with this or that. We might say the Park is too young, and for shade the Boston Common will be preferable for some years yet; we might say it is rocky and naked, and of a summer's day, in the words of my lady companion, is “one unmitigated glare.” We might also say vegetation does not look thrifty, and flower-beds are wholly wanting. But I prefer saying that time, work and patience will remedy all that; that the Park is of incalculable benefit and enjoyment to generations, present and future, and that it will be the finest and grandest monument of New-York wisdom. May politics never come near it; may New-Yorkers never get indifferent to their Park?

CHLORIDE OF CALCIUM.

BY NOVICE.

The Chloride of Calcium used by your “Subscriber” was not a pure article, which is produced by subjecting fine carbonate of lime, marble dust, or the like, to the action of hydrochloric acid, and evaporating the solution to dryness. It does not give out chlorine gas on deliquescence, is prepared mainly for medicinal uses, by our leading chemists, and is too expensive an article for use as an absorbent in the fruit-room. Nor does it present any advantage, for this purpose, over ordinary caustic or quick-lime.

Though not germane to the subject, I would relate an incident occurring in my own family which accidentally developed its value for a different object:—In the year 1831, during the prevalence of the Asiatic Cholera, Chloride of Lime was generally recommended and employed as a disinfectant. The cellar floor of the house was sprinkled with it, in powder, and saucers of it, mixed with water profusely spread about. That night the rats held high carnival in the ceilings and behind the wainscoting, and next day we learned that the neighbors had received large accessions to their usual family. We were troubled with them no more that season, nor during our three years subsequent occupancy of the house.

[The above communication has reference to an enquiry from a subscriber who had been using the article described in the piece on keeping fruits by

Mr. Nice's method, as described in an Indianapolis paper, recently copied in our journal.—ED.]

WEEDS TREE PROTECTOR.

BY JAMES WEED, MUSCATINE, IOWA.

The following is a record of temperature inside Weed's Tree Protector, and outside in the open air:

		OUTSIDE.			INSIDE.		Remarks.
		Morn.	Noon.	Even'g.			
1862. December	1	12°					
	2	2					
	3	5			10°		Before packing.
	4	6					Finished packing.
	5	8			20		
	6	20			20		Raining.
	7	9					
	8	50			28		Raining.
	9	40			30		
	10	44			30		
	11	50			31		
	12	44			33		
	13	46			31		
	14	25			31		Warm.
	15	13			31		Windy.
	16	26	48°		31		
	17	28	34		31		
	18	19	28		31		
	19	44	50		31		
	20	38	50		31		
21	44	52		32		Rain.	
22	44	52		32		Rain.	
23	44	48		32			
24	28	30		32			
25	28	50		32			
26	28	50		31			
27	22			31			
28	18	32		31		Open.	
29	32	38		31		Open, rain.	
30	38	42	50°			Open.	
31	42	50				Clear.	
1863. January	1	38					Snow.
	2	4	9	32			Open under doors.
	3	7			18		
	4	7			26		
	5	14	28	22	26		Clear.
	6	30	40		28		
	7	30	40		29		
	8	25	32		29		
	9	29	34		30		
	10	29			30		Open.
	11	29			32		
	12	45			32		
	13	18	26	18			Ther. slide frozen.
	14	10	14	12	30		Cloudy with wind.
	15	6			24		
	16	12	26	18	24		
	17	20			26		
	18	32					Open.
	19	34			34		
	20	32			33		
21	32			32			
22	30			32			
23	40	43		34			
24						Warm.	
25						Warm.	
26		31		31		Open.	
27	15			30			
28	12	30		30			
29	12	36	22	30			
30	22			27		Open under doors.	
31	20			30			
1863. February	1	12	2	26			
	2	-4	6	-6	18		
	3	12	2	8	12		
	4	10	20	20	18		
	5	-2		6	17		
	6	-2	27	24	16		
	7	22			18		
	8	28		32	22		Snow.
	9	30			26		Rain.
	10	8			26		

The above record of temperature, as indicated by the thermometer inside and outside of a structure

eighteen feet long and twelve high, which I had put up over a close-set row of peach trees, early in December—constructed in same manner as described in the article you published, except in place of being thatched with straw the frames were covered on both sides with rough boards—the intervening six inch space being filled with sawdust. I am confident from this experiment, that this mode of protection will realize to a certainty all that is claimed for it.

It will be noticed that the mercury did not fall below zero until the 2d of February, when it stood minus four degrees, at 9 P. M. six degrees, and on the morning of the 3d the maximum cold of twelve degrees below zero was reached. We hear it reported that the peach buds are killed, and our own observations lead us to believe they are at least destroyed in some locations.

An advantage of *twenty-four* degrees will surely carry Peach, Apricot and Nectarine buds safely through our "cold spells" and much more can be obtained by proper construction. Ours was put up in cold weather, and not as tight as it should have been.

FINE TREES AND SHRUBBERY.

BY WALTER ELDER, PHILADELPHIA.

The country-seat of General Pleasanton, in the twenty-fourth ward, Philadelphia, is notable for its healthful site, natural beauties, fine views and well grown trees and shrubbery. The pleasure-grounds are finely interspersed with walks and drives, lined with flower-borders. The masses of shrubbery are grown in splendor; those that need it have tarred twine tied round their trunks and branches to support the outer shoots, giving them the form of wide-mouthed urns, and gives them greater elegance when in bloom. *Forsythia*, in early spring, leads the van, with great profusion of bloom; and the half dozen at proper distances from each other, are like luminaries to spread a sunshine gladness over the grounds. Scarlet *Cydonia*, and *Cercis canadensis*, are like fires, in a state of incandescence, to warm up the chilly mornings of spring. Next come *Magnolia*, *Spiraea* and *Viburnum*, with *Lilacs* and *Calycanthus* for fragrance, and *Wistaria* upon arbors; then follow *Philadelphus*, *Deutzia*, *Weigelia*, *Cytissus* and *Robinia*, with *Honeysuckles* upon pillars; *Rhus*, *Hibiscus*, *Jasmine* and *Clematis*, lead far into summer, when the fruiting kinds display their beauties.

The deciduous trees, except two or three, have been transplanted, and in stately growths and fine

forms: they are magnificent and grand; all thrive with equal vigor according to their kinds. How delightful they are growing together, contrasting their various statures, habits, foliage, flowers and fruits—the pale green of Willow lightens up the sombre shade of Horse-Chestnut, and Ash contrasts with Elm and Larch, as Deciduous Cypress differs from Sycamore and Maple: *Gleditsia* and *Gymnocladus* contrast with Oak and Linden; Poplars, proud with heads so high, give shade to Weeping Dwarfs, while *Salisburia* imparts gladness to Purple Beech.

The gorgeous grandeur of the rich and many evergreens, standing erect in their majestic beauties, with their ponderous branches far out-spread over the grassy sod, and in such density that only the mass of foliage is seen, excites our highest admiration. Firs, Pines, Cedars, Junipers, Piceas, Arborvitæ, etc., are equally thrifty, and even surpass our fondest desires as to what we wish trees to be. Well may those leafy temples be called the monarchs of vegetation. While we stood gazing upon them, a feeling of reverential awe crept over our mind, and raised our thoughts far above them, in gratitude and love to the giver of all good.

General Pleasanton attributes his success in the culture of trees to the tan bark he put upon his walks yearly to prevent the growth of weeds. In turning it up in the driest times, the soil beneath it is moist, and the fibres of the trees are above the roots, feeding upon the moist ligneous matter, while other trees are starving with drought. Another thing worthy of note is, the lawn is top-dressed every fall with rotted manure, and its essence is washed deep into the soil by rains and snows of winter, while the grass is in a dormant state, and the roots of the trees luxuriate upon it during the season of growth.

Those who take a yearly crop of hay off their lawns without returning its equivalent in manures to the soil, need not expect such trees as those we have noted. Three of the evergreen trees that stood too near to the walks, were moved fifteen feet back last May: a *Pinus palustris*, 12 feet tall, and nearly as much in diameter of branches; a *Hemlock*, 21 feet tall, with branches 17 feet; a *Norway Fir*, 28 feet tall and branches 20 feet. When moved, their roots were as long as the diameter of their branches, and scarcely a bushel of soil adhering to them,—a very different mode from the "frozen ball" folly, with but a tenth of the expense and far better success. A stranger going over the place now would not observe which trees were moved.

The southeast edge of the pleasure-grounds overlooks a beautiful terraced kitchen garden, well stocked with the choicest varieties of small fruits and dwarf pear trees, of large sizes for their kinds; and beds of asparagus, rhubarb, etc., and ample space for yearly crops of vegetables. At the foot of this garden, and near to the middle, stands the notable grapery, with every eighth row of glass on its span roof in blue glass, and which produced "Grapes without a parallel" last year, so favorably noticed in the *Gardener's Monthly* by Mr. R. Buist, last September. Those who thought that the vines would be ruined by that crop, should see them now; they are in the most thrifty and fruitful state, notwithstanding the dreadful ordeal of mismanagement they have been subjected to since they produced that wondrous crop.

WESTERN SHORE OF MARYLAND.

BY MR. G. P. HATCHER, CATOCTIN IRON FURNACE, FREDERICK, CO., MD.

I notice in your last number an enquiry made by "Regular Reader," of Rochester, N. Y., of the adaptability of the Western Shore of Maryland, between Baltimore and Frederick, as a fruit country. From a short residence,—12 miles N. W. of Frederick,—I am enabled partly to answer his enquiries, applicable to this locality. If there is a fruit country anywhere, it is surely here. On the side of the Catoctin Mountain, near the base and on the slight elevations near by, Peaches,—so I am informed by old residents, one of whom has lived here for 43 years,—have never been known entirely to fail. They state, that the only failures they know of, are that some years the crops are larger than at others. Fruit trees of all kinds and grape-vines seem to flourish amazingly. The Mazzard Cherry and Pear are found wild, and the cherry, especially, grows to a very large size. The number, luxuriance of growth and productiveness of the wild grape; the degree of freedom from mildew of the Catawba and Isabella, it being rarely known, as I am informed, prove that this is indeed the "home of the vine."

The soil is mostly a red clay, and is very productive; much of it is limestone. I am informed by an eminent physician living near by, that he thinks some of his peach trees yielded at least twenty bushels to the tree. It is said, however, that a bank of iron ore dust was made on the spot where the trees were set out. The timber in the valley is mostly the different kinds of oak, and on the mountain, chestnut; though hickory, black walnut, maple, etc., are found. I think I have seen stated that the Albemarle Pippin apple of Virginia, is the well known Newtown Pippin.

Why it is that the elevations in Southern Illinois should have been sought after for raising peaches, and this region, with the advantages of the Washington, Baltimore and other markets, should be so much overlooked, seems indeed strange; and your correspondent believes that, if the public attention were called to it, there are some who would be glad to find so desirable a country for fruit raising, and to reside in, as it is very healthy and well watered. The water is also very good. Persons from Baltimore make this a summer resort.

The Gardener's Monthly.

PHILADELPHIA, AUGUST, 1863.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

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ROSES.

The growing interest in all that relates to Roses induced us, for the benefit of our readers, to make a call on our neighbors, Buist & Son, during the season, for the purpose of making a few notes of the best, having understood that they had made heavy importations of the newest kinds, during the past and preceding year.

Our notes are rather desultory, and we give them in order, with our remarks on them as they were made.

The collection comprised many hundreds of varieties, from the old York and Lancaster to the modern French hybrids. Yet, among even the newest and best, some very old ones are equal to any. *Blanche Lafitte*, for instance, is a beautiful white Bourbon,—and speaking of Bourbons and old varieties, we noted *Coup de Cynthie*, very little if any way distinct from the old favorite Bourbon Queen. It was a little early for Noisettes, which are in best trim in July, August and September, but a good novelty was in bloom, named *Vicomtesse d'Amie*, with a peculiar lilac shade of rose.

The greatest attractions at this time were possessed by the Hybrid Perpetuals. Some of the old ones were still glorious. *Cardinal Patrizzi*, for instance, still maintained its ground as the richest colored, though *Francois Presnier* may succeed in displacing it. *Alexandrine Bachmeteff* yet holds its own, as also does *Caroline de Sansal*, *Jules Margottin*, the very old *Portland Blanc*, and the striped *Perl des Pannachees*. In reference to White Hybrid Perpetuals there can now be no complaint of a lack of good ones. In this collection we noticed *Dr. Henon*, *Virginale*, and *Empress Eugenia*, if not all that could be desired, still good enough to satisfy one of more than moderate expectations.

Another great want has been a class of Hybrid Perpetuals that would do as Pillar roses, by reason of their strong growth and free-blooming character.

Of this class we took particular note of *Madame Frenon*, *Triomphe de l'Exposition*, a kind particularly free flowering, and *Triumph of Beauty*.

Among those that struck us as noteworthy, for some striking peculiarity, were *Madame Place*, which we might describe as a *Hermosa* turned Hybrid Perpetual. *Eeque de Nimes*, though not new, very little known; it is evidently a weak grower, and has not had vigor enough to push into the popularity its beauty deserves. *Marie Egbienewr*, a very double rose, and opening well for all. *Naomi* had a marked conical shape, and was of a fine blush, but with a slight purple tinge that gave its blush rather a guilty look, yet it is a splendid rose. *Volta* was a H. P. of the form and color of *La Reine*, but with beautiful pencillings of a darker color, that had to be examined closely to note its improved beauty. *Henry IV.* was beautifully cupped, a style of rose now growing into great favor under the lead of the *General Jacqueminot*. *Ardoise de Lyon* was a very pretty mottled rose, and Mr. Buist remarked that it was one of the very few roses that seemed absolutely to luxuriate in great heat. Then there were *Triumph of the Fine Arts*, a beautiful color, *Souvenir de Henry Clay*, *Camille de Rohan*, *Nivette du Bois*, *Victor Verdier*, *Glorie de Santenay*, and *Crystal Palace*, that no collection should be without, though with some, the ragged outline of the full blown flower of the latter will not be its best recommendation.

Of the low growing, leafy-flowered hybrids,—a class which are well adapted to bedding purposes,—and of which *Youland d'Arragon* may be named as a type, *Jean Hackette*, an old rose, but not near as common as it deserves, well reminded us to make this observation.

We find great room for improvement in the class of Perpetual Moss Roses. There are none equal to the single-flowering *Adelaide*. *Salet* is probably the best. Here were two other kinds, *Gloire d'Orient* and *Leon Hanon*, both so much like *Salet* that we could fix on no distinction. *Madame Edward Ourey* is different from *Salet*, but not much so.

We could not pass the Scotch briars, with their neat foliage and innocent flowers, without a regret that they were not perpetual bloomers.

In the herbaceous borders near the roses, we noticed a beautiful *Erythrina*, labelled *E. herbacea*, which Mr. B. said bloomed continually through the season, and was hardy. It is a native of Texas.

In the houses, the Pelargoniums, which have one large house exclusively devoted to them, were nearly out of bloom, but we noted those still in blossom. *Paul* and *Virginia*, *Linnè*, *Phæton*,

Stuart Low, The Sweep, and Reine Hortense, are beautiful and distinct varieties. There was also a very curious looking form of the common Pelargonium, called *Wilmer's Surprise*, which Mr. Buist said made an admirable bedding-plant.

The Fuchsias were scarcely in bloom, but one which was out, called *White Lady*, was, we think, the best white we have seen.

Before taking leave of the Rose subject, we would remind our amateur readers, that to have plenty of bloom through the season on their rose bushes, the flowers should be cut off as fast as they fade; and the larvæ of the rose bug should be gathered off as fast as they appear: a few hours per week altogether, will preserve their favorites from the pursuits of these skeletonizers, who otherwise will soon make of one's bushes a "Phantom bouquet," the possession of which will not be a matter of boasting with the proprietor.

EXHIBITORS.

In looking over the names of those who usually exhibit at our Horticultural Shows, we rarely see among them those of any of our principal nurserymen or amateurs.

On enquiry, we find that almost the whole of them have at various times exhibited, but have retired from the field on account of some fancied slight or injustice at the hands of the societies.

All this is very much to be regretted. The great good that these societies do to gardening generally cannot be disputed; and to the successful exhibitors they are in the highest degree profitable, whether the exhibitor be a nurseryman, who has to attract public attention to the novelty or superiority of the article he trades in; or an amateur, to whom it is of great importance that he encourage in his gardener a spirit that aims at excellence in every thing he grows or does for his employer.

We are not of those who admire the Samsonian practice that tears down the beautiful temple, destroying alike friend and foe together, our own selves among the number, because we would be revenged on some one or something that offends us. There may be spirit in such a course, but there is no wisdom; and, in the case of Horticultural societies, the most strenuous efforts usually fail to bring about this universal ruin. We have known of many instances during the last twenty years, where, in order to retaliate for some injury real or imaginary, an exhibitor has resolved to "take nothing more to that place;" but we have never known one instance where the existence of the so-

ciety was seriously menaced by this course. or where more injury did not result to the exhibitor than to any one else.

There is always a class of men in the world to whom a few dollars are of far more importance than any honor or credit that accompanies the effort to obtain them; and such men wish for nothing more than the withdrawal of exhibitors of superior skill, and a nice sense of honor and justice, so that they may rush in with their second rate stuff, and secure the "prizes" offered for the "best" exhibited; and it is one reason why we so often see such wretched specimens of taste and skill at Horticultural meetings, that those who could do better usually hold back on the occasion.

A moment's reflection will often show that supposed slights are generally imaginary. The writer has figured as extensively as an exhibitor in times past as any one. He has often felt that his contributions have either been passed over entirely in unmerited silence, or received a premium far below what they were evidently entitled to. The first impulse is usually to resent such "injustice;" but we have usually found on reflection, that the judges could not have had any reason for personally slighting us, and, moreover, we have frequently found that we have been worst "hurt" by men whom we knew to be warm personal friends.

As long as men's tastes and opinions differ, there must be these strange decisions. They should be accepted as part of our fate, and rank among the bitters and the sweets of life. Societies are, no doubt, at times to blame for selecting as judges inferior men; but this is often the fault of exhibitors themselves, for when the exhibitions are expected to be poor, only a poor class of judges care for the honor of having any thing to do with them.

We make these remarks at this time in view of the fact that the season of exhibitions is about opening, and we would see them supported by our leading horticulturists,—and for their own interest alone,—much better than they have done.

We have labored earnestly, from the first commencement of this journal, in behalf of nearly all the chief Horticultural and Pomological societies in the land, without even a card of thanks to ourselves, and, with two exceptions, without a dollar for advertising them entering the pockets of the publishers, and very frequently without even a copy of the proceedings after the exhibitions have been held; but we cannot avoid expressing surprise at the apathy of the horticultural public to their own interests; and contrasting it unfavorably with such names as Sir Edward Antrobus, Lord Lovelace, T.

T. Drake, Duke of Sutherland, Lord Scarsdale, C. Hanbury, R. Barclay, Earl Dunmore, Miss Burdett Coutts, Queen Victoria, among private growers; and Veitch, Paul, Lane, Frazer, Low, Cutbush, Henderson, Turner, and other nurserymen, whose names have adorned the London prize lists for many years past.

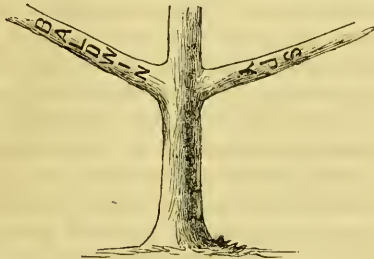
MARKING TREES.

Every one has felt the want of some effective plan of marking fruit trees in the orchard. All sorts of labels have been tried; and most persons depend for strict accuracy on having a manuscript list made of the trees as they are numerically arranged on the ground. This is very well; but as one has to have the list always about, or sometimes likes to graft several kinds on one tree, the plan is so far objectionable.

Now it is a well-known fact that the scratch of a pin on the bark leaves a scar, that endures almost with the life of the tree. We were shown a Beech tree recently, in Delaware county, by a middle aged man, with the initials of his father still plainly traceable, which were scratched on the bark when his father was a boy. The same can be done with fruit trees, as we believe we saw suggested some years ago in an agricultural journal, but which, like a good many good ideas that yearly float over the great sea of the agricultural press, has nearly been forgotten.

We saw some trees a few days ago that had been marked in this way, and it reminded us that the idea was worth resuscitating.

The annexed cut will explain the idea clearly:



The letters of the name are scratched on the under side of the branch, and the letters one above the other. In the case we saw, there were two kinds on the two arms of the tree—Baldwin and Northern Spy. The main or central stem being of another kind, the name of which we do not now remember.

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.

MYRTLES, AND EVERGREEN LEAVES—*P. H., Janesville, Wis.*—I know that our Coniferous Evergreens lose their leaves, and unlike deciduous plants, do not get others in the place of the lost ones. That seems not to be the case with evergreens which do not bear cones. Do they follow the law of our general trees or shrubs?

I have some Myrtles in pots. In the ratio of new leaves on the new shoots do the old leaves on the old shoots wither and fall. How can I stop it? They threaten to get a bare inside. If I trimmed them, they would get a hedgy look, as they are of stiff habit, consequently trimming will not do for me. What shall I do?

Do Myrtles want shade? Which is their native country?

[Almost all evergreens, Pines included, lose their old leaves annually. The true Pines (*Pinus*) particularly, lose their leaves in August, remaining green about fourteen months. The Spruce Pines (*Abies*) keep their leaves several years; a healthy Norway Spruce generally will have a few green leaves on branches eight years old.

There is no way to keep a Myrtle bushy, without being "bunchy," but to pinch out strong shoots when young, and let weaker ones grow. When it gets altogether too large, it can be cut back to a few inches of the ground, and suffered to push out again.

Myrtles prefer shade. In Italy it forms a great portion of the undergrowth of the oak woods, especially of the Cork Oak. It is considered a native of Italy, but it is probably naturalized there. It was well known to the Greeks. Its name is of Grecian origin, and incorporated into the Latin language, a proof, to our mind, that the plant itself was not at one time known to the Latin race. The plant is most probably of Persian origin, and has travelled west with civilization.]

ÆNOTHERA LAMARKIANA.—A "*Philadelphia Reader*" writes:

"Reading in the English journals glowing accounts of this new plant, I imported some seeds last year, and now have it flowering—to my disgust. I find I have it growing by the thousand already on all the waste lots near me, and have been trying

to eradicate it for years past from my grounds. Is it not a duty of our Horticultural journals to expose these frauds before we suffer so by them. At any rate, allow me to warn your readers against this new humbug."

["Horticultural journals" would have enough to do were they to make a practice of watching the errors of their contemporaries. For our part, we have our hands full with our own deficiencies. So far as *Æ. Lamarkiana* is concerned, our correspondent is mistaken in considering it *the same* as the wild one common around Philadelphia, *Æ. biennis*, although it is near enough to it to divest it of much interest to an American. The flowers are a trifle larger, and the plant a little bushier than the common form of Evening Primrose. DeCandolle, who adopts it as a species on the authority of Seringe's manuscript, probably never saw the plant himself. Torrey and Gray, much better authority on American plants than any foreign author, class it as a mere variety of *Æ. biennis*, and scarcely that.

The English have as strong a disgust for American botany as they have for every other thing American; and if our wealthy amateurs would have, as they should have, the works of standard American botanists on their book shelves, instead of relying for their information on "foreign journals," they would not so often declaim against "humbugs," or need the protection of "our Horticultural journals."

COFFEE AGAIN.—Our Massachusetts friends seem annoyed that Illinois should have all the glory of Coffee growing. A Newburyport paper says that a citizen grows it as successfully as the Tomato or Lima Bean. They are above the Illinoisians in this, that while they are satisfied with "Australian" Coffee, the Bay Statesmen are going into raptures over their success with the real thing;—for of course it is a success; has not Mr. Somebody raised a crop?

With Pennsylvania Tea and Massachusetts Coffee, cannot Maine furnish us with Bananas, and New Hampshire and Vermont all the other luxuries of the tropics?

ORCHARDS—A., Rochester, N. Y.—"Pray excuse me for again troubling you on the orchard question, on which you have already given your views fully, I confess; but I fear I have not understood you clearly in the reply you gave last month to my enquiry.

From your remarks, and with what I have ob-

served myself, I am fully satisfied that to leave a young orchard with nothing but the fruit trees in for years, especially with the usual recommendation to plant very young trees, will never pay. I want to set out about 5000 Standard Pears this fall, with a view to profit, in north-eastern Ohio, and I want to start on the right track. The most part of northern Ohio is not favorable to very heavy hay crops; but the country in which my land is situated between Elyria and Massillon, is excellent grass land, and also seems to suit the Pear well.

The point of my present enquiry is,—Do you recommend one of the two crops of grass you would take from land to remain as a mulch only the first season? or for every season?"

[Our recommendation, to let the grass lie, after cutting, was intended to apply only to a few feet or yards *around each tree*. This we would continue until the tree had got strong roots of its own, sufficient to keep the grass from growing very strong immediately under the tree, and may be for two, three or five years, according to circumstances. In some instances it may be best to let the grass be after cutting for the first over the whole lot; but, after that, except under the trees, we should endeavor to secure two crops of hay per year, and keep the grass in good order by light annual top-dressings.

We are glad to find our remarks are creating so much interest among fruit-growers. If mere growth were alone concerned, and that growth of the most succulent description, such as we look for in cabbages or beets, there would be no question but that heavy manuring and continued surface scratching would be the best mode of culture. In "manured and cultivated ground," a tree will be as large in eight years perhaps as by our system it would be in ten. There is no dispute about the wood growth, or an occasional large fruit that that will carry off a premium at a State Fair; but for a balance of health, longevity, regular productiveness, from the trees, and nett profit over a series of years from the land occupied, you need not fear being on "the wrong track" with our plan."

NEW VEGETABLE—*Callirhoe involucrata*.—In an account of the plants of the Rocky Mountains, collected in 1820, by Dr. E. P. James, read before the New York Lyceum of Natural History, in 1826, the roots of this plant are said to be "large, fleshy, and edible." As the plant is now in cultivation for its beautiful flowers, it is worth recalling to mind its edible character also, and have its merits in that way tested. We should suppose it best to

sow the seeds in rich soil in March, and if any incline to flower the season, pluck the flowers off. If sown in fall, it will probably flower the next spring early, and the roots become too woody for use. Those who have but a few seeds on their plants this fall, had better sow a few as soon as ripe, so as to have blooming plants the next spring.

SPORT IN THE FUCHSIA.—A. M., Paducah, Ky., writes:

"I herewith inclose a piece of the Fuchsia President, with two distinct kinds of flowers on the same stem. Is it a common thing for the Fuchsia to sport so?"

[The two flowers were very distinct. It is unusual. We never knew of one before like this.]

VARIEGATED-LEAVED TREES.—We will prepare a list for our Geneva correspondent next month.

Rare and New Fruits.

RUSSELL'S PROLIFIC STRAWBERRY.—We have received the following notice from Mr. Edward S. Todd, of Auburn, New York:

As there has been many notices of this new berry recently, a hill of which was exhibited at the meeting of Fruit-growers at Rochester, N. Y. in June last; and, as there is no little inquiry as to its merit, as a berry worthy of cultivation, I have taken a little pains to collect facts with reference to its history, productiveness and excellence.

Mr. H. Russell, of Seneca Falls, Seneca county, N. Y., originated this berry, in the year 1856. It is both a pistillate and a staminate. It has proved to be one of the greatest triumphs in the production of strawberries of which we have any knowledge. It is properly named, for it is the greatest bearer I ever saw. About the time when strawberries were ripe, I went fourteen miles on purpose to see these berries, as they were growing in the garden of Mr. Russell. I then visited Mr. George Clapp's bed of berries, in the city of Auburn, N. Y., who has sent vast numbers of plants to all parts of the Union; and I was perfectly surprised to see such heaps upon heaps of them, as the leaves were turned up for the purpose of looking at the berries. They stood in hills, and I counted on a single hill, twenty-six large stems, all as full of delicious fruit as they could hang,—many of them were as large as hen's eggs.

I had seen representations of these berries two

inches in diameter, which were said to be more delicious than any other berry; and I was not quite willing to believe it. But, when I came to see with my own eyes, and handle with my hands, and to taste with my palate, I was induced to exclaim, as did the Queen of Sheba, when she saw the glory and munificence of Solomon, "The half had not been told me," of the excellence of this berry. It is fully 100 per cent. more productive than Wilson, and for size and flavor, it excels any thing in the line of strawberries I ever saw. A single hill, which was taken up with a quantity of soil, and carried to Rochester, to the Fruit-grower's exhibition, had on it *two hundred and twenty berries*.

Another feature of this berry is, it appears to be less affected by frosts in winter than most others, and it has maintained its good qualities, without the least deterioration, ever since it commenced bearing. I may be allowed to state here, that these berries are now selling for 20 cents a quart, in the Auburn market, while other standard sorts sell for only 10 cents a quart.

BOYDEN'S SEEDLING STRAWBERRY.—We have the following note from Mr. W. S. Carpenter, of New York:

Have you heard of the great strawberry? I refer to "Boyden's Seedling." It was exhibited at the great Show at the *Am. Agriculturist* on June 18th, 15 weighed one pound, and Mr. Boyden brought a half bushel of these monstrous berries, and a plant with about 50 monster berries on it. It was conceded by all that this berry beat the world. It is of the pine family, and of first quality.

[Why has not some better name been given it? It will probably get confused with Boyden's Mammoth.]

New or Rare Plants.

BUCHANAN'S PETUNIAS.—We have recently seen flowering in the open ground a lot of these varieties. They are handsome; but one, marked No. 7, was very different from any Petunia we have ever seen, being white, and profusely covered with a net work of carmine veins.

IMPATIENS BICOLOR (*Two-colored Balsam*).—Native of the Island of Fernando, at an altitude of 4,000 feet. It appeared in bloom at Kew, in December; the flowers have a white mouth and purple lip. Bot. Mag., t. 5366.

NOTES ON THE CONIFEROUS PLANTS OF JAPAN.

By John G. Veitch :

Abies Veitchii—A species found at an elevation of 6000 to 7000 feet on Mount Fusi-yama. It forms a beautiful tree from 120 to 150 feet in height, with small and very glaucous cones. The Japanese say that the species is peculiar to this mountain.

Abies bijida : *Saga-momi*—A variety distinguished from others growing in this country, by its leaves being divided at the point into two sharp points. It does not grow wild in the districts to which Europeans have access, but is largely cultivated in gardens. The trunk of this tree is remarkably straight, attaining a height of 80 to 100 feet. As a timber tree it is invaluable to the Japanese.

Cunninghamia sinensis : *Liu-kiu-momi*—Not seen in a wild state, but is commonly planted in gardens, where it forms a graceful tree with drooping branches, from 20 to 25 feet in height.

Juniperus japonica—A dwarf shrub, found plentifully in most parts of Japan.

Juniperus rigida—A handsome low tree, growing from 20 to 30 feet in height. It is found on the Hakone mountains, and at Atame on the east coast.

Nageia cuspidata—A small tree said to be found in a wild state on the island of Jesso. It is cultivated in the gardens of Yeddo.

Nageia japonica : *Nagi*—A handsome tree, growing from 30 to 40 feet in height. It is found on the mountains of the interior, and is cultivated in gardens.

Pinus densiflora : *A-ka-matsu*—One of the commonest and most useful Pines of the country. It grows to a height of 40 to 50 feet, and is found in abundance throughout the empire. Both resin and ink are prepared from this and the following species:

Pinus Massoniana : *Wo-Matsu*—A Pine somewhat similar to the latter, but attaining a greater size. It is planted to form avenues of immense length, and is the favorite species for horizontal training, for which the Japanese are famous. As a timber tree it is of great value.

Pinus Koraiensis : *Wo-mi-matsu*—A tree extensively cultivated in gardens, but not found in a wild state in the localities to which foreigners have access. Its foliage short and very glaucous, forming a very pretty and distinct tree.

Pinus parviflora : *Goyo-matsu*—A species nearly allied to the former. It is found on the Hakone mountains, and is largely cultivated in gardens. It grows from 30 to 40 feet in height. There are several species and varieties of Pines in Japan not yet determined by botanists. One of the most striking of these is the *She-ro-y-matsu* of the Japanese, the foliage of which is variegated.

Podocarpus Maki : *Maki*—A small growing tree, planted in gardens for ornamental purposes.

Podocarpus japonica—A species discovered by Dr. Siebold. I have not met with it wild, but it is found in gardens.

Podocarpus macrophylla : *Fou-maki*—An ornamental tree, growing from 20 to 30 feet high.

Retinospora obtusa : *Hinoku*, or *Tree of the Sun*—This is one of the finest Conifers found in Japan. It forms a beautiful evergreen with dark green foliage. It is highly valued by the Japanese both for its timber and for ornamental purposes. It grows plentifully on the mountain ridges of the island of Nippon, and reaches a height of 50 to 60 feet. This will doubtless prove hardy in England, and will be a great acquisition to our gardens.

Retinospora pisifera : *Sa-wa-ra*—A tree growing from 20 to 30 feet in height. Its foliage is of a lighter green than that of *R. obtusa*, and glaucous on the entire under side. Its habit is also more pendulous. It forms an elegant tree, but does not grow of sufficient size to be valuable for timber.

Retinospora squarrosa : *Siuobu hiba*—A small-growing tree with glaucous foliage. Commonly planted for garden ornament. There are several species and varieties of *Retinospora* which assume very distinct characters, but which are as yet undetermined by botanists.

Sciadopitys verticillata—The Umbrella Pine, or *Koya-Maki*. This remarkable tree, which derives its name from having its leaves in whorls at the end of the shoots, is the only species of the genus known in Japan. It is a pyramidal tree with dense foliage, found abundantly on the Koya ridge of mountains in the province of Kiusiu, and on other mountains. Its greatest height is probably 70 to 80 feet, and a tree of this size constituting a perfect pyramid, clothed to the ground with branches, form one of the handsomest specimens to be imagined. This and its varieties, one of which is variegated, are great favorites with the Japanese, and are largely planted in their gardens.

Taxus cuspidata : *Ara-ra-gii*—A dense growing shrub with dark green foliage. It is found at the foot of Mount Fusi-yama, on the Hakone mountains, and on the island of Jesso. It grows from 15 to 20 feet high.

Thujaopsis dolabrata : *Asu-naro*—One of the most distinct and beautiful trees in Japan. It is found on the Hakone mountains and on other ridges in the north of Nippon, and also on the island of Jesso. It forms a most elegant tree, from 30 to 40 feet high. Its branches are somewhat pendulous, and loaded with foliage of the darkest green color. This

species and its varieties are extensively cultivated for ornamental purposes, and highly prized by the Japanese.

Torreya nucifera—A tree growing from 23 to 30 feet in height, found on the hill-sides in the south of Japan. Its foliage is of a dark glossy green color, and the kernels of the nuts are dried and eaten by the Japanese.

Veitchia japonica—Little or nothing is known of this genus. The accounts given by the Japanese are so conflicting as to make it impossible to place reliance on their statements.

Biota orientalis: *Siva*—A bush 18 to 20 feet in height, largely planted by the Japanese for forming hedges and for garden ornament.

Biota pendula: *Ito-sugi*—A low-growing bush, found in a wild state on the Hakone ridge of mountains. Its pendulous habit makes it a great favorite with the Japanese, who plant it largely in their gardens.

Biota japonica: *Isa-bo-hi-ba*—A low, compact bush, only met with in gardens.

Cephalotaxus drupacea: *Kay-a*—A tree growing from 35 to 40 feet in height, on the hill-sides in the south of Japan. The kernels of the nuts of this tree are eaten by the Japanese.

Cephalotaxus pedunculata, *C. umbraculifera*: *Inu-kay-a*—These species were not found growing wild, but cultivated in gardens.

Cryptomeria japonica: *Su-gi*—The Cedar of Japan, and probably the commonest Conifer in the empire. It is found in all parts, from Nagasaki to Kakodadi. All soils seem to suit it. On the Hakone mountains, at an elevation of 6000 feet, it clings to the rocks with scarcely any soil to nourish it. There are numerous garden varieties, some of which have variegated foliage.—*London Gardener's Chronicle*.

NEW VERBENAS.—The *London Field* notices the following as among the chief acquisitions of last season:

“Last year sent forth among verbenas, two which are so conspicuous by their manifold excellencies above the common run, that we wish to give them most prominent notice. One called *Lord Craven*, the other *Lord Leigh*. Lord Craven is a seedling, raised by that indefatigable firm of florists, Messrs. Downie, Laird & Laing, whose London nursery is at Forest Hill, near Sydenham. It was unanimously awarded a first-class certificate by the floral committee of the Royal Horticultural Society, who describe it thus: ‘A remarkably fine verbenas, producing bold, well-filled trusses of large, flat, well-

formed flowers, an inch in diameter, of a rich velvety puce-purple self-color.’ That description is all very well as far as it goes, but it does not go far enough. The description of color is all right enough if you can fancy puce-purple, but suppose we say purple suffused with blue—that is nearer; and then the flower is relieved by an eye, small but clear, of white. The whole makes up a bloom of remarkable richness and effect. We can vouch for all this, for we had the pleasure of seeing his lordship on the day he first opened his eye at the nursery, Forest Hill, and afterwards the whole flower later on. Lord Leigh, whose acquaintance we formed at the Rose Show at Birmingham, is an attractive flower, particularly to the lover of high colors. It is crimson-scarlet, brightened, beautified by a full, clear, yellow eye. It is considered superior to Foxhunter, who up to this time stands champion.

TRICHOMANES ANCEPS.—A very handsome fern, shown at a recent meeting at South Kensington by Mr. W. Bull, of Chelsea, who had imported it under the name of *T. magnificum*. It is one of the finest of the genus, remarkable for the size and flatness of its fronds, and for their seeming breadth of surface, although they are really in the most perfectly developed parts divided on a quadri-pinatifid plan. The fronds are of a deep olive hue, with more or less of metallic lustre, which is well shown off by their smooth glossy surface.

PYCNOSTACHYS URTICIFOLIA (*Nettle-leaved Pycnostachys*).—A native of Mount Zamba, in tropical Africa, where it was found at an elevation of 3,000 feet, and will probably flourish in our greenhouses. Bloomed at Kew in January; flowers dark blue. *Bot. Mag.*, t. 5365.

THUNBERG'S TRICYRTIS (*Tricyrtis hirta*).—Sent by Mr. Fortune from Japan to Mr. Standish, who believes it will prove a hardy border plant. The flowers are purely white, spotted with reddish-purple. *Ibid.*, pl. 140.

SALVIA SPLENDENS JUNGGERI.—*Salvia splendens* is almost universally known as the most beautiful of its tribe for decoration. The present variety is a desirable improvement by its dwarf growth, more prolific bloom, and earlier expansion of its flowers by some weeks than the original one. In the latter respect it is of vast importance to the flower-garden, in which it is suitable for groups or any any ornamental purpose. For pot culture it is unique for conservatory decoration in fall.

LOBELIA PAXTONIANA.—Fancy to yourselves the old favorite annual *Nemophila insignis* (the blue-edged *Nemophila*) formed like a lobelia, and you have "*Lobelia Paxtoniana*." Hence it will be at once perceived how very beautiful a little gem it is. The white of the body of the flower is pure and clear, whilst the edge is decided and distinct in its markings, the blue being most cerulean. Sir Joseph Paxton was early in noticing its merits, and so impressed was he with its many excellent points, that he requested Mr. Gordon to name it after himself, and thus its name, "*Paxtoniana*." Sir Joseph's beds in his flower-garden were almost all edged with it last year, and all floral judges who saw it, both there and at the Crystal Palace, were unanimous in their acclaim that it was a lucky find for Mr. Gordon, and would bring him solid advantages.

DIANTHUS HYBRIDUS "MAIRE PARE."—*New White Mule Pink.*—After the production of the well known *Dianthus hybridus floribundus*, two new varieties were raised, the first a striped-flowered one, the second the present form, a beautiful white-flowered kind. Its growth is equally free and vigorous, about the same height and habit, with large terminal clusters of bloom, freely produced in successive months, forming a fine plant for border groups or pot-culture in late conservatory and greenhouse decoration. Its adaptation to the flower-garden, throughout the bedding season, will prove a welcome addition to summer and autumn display.

COLEUS ATROPURPUREUS (*nigricans*).—New introduction from Java. It resembles in no way *C. Verschaffelti*; the foliage is flat, smooth, and of thick substance, even in its style of growth, and more robust and branching, and of hardier constitution than the last named species.

RYCOSTACHYS URTICIFOLIA.—The seeds were received from Dr. Livingstone. It is figured in the *Botanical Magazine*, t. 5365, where Sir W. Hooker thus speaks of it:

"This species is at once distinguished by the large, nettle shaped leaves, the broad ovate, almost pyramidal shape of the spike or verticillata, and the rich color—a fine mazarine blue—of the corollas; and these spikes are more than 1½ inch broad. We are much mistaken if this does not become a great favorite in our gardens ere long, and not the less so from its being one of the many interesting discoveries of our most distinguished of African travellers."

It is only necessary to add that the plant flowered in January of the present year; and as it was gathered at an altitude of 3000 feet, affording the greatest probability of doing well in an ordinary greenhouse, there can be no doubt of its proving a valuable addition to the few beautiful flowers of that season of the year.

RETINOSPORA LEPTOCLOADA.—A beautiful new Coniferous shrub or small tree. It assumes an erect pyramidal outline of growth, from 2 to 6 feet or more in height, branching proportionately wide at the base, and tapering upwards to a gracefully attenuate point. The color of its growth is a fine silvery glaucous tint. In its native habitat it is described as a "densely branched compact pyramidal evergreen shrub, furnished with branches down to the ground, and thickly covered with numerous horizontal branchlets and small spray, densely clothed with imbricated more or less glaucous foliage, and thus presenting a beautiful object."

This fine shrub is quite hardy in England.

RIUS GLABRA LACINIATA.—This pretty variety, described in "*Darlington's Flora Cestrica*," as having been discovered near West Chester, by Mr. R. Kilvington, the well-known botanist and nurseryman of Philadelphia,—is figured in a recent number of the *Revue Horticole*, having been sent to France, by Mr. Elias Durand, of the Philadelphia Academy of Natural Sciences. M. Carrière, in describing it says it has the "joint merit of beauty with novelty, and is the prettiest thing he has seen for a long time, on account of its elegant foliage."

ABIES POLITA.—Recently received in England from Japan. The *Revue Horticole* says it is so much like the *moriuda* in general appearance, that it might be readily mistaken for it at a first glance. It is, however, very distinct and beautiful. According to Siebold it constitutes vast forests in the tall mountains of the Isle of Nippon, and the Kurile Islands.

Domestic Intelligence.

POSTAGE ON SEEDS, CUTTINGS.—Owing to great inconvenience, from the instructions of the Postmaster General, reducing the extreme weight of packages of seeds, cuttings, roots and scions, sent free by mail, to twelve ounces, the former limit of thirty-two ounces has been re-established.

ASCENT OF PIKE'S PEAK, JULY, 1ST., 1862.—The following letter, by Dr. C. C. Parry, was written to Prof. J. Torrey, M. D., and communicated by him to the "Transactions of the Academy of Natural Science, St. Louis:"

[Concluded from page 212.]

I continue the narrative of our ascent. On reaching an elevation of about 9,000 feet, the contracted valley, up which we were travelling, spread out into more free stretches, being on a level with the plateau of the first range of foot hills. The surface is here covered with a rank growth of grass and scattering pine timber. Sweeping fires, which had passed over nearly this entire region of country, occasioned the destruction of the principal pine growth, which, with its dry, naked trunks, gave a somewhat forbidding aspect to the more open scenery. In the moist lower portion of the valley, the fallen timber unites with a matted growth of sub-alpine willows, rendering the passage tedious and difficult. The several valleys here converging from different directions, gradually merge into a steeper, rocky slope, occupied, as before, with dead wood. On this sub-alpine inclination, few peculiar plants are met with; *Pentstemon glaucus*, and *P. alpinus*, Torr., being most conspicuous. From this point, the mountain slope increases quite rapidly, and the ascent is by steady and continuous climbing. The timber growth, confined almost exclusively to a more stunted form of *Abies Engelmanni*, with scattering trees of *Pinus flexilis*, soon give place to open patches, disclosing a vegetation purely alpine. Here, for the first time, *Pinus aristata*, Engelm., makes its appearance; its deformed trunks, beset with withered branches, and sending off leafy tufts close to the ground, serve to give a peculiar blighted look to the landscape which it occupies. I have had frequent occasion, in my various mountain rambles, to notice the abruptness with which the alpine flora usually makes its appearance. After toiling slowly up the steep ascent, with little or nothing new to attract the attention, suddenly, on mounting some exposed knoll, a profusion of alpine flowers bursts on the view. The plants thus met with, include, almost constantly, *Primula angustifolia*, *Gymopterus alpinus*, *Eritrichium arctioides*, *Arenaria arctica*, *Silene acaulis*, *Apoploppus pygmaeus*, &c. From this point, there is a constant succession of these interesting forms, varied according to the peculiar exposure, and the character of rock or soil. Along the somewhat scanty alpine brooks of this region, (much less copious than those of the Snowy Range,) I was pleased to notice the elegant-flowered *Primula Parryi*, with its very con-

stant associate *Sedum rhodanthum*. The *Mertensia Sibirica* still maintains its position by the edges of streams, extending thence downward to the very base of the mountains. Here, also, we more or less constantly meet with *Sibbaldi procumbens*, *Saxifraga cernua*, *S. debilis*, *S. punctata*, *Caltha leptosepala*, and others. Among the plants not heretofore observed, is the neat *Androsace Camajasma*, which exhales a pleasant odor of bitter almonds, and the beautiful red-flowered *Saxifraga Jamesii*, rooting in crevices on the vertical walls of shaded rocks. The various forms continue, intermixed with patches of snow, till the limit of arborescent growth is reached, observing a well defined horizontal line along the mountain slope. According to barometric measurement, this line, at the point observed, having a north-east exposure, shows an elevation of 12,043 feet above the sea level. The last trees to maintain their position in this exposed locality, are *Abies Engelmanni*, and *Pinus aristata*, both of them dwarfed and stunted in their struggle with the elements, and exhibiting marks of decrepid age, in blasted trunks and prostrate branches. From some of these alpine *centenarians* we made huge fires to keep off the chilly night air, while spruce boughs supplied us with spring mattresses.

As the setting sun passed over the western slope, the gigantic outline of Pike's Peak was projected on the plain below with wonderful distinctness, and in massive proportions.

Astir by daylight, to watch, from our mountain eyrie, the glories of an unclouded dawn, we were surprised and gratified by the faint chirp of birds, strangely contrasting with the bleak scenery by which we were surrounded. This morning carol we afterwards found to proceed from a species of mountain swallow, the nest of which we discovered still higher up on the alpine slope at an elevation of not less than 13,000 feet above the sea. We could not but admire the taste with which the selection was made; a snug recess, scooped out amid the matted foliage of *Silene acaulis*, concealed from view by an overhanging tuft of *Dryas octopetala*, crowded with its pure white blossoms; while, in close vicinity, bloomed the beautiful *Primula angustifolia*, and fragrant *Eritrichium arctioides*. Under such circumstances, natural feelings overcame the scientific taste for collecting, and we left undisturbed the nest with its contents, consisting of five mottled, granite-colored eggs.

As the sun rose majestically above the well-defined horizon of the plains, the resemblance to a wide open sea was strikingly manifested. A slight haze served to heighten the pleasant illusion, the

inconsiderable elevations appearing only as ripples, or low islands, on its surface. To carry out resemblance still farther, the rounded grassy swells, and reef like ledges of tilted rock, at the foot of the mountains, could be readily taken for surges and breakers on this once well defined coast.

Setting our faces once more towards the gigantic peak, still towering 2,000 feet above us, we commenced the final ascent, slowly mounting over a varied surface composed of disintegrating rock, interspersed with patches of alpine sward. Conspicuous among the plants decorating this mountain sod, were the bright azure flowers of *Mertensia paniculata*, and *Eritrichium arctioides*, the latter, as one of the party significantly suggested, resembling "a piece of the sky just, fallen down." Though as late in the season as the 1st of July, all the indications of vegetation were those of early spring. I looked in vain, at the foot of the snow drifts, to discover the *Chionophila*, (snow-lover,) discovered here by Dr. James, and found last year on the Snow Range, but the season was, no doubt, too early; *Trifolium nanum*, and *T. dasyphyllum* were, however, in full bloom, and quite conspicuous. Near the very summit, we first came upon the interesting tap-rooted *Claytonia*, observed so abundantly last season on the Snowy Range, at the head of South Clear creek. Here, it seemed dwarfed and stunted, having far less conspicuous leaves and flowers. This plant, together with an alpine *Thlaspi*, were the only flowers in bloom on the highest elevation.

The summit gained, there was opened an extensive view towards all parts of the compass. To the east stretched the unlimited expanse of the great plains; while to the south could be traced the course of the upper Arkansas; north and west was a confused mass of mountains, interspersed with open valleys, including the broad basin of South Park, bounded by the sharply defined outline of the Snowy Range. From this point, I was able to detect an elevated peak in the Snow Range, visited a few weeks previously, having an elevation, according to barometric measurement of 13,223 feet above the sea. I have called this peak *Mt. Guyot*, in compliment to the distinguished Swiss-American savant of that name. Other still more elevated points could be noticed, some of which are perhaps as high, or even higher, than Pike's Peak.

The summit of Pike's Peak is a somewhat level plateau, embracing several acres in extent, strewn with masses of detached rocks of a fine-grained granite, and occupied in part by extensive snow drifts. On the highest point of one of these, by the aid of a rough tripod, made from climbing

sticks brought up by the ascending party, I set up my barometer, which, on adjusting the column of mercury, stood at 18,1000; attached thermometer, 45° F.; detached thermometer, 37° F. Chilly gusts of wind, sweeping over the bald exposure, compelled me to change the place of observation to a more sheltered spot, about fifteen feet below the main summit. At this point I made a series of observations for ascertaining the elevation, giving a result, as computed by Dr. Engelmann, of 14,216 feet above the sea.

Our observations finished, the more *facilis decensus* was commenced, not, however, without many weary steps, and much carefully poised balancing.

We reached the timber line, to partake of our last mountain meal, and thence, by night-fall, our pleasant camp ground at the *Fontaine-qui-bouit*.

MR. RICHARD FETTERS, of Camden, New Jersey, died recently in his 73 year.

Mr. F. was widely known as a propagator of Roses, Camellias, Magnolias, and other "stock" things; and, as a liberal, high-minded, and generous man, was as widely esteemed as known. He was a native of New Jersey, and commenced his career in what is called "humble life." When near his 50th year, death had about claimed him as his victim; and from motives of health, he entered the nursery business, in which, for one who had no practical knowledge of the business, he was remarkably successful. He died worth, probably, \$100,000.

GRAPE CULTURE AND NATIVE WINE.—Some few years since the Hon. Marshall P. Wilder of Massachusetts, then President of the National Pomological Society of the United States, in an address delivered by him at their meeting at Washington, D. C., gave it as his opinion that in less than a quarter of a century the American people would be able to sit under their own "vine and fig tree," and drink, as a common national beverage, the wines of their own vintage. This prediction has begun to be verified. The general attention now given to grape culture has fully established the fact that grapes can be raised and profitably grown in all parts of this country, even the cold regions of New England, while in the middle and Western States, as well as in California, the grape growing regions are quite equal, if not superior, to the best wine districts of France or Germany. Already there is a large amount of capital invested in vineyards and materials for wine making. The amateur fruit-grower now boasts of his eight or ten varieties of rich luscious grapes in full bearing, while almost

every man who owns his little cottage, enjoys the satisfaction of gathering the fruit from his few vines. Till recently, there has been no really practical American treatise on the open air culture of the grape in cold regions, which could be recommended as a guide for amateurs and grape-growers generally. In "*Phin's Open Air Grape Culture and Wine Book*," we hail the appearance of such a book; and notice that it is the only work recommended by "*Appleton's New American Cyclopaedia*," for readers on this subject. It should be in the hands of every man who cultivates a single vine, as a safe, sure and thoroughly practical guide for its culture. There are many reasons why we look with satisfaction on the increased attention now given to grape culture in this country. There is probably nothing that can be so easily grown, that will yield any fruit like so sure and rich a return of luscious fruit.

In these days of drugged liquors and poisonous beverages, a return to the primitive custom of using pure native wines, as a national beverage, we believe cannot but prove beneficial to the cause of temperance. We notice the work is sold by booksellers everywhere, for \$1.25, which is no consideration for the valuable instruction it contains on the management of the vine.—*Rochester Union*.

ELLWANGER & BARRY'S NURSERY.—During a recent call at this celebrated nursery, I found the same perfect condition as in former years, in every part, kept up. Their home grounds are an admirable specimen of finished culture. They have purchased land so that their home nursery is now one continuous piece of ground of 400 acres; the rest of their grounds are in detached portions. Their specimen trees give promise of a large crop for the present season. They continue their former mode of destroying the euculio, namely, killing the insects (or beetles) by jarring them down on sheets, and also destroying the larvæ by sweeping up from the smooth beaten ground, all the punctured fruit that falls. This makes very thorough work with them, and the consequence is that the trees are every year loaded and over-loaded with plums. A few years since some account was published of their dwarf Virgalieu orchard, which yielded for successive years at the rate of several hundred dollars per acre. Latterly this variety has become much liable to scab or cracking, and they have worked all the trees over to other sorts. This has been easily and quickly effected by inserting a graft into each of the limbs or branches. The second year these altered trees bore well; and the present or third season

they promise a profuse crop. The proprietors see no necessity for always keeping the tree of the same sort that it is first grafted, and think it a very small matter to change the variety, whether on a large or small tree, as often as they like.—*Country Gent.*

GROUNDS OF C. M. HOVEY.—Being invited last week to attend Mr. Chas. M. Hovey's annual Strawberry Festival, the writer enjoyed with others the pleasure of visiting the grounds of the President of the Massachusetts Horticultural Society, as Mr. H. now holds that responsible and honorable office. His grounds comprise about 40 acres, devoted to the cultivation of the useful and the beautiful. His floral culture is extensive, rare and elegant. Formerly he had about 1400 varieties of the rose, though not so many now; though a little late, they looked finely. His Pelargoniums still blossom finely, and have done so since the first of April. His Heaths are also fine. The lawn, surrounded on three sides by rare and beautiful shrubs and trees, deservedly attract much attention. So also did his fine and large collection of standard pear trees.

After looking through his beautiful and highly cultivated grounds, the company were invited to examine his strawberry plantation, where are growing some of the finest varieties in cultivation. After examining and testing the fruit here, the guests, mostly gardener's and amateurs, were invited to the house of Mr. H., and there they had a fine opportunity of further testing the several varieties of berries grown by him, both without and with sugar and cream. After having tried the different varieties, among which were the LaConstante and Triomphe de Gand, the company unanimously decided that Hovey's Seedling had no equal in flavor as a table fruit, its quality being superior to that of any of the other half-dozen kinds tested.—*Boston Cultivator*.

Foreign Intelligence.

BROCCOLI PRESENTED TO THE QUEEN.—A curious Broccoli has been sent to Her Majesty, who has graciously acknowledged its receipt. Its shape was that of a scroll or ribbnnade, eighteen inches in length, an inch and a half in diameter in the middle, and three inches at either end. The plant was lined in the centre by a solid line of the same nature as the flower, and following its form with geometrical precision.—*Builder*.

HUXLEY'S ANTIQUITY OF MAN.—In reference to this remarkable work, the *London Gardener's Chronicle* says:

“The author gives information which may be relied on respecting all these recent discoveries, together with his own estimate of their value; all this he does in such a way that the unscientific reader will have no difficulty in following him through all the region of fact. In the latter part of the volume, where he enters the region of speculation, it is possible that the reader may not be so well satisfied with his guidance. We give a condensed extract from the second chapter:

There are in Denmark deposits of peat varying in depth from 10 to 30 feet. The lowest stratum, 2 or 3 feet thick, consists of swamp-peat, composed chiefly of Moss or Sphagnum, above which lies another growth of peat, not made up exclusively of aquatic or swamp plants. In fact, Scotch Firs, often 3 feet in diameter, must have grown upon the margin, and frequently fallen in. But this tree is not now, nor has ever been in historical times, a native of the Danish islands, and when introduced it has never thriven. The Scotch Fir was supplanted by the sessile variety of the common Oak, and that again by the pedunculated (*Quercus robur*). The Oak has now, in its turn, been superseded in Denmark by the common Beech. Splendid Beech trees characterized the Danish islands, we know, in the time of the Romans, and this feature of their forest scenery remains unaltered to the present time. Now at a great depth in the peat, and immediately under a buried Scotch Fir, a stone implement was found. By collecting and studying a vast variety of such implements, and other articles of human workmanship preserved in peat, in sand-dunes, and in shell-mounds, to be described presently, the most celebrated naturalists and antiquaries have succeeded in establishing a chronological succession of periods, which they have called the ages of stone, of bronze, and of iron, named from the materials which have each in their turn served for the fabrication of implements. The general result arrived at is, that the age of stone in Denmark coincided with the period of the first vegetation, or that of the Scotch Fir; a considerable portion of the Oak period coincided with the age of bronze; while the age of iron corresponded more nearly with that of the Beech tree. Skulls from the peat, and supposed to belong to the stone period, have been found, but these need not necessarily carry us back more than a comparatively moderate time.

Along the shores of the Danish Islands mounds are seen, varying in height from 3 to 10 feet, some

of them 1000 feet long, and from 150 to 200 wide, consisting chiefly of thousands of cast-away shells of the oyster, cockle, and other mollusks, of the same species as those which are now eaten by man. These shells are plentifully mixed up with the bones of various quadrupeds, birds, and fish, which served as the food of the rude hunters and fishers by whom the mounds were accumulated. The Danes call these mounds Kjekken-modding, kitchen-middens, or ‘kitchen-refuse-heaps.’ Scattered all through them are flint knives, hatchets, and other instruments of stone, horn, wood, and bone, with fragments of coarse pottery, mixed with charcoal and cinders, but never any instruments of bronze, still less of iron. The habits of the people who lived in those days are inferred from the contents of their kitchen-middens. In the same way, the spoils of the ancient Swiss Lake dwellings built on piles, of which so much has been said lately, are scrutinized, the evidence as to what tame animals they had, and what wild animals, whether of extinct or of living species, is all brought to light, and the fact that they split the bones containing marrow.

In 1833-34, Dr. Schmerling, a skillful anatomist and palæontologist, examined more than 40 caverns in the neighborhood of Liege. These he considered not to have been dens of wild beasts, but that their organic and inorganic contents had been swept into them, by streams communicating with the surface of the country. Artificially shaped flints were universally found in these caves, and he adds, ‘none of them could have been subsequently introduced, being precisely in the same position as the remains of the accompanying animals.’ Human remains were rarely found. Dr. Schmerling accumulated ample evidence to prove that man had been introduced into the earth at an earlier period than geologists were then willing to believe, and Sir Charles, in admitting that he did not give the Doctor's opinions, in 1834, the fair weight to which he now considers them entitled, can only plead, that a discovery which seems to contradict the general tenor of previous investigations, is naturally received with much hesitation, and, at that time, he had neither leisure nor courage to follow the Belgian philosopher through every stage of his difficult task.

The next important step towards establishing the great antiquity of man, was made by M. Boucher de Perthes, between the years of 1841-47, who found in ancient alluvium, at Abbeville, in Picardy, some flint implements, whose antiquity was attested by their geological position. This gentleman was possessed of antiquarian knowledge enough to recognize in their rude and peculiar type a charac-

ter distinct from that of the polished stone weapons of a later period, usually called "celts." Still, the scientific world had no faith in the statement that works of art, however rude, had been met with in undisturbed beds lying close upon the white chalk. M. Boucher de Perthes has, if we mistake not, just made the discovery of human bones in the same strata—the one thing that was wanting to complete and crown his labors.

But we have said enough. Everybody who desires to be put in possession of authentic information on this extremely interesting subject, must study Sir Charles Lyell's book; and we venture to say that the description of the Brixham cave near Torquay, and its treasures, and the exploration of the sepulchral vault of the post-pliocene period, found at Aurignac, in the department of the Haute Garonne, near the Pyrenees, will be read, with the deepest interest, not unmixed in most cases with wonder and surprise.

BEDDING ROSES.—Last year the most telling bedding new rose was Reynolds Hole; it is quite a lady's color for a bright bed of rose-colored roses; and this season Mr. William Paul's Multiflora bedder is just the gentleman's style of bedder—a bold, bouncing, high crimson in a rosy shade all over.

IN the October exhibition of the Royal Horticultural Society of London, the *Eugenia ugni* appeared for the first time before the public. Fruit quite ripe and very inviting. It will not ripen in England except in orchard-houses.

THE "APPLE FESTIVAL" OF THE RUSSIANS.—“There are many holy days observed by the Russian Church, but the most prominent are the Honey Festival on the 1st of August, and the Applé Feast. Both are peasant festivals and much regarded; at the former the honey is blessed, and at the latter the Apple. No Russian ever thinks of eating an apple before the 6th of August (old style), when the day's ceremony has blessed the fruit—a restriction which must be attended with very good results in a country pre-disposed to cholera. The Cathedral of the Repose, Uspenski Sabor, was the first we entered; and the congregation was pressing forward to the priests, who stood in front of the Ikono-stast. The leading priest, magnificently dressed, held a gold and diamond-studded cross to all who presented themselves to imprint upon it their eager kiss. On his right stood another, who had dishes of blessed apples on a table before him; and we observed that all who had kissed the cross received an apple.—*Graves' Cruise in the Baltic.*”

GUTTA PERCHA.—The *Isonandra Gutta*, which furnishes the Gutta Percha, or gutta tuban, is a native of the eastern Archipelago and the adjacent lands. A few years since this substance, now so celebrated and of such wide extended use, was totally unknown in Europe: for though from time immemorial the Malays employed it for making the handles of their hatchets and creeses, it was only in the year 1843 that Mr. Montgomery, an English surgeon, having casually become acquainted with its valuable properties, sent an account of it, with samples, to the Royal Society, for which he was most justly rewarded with its gold medal. The fame of the new article spread rapidly throughout the world; science and speculation seized upon it with equal eagerness; a thousand newspapers promulgated its praise; it was immediately analysed, studied, and tried in every possible way, so that it is now as well known and as extensively used as if it had been in our possession for centuries.

The *Isonandra Gutta* is a large high tree, with a dense crown of rather small dark green leaves, and a round smooth trunk. The white blossoms change into a sweet fruit, containing an oily substance fit for culinary use. The wood is soft, spongy, and contains longitudinal cavities filled with brown stripes of gutta percha.

The original method of the Malays for collecting the resin consisted in felling the tree, which was then placed in a slanting position, so as to enable the exuding fluid to be collected in Banana leaves. This barbarous proceeding, which from the enormous demand which suddenly arose for the gutta, would soon have brought the rapidly rising trade to a suicidal end, fortunately became known before it was too late, and the resin is now gathered in the same manner as caoutchouc, by making incisions in the bark with a chopping knife, collecting the thin, white milky fluid which exudes in large vessels, and allowing it to evaporate in the sun, or over a fire. The solid residuum, which is the gutta percha of commerce, is finally softened in hot water, and pressed into the form of slabs or flat pieces, generally a foot broad, a foot and a half long, and three inches thick.

Gutta Percha has many properties in common with caoutchouc, being completely insoluble in water, tenacious, but not elastic, and an extremely bad conductor of caloric and electricity. The name of vegetable leather which has been applied to it, gives a good idea both of its appearance and tenacity. Its uses are manifold. It serves for water-pipes, for vessels fit for the reception of alkaline or acid liquids which would corrode metal or wood,

for surgical implements, for boxes, baskets, combs, and a variety of other articles. The wonder of the age, submarine telegraphy, could hardly have been realized without it, as it is only by being cased in so isolating a substance, and one so impermeable by water, that the metallic wire is able to transmit the galvanic stream through the depths of ocean from land to land.—*Hartwig's Tropical World.*

THE GERANIUM GARDEN.—We give the following pretty plan of a combined rosary and Geranium garden, from the London *Cottage Gardener*. As the Grape is now so universally cultivated with us, the pillars might be used for this fruit, and the garden be made to embrace the *utile cum dulce* writers so often speak of:

“For the preparation of the annexed plan we are indebted to our tasteful friend, M. H. Seitz, of Chatsworth. There is apparent in this garden a judicious blending of gravel and grass, productive of a light and airy elegance that garden artists of greater celebrity would not do amiss to profit by. Unfortunately for good taste, gardens of this kind in general exhibit such a crowding, clumsiness, and incongruity of disposition in the several figures, as to render the *tout ensemble*, in good perspective, the very reverse of elegant, comprehensive, and dignified. Too many figures in a plan, or the separate parts of the latter too widely spread asunder, when the entirety should rather be expressive of nicety in design, can but result in deformity and dissatisfaction when displayed in practice on the ground, however well suited the same arrangement might previously have appeared on paper to the uninitiated in such matters.

The vignette exhibits in perspective the accompanying ground plan, circumscribed with trellage



arches about 9 or 10 feet high, formed of stout rod-iron, inserted into blocks of stone beneath the surface of the ground; and a marble figure of “Flora” is presumed, not inappropriately, to occupy the centre of the parterre. The Pelargonium garden at Oakley, the Duke of Bedford’s, is thus circumscribed with iron arches; and the airy elegance thus imparted, when entwined and festooned with

hardy and summer greenhouse climbers in great variety, is not the least attractive feature of the scene. A seldom used, but most classic plant for this kind of decoration, is the Grape-vine. And when in early autumn the foliage of various hardy species of *Vitis* assume a variety of tints, and ripe and unripe bunches of Grapes in “bacchanal profusion reel to earth,” or rather depend from these arches, partly concealed by green, and red and green, and purplish foliage, the effect is extremely pleasing, reminding one of Byron’s lines on Italy—

“Who love to see the sunshine every day
And Vines (not nailed to walls) from tree to tree
Festooned, much like the back scene of a play.”

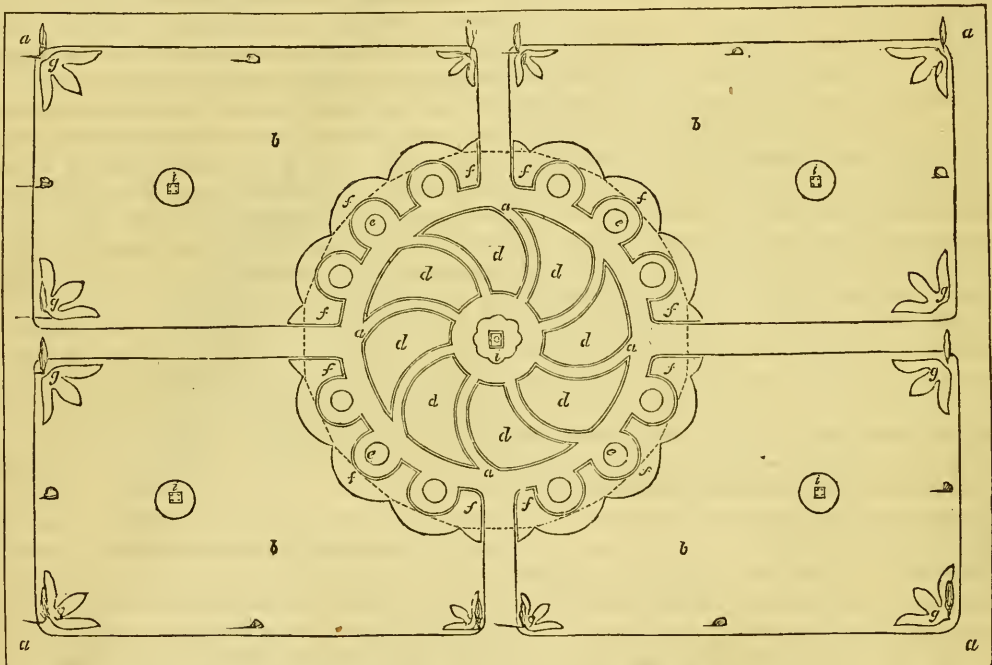
The only difference being that the sun, perhaps, does not shine so brightly as it does in Italy, and that our Vines, instead of being “festooned from tree to tree,” are merely trained from arch to arch. In addition to the Grape-vine, Clematis, Jasmine, Roses, Virginian Creepers, Honeysuckles, and other hardy climbers, are rendered decidedly more elegant and graceful in summer time by having such half-hardy greenhouse creepers as *Maurandia*, *Lophospermum*, *Rhodochiton*, *Loasa*, *Tropæolum*, *Cobea*, etc., planted at their base annually, and induced to loosely enwreath themselves and ramble over their more sturdy compeers.

The flower-baskets also constitute an interesting feature in connection with the Pelargonium garden at Oakley; and, since this particular kind of ornament is not in very general use, the following particulars relative to it may not be considered out of place:—The basket portion is composed of robust, closely-interwoven wickerwork, annually painted green, both for effect and for the preservation of the comparatively frail material of which it is composed. In form it is circular, and made to rest upon a substantial wooden frame or support, constructed with a view to strength as well as ornament. This ornamental stand is about 18 inches or 2 feet high, square in shape, with a circular top corresponding to the diameter of the basket bottom; and like the latter, is painted green to preserve the wood, as also to harmonize in color with the superstructure which it upholds. The flower-basket itself is about 5 feet in diameter at top, 2½ feet across at bottom, and about 3 feet in depth. The interior is necessarily furnished with a portable lining of sheet-iron next the wickerwork, perforated at bottom with numerous apertures for the escape of moisture descending through the soil, and since the basket itself is bottomless, the circular false bottom of perforated sheet-iron (though, of course, placed inside the basket), is necessarily made to rest chiefly upon the ornamental latticed

frame which supports it. It is this, of course, a portable contrivance *in toto*, being disposed in winter in some dry airy place for the sake of preservation from damp, and consequent decay, until again required for use as a summer ornament. Drainage and soil are, of course, renewed annually when re-introduced to the flower-garden; and albeit the species of ornament I have described is composed, in part at least, of frail materials; if painted over yearly and taken care of in the dead season, it will last for many years.

At Oakley these flower-baskets are exclusively decorated with a miscellaneous assortment of choice hybrid and Fancy Pelargoniums, fringed with trail-

ing Ivy-leaved and variegated Geraniums, which depend over the sides in rich profusion, producing a luxuriant and yet most elegantly unique appearance. Scarlet Geraniums are omitted from these baskets as being too conspicuous and glaring in color, when thus elevated so nearly to a level with the eye of the observer: and the *coup d'œil* presented is more reposeing and softer in consequence of their omission. In planting them the plants are so thickly disposed as to confer upon these beautiful flower-stands, when in full bloom, an appearance of what in truth they are--magnificent tastefully-formed bouquets of Pelargoniums and Geraniums.



[PLAN OF GERANIUM GARDEN AT OAKLEY.]

Reference.—The accompanying plan being uniform and pretty well balanced throughout, it will be indispensable, in order to obviate any violation of the effect as a whole, that the corresponding parts be arranged so similarly in respect of the habit, height, color, etc., of the different varieties of Geraniums employed in its decoration, as to confer an expressive air of unity and harmony upon the entire disposition—the respective parts of the design being thus made to reflect, as it were, the corresponding ones. This is easy of accomplishment, provided the plan be carefully studied on paper previous to planting it; and which is assuredly well worth the

pains, when it is known that any material mistake in the arrangement must inevitably prove destructive to the equipoise and harmony of the picture.

The fastigate tree and dwarf bush profiles indicated on the plan, are intended to represent specimens of some strict-growing and spreading plants, as Irish Yew or evergreen Cypress for the former, and Phillyrea or Laurustinus for the latter. Doubtless, however, well managed examples of standard or pyramidal Pelargoniums would be equally as appropriate in these positions; and the small angular beds on grass, *g*, near which they are planted, might most appropriately be furnished alike with

masses of the "Frogmore Improved" scarlet, zoned with some variegated Geraniums for effecting a suitable contrast with the grass.

The small square, *c*, within the circular fig. *i*, in the centre of the gravel parterre, *a*, and grass-plats, *b*, are consecutively the sites of the statue of Flora and flower-baskets shown in the plan. The circles, *i*, are furnished with fragrant Geraniums, and Heliotropes and Mignonette; *a*, gravel walks, 8, 6, and 2½ feet wide; *b*, the grass portion of the plan. The dotted line round circumferential border, *f*, denotes the iron trellage arches; the border being filled with the most brilliant kinds of scarlet, margined on both sides with variegated Geraniums.

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

MONTHLY DISPLAY, JULY 14TH.

The interest of the evening centered upon the Raspberries and other small fruits exhibited, of which there was a large and creditable display, by Messrs. Parry, Felten, Satterthwait, Dreer, and the gardeners of Messrs. Mitchell, Baxter, and the Lennig Estate.

Mr. Parry took the premium for a general collection of Raspberries, 20 varieties, and Mr. A. L. Felten for the best single dish, of a new and promising variety called the *Pearl*, of excellent flavor, resembling the Allen, said to be entirely hardy and very prolific.

Considerable interest was manifested in a new raspberry, called the *Philadelphia*, exhibited by Messrs. Dreer, Parry, and Felten. It is enormously productive, and claimed to be entirely hardy. The fruit is of good size, purplish red, and of acceptable flavor. It is worthy of attention by growers for the market. Mr. Parry stated the result of two pickings to be at the rate of 200 bushels per acre.

The same variety was shown last year, without a name, by Mr. Dreer.

For size and beauty the Hornet exceeded all others, but is surpassed in flavor by some other sorts; to our taste the best of all were the Allen and Belle de Fontenay.

The Currants shown by Mr. Satterthwait received the premium, as did also the Gooseberries from Mr. Baxter.

C. Mack, gardener to the Lennig Estate, had fine specimens of the Moorpark Apricot and Stanwick Nectarine, both prize fruit.

A new Blackberry, by Mr. Felten, "fully ripe, and as large and of as good quality as the Dorches-

ter," say the committee, received special attention from the visitors.

In the department of Plants and Cut Flowers, the contributions comprised selections from the gardens of Gen. Patterson, A. Graham, gardener; Dr. Rush, James Eadie gardener; A. S. Jenks, James Browne gardener; R. Kilvington, and E. Satterthwait.

Premiums were awarded to Mr. Graham for a Table Design of exquisite taste and workmanship, and six fine Fuchsias. To Jas. Eadie for a hanging basket. To Mr. Browne for a basket of cut flowers; and to Mr. Satterthwait for hand bouquets.

A general display of vegetables by Mr. Felten, of excellent quality, were rewarded with the first and a special premium.

On the whole, as a midsummer exhibition, the display was very attractive and creditable.

We hear of busy preparations for the Grand Autumnal Exhibition, to be held, "barring the rebels," at the Academy of Music, September 15th. Good luck to it.

STATED BUSINESS MEETING, JULY 21ST.

Mrs. Mary Sellers, Passmore Williamson, and Jas. Browne, gardener to A. S. Jenks, Esq., were elected to membership.

The report of the Treasurer showed over \$10,000 invested, and a good working balance on hand.

An interesting discussion upon the merits of new raspberries, concluded the evening's transactions.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.

SUMMER MEETING.

[We reprint entire from the *Rural New-Yorker*, the following report. There are several matters in it of great interest, particularly the prominence it gives to Russell's Prolific Strawberry. Wilson's Albany seems the universal favorite among older kinds, as a cheaply raised and productive berry. Of Cherries, the lists are fuller than we believe have ever been offered before, and from the preference of these prominent cultivators, full lists can be selected.—Ed.]

The Meeting was held in Rochester, on the 24th of June. President Ainsworth called the society to order. A large number of members were present from this section of the State, and visitors from Ohio, Canada West, and other sections of the country.

The minutes being read and approved, a Committee of five was appointed to report subjects for discussion, who presented the following, which elicited the appended remarks:

STRAWBERRIES.

1. *What is the most profitable Strawberry for Market?*

H. N. Langworthy said Early Scarlet should not be lost sight of among new varieties. Triomphe de Gand was desirable, and also Wilson. For one variety would prefer Early Scarlet.

H. E. Hooker had not grown strawberries for market since the introduction of the Wilson. Thought Wilson the best for market if only one variety was grown.

M. B. Bateham, of Ohio, was with a large strawberry grower of Cleveland not long since. He had 15 acres, and picked 150 bushels a day. Had but two varieties, Wilson and Triomphe de Gand. States that he could raise Wilson for one-half the price he could any other variety. Wilson was pretty good when grown in the sunny climate of Ohio. About Cincinnati the Iowa is grown extensively for early fruit. Some are introducing Jenny Lind in its place.

Chas. Downing did not like the Wilson. From the beds he had seen, judged Russell's Prolific would bear as great a crop as the Wilson. It seemed to be the most productive large berry he was acquainted with.

C. M. Hooker had grown strawberries for market for some years. Had discarded every thing but Early Scarlet and Wilson.

Mr. Hoag, of Lockport, considered Longworth's Prolific next to Wilson for productiveness, but none that he had tried produced more than one-third as much as Wilson. Triomphe de Gand winter-killed.

P. Barry had but little experience in growing strawberries for market. Wilson seemed to be the most profitable berry for this market, for it is large, and people will pay as much for it as for better fruit. Russell's Prolific promised well; it is as large as Wilson, of better quality, and seemed to be as productive.

2. *Which are the four most desirable varieties for general cultivation, including early, medium, and late ripening sorts?*

Chas. Downing recommended Jenny Lind, Longworth's Prolific, Triomphe de Gand, Russell's Prolific.

M. B. Bateham—Jenny Lind, Wilson, Longworth's Prolific, and Triomphe de Gand, for Central Ohio.

Dr. Sylvester—Jenny Lind, Hooker, Wilson, Triomphe de Gand. The Hooker did not winter-kill. Jenny Lind and Burr's New Pine ripen about the same time; the former perhaps a little the most productive.

H. N. Langworthy would recommend about the same list as Dr. Sylvester, but was much pleased with what he had seen of Russell's Prolific.

P. Barry—For our own use would select Early Scarlet, Hooker, Longworth's Prolific, Triomphe de Gand. Among the newer varieties there were some very promising: La Constante, foreign, and Russell's Prolific, American might be mentioned.

3. *What is the best method of cultivating the Strawberry?*

H. E. Hooker—Set the plants in April or May, in well prepared land not previously occupied with the strawberry. Planted in rows four feet apart, and one foot in the rows. Kept the ground clean until runners appeared, and then allowed them to take possession of the soil, leaving alleys between the rows or beds about two feet wide.

H. N. Langworthy believed in growing strawberries in hills, and keeping the runners off the plants. This produced splendid fruit, but the soil needed mulching to keep the fruit clean.

E. Moody pursued the plan recommended by Mr. Hooker. For economy he would only grow one crop on the same ground; then plow it up, having another bed ready to give fruit.

E. W. Herendeen said the Triomphe de Gand would not give a good crop unless the runners were kept off.

Mr. Barry said when strawberries were grown in a mass, as recommended by some, the ground becomes hard during the spring, and as there is no chance for cultivation, the crop suffers in dry weather, and is often almost a failure.

CHERRIES.

4. *Which are the three best varieties for Market?*

Mr. Barry said the demand in the market here was always the best for black cherries. He would, therefore, recommend Black Eagle, Monstreuse de Mezel, and Elkhorn. For a white cherry, Napoleon Bigarreau.

W. P. Townsend recommended for the Lockport market, Gov. Wood, Elkhorn, and Black Tartarian.

Benjamin Fish recommended Governor Wood, Black Tartarian, and Black Eagle. The Elkhorn was apt to rot on the tree.

H. E. Hooker—Most of the cherries bought in the Rochester market were for transportation, and the firm fleshed varieties were, therefore, most sought. Yellow Spanish, Napoleon Bigarreau, and Monstreuse de Mezel, he considered the best.

Mr. Townsend said last season he lost the entire

crop of Napoleons by rotting, and the year before it was nearly as bad.

Mr. Barry said the Black Tartarian tree had proved tender of late years.

5. *Which are the twelve best varieties for general cultivation, including early, medium, and late?*

J. Green—Napoleon Bigarreau, Yellow Spanish, Black Tartarian, May Duke, Knight's Early Black, Coe's Transparent, Reine Hortense, Elton, Bigarreau d'Mezel, Tradescant Black Heart, Early Richmond, English Morello.

E. Ware Sylvester—Early Purple Guigne, Gov. Wood, Burr's Seedling, Yellow Spanish, Reine Hortense, Black Eagle, Black Tartarian, Great Bigarreau, Holland Bigarreau, Downer's Late, Coe's Transparent, Late Duke.

F. W. Lay—Knight's Early Black, Gov. Wood, Black Tartarian, Napoleon Bigarreau, Early Purple Guigne, Coe's Transparent, May Duke, Rockport Bigarreau, Carnation, Black Eagle, Sparhawk's Honey, Elton.

Benjamin Fish—Early Purple, Gov. Wood, May Duke, Black Tartarian, Black Eagle, Belle d'Orleans, Yellow Spanish, Reine Hortense, Late Duke, China Bigarreau, Turkish Bigarreau, White Heart.

P. Barry—Early Purple Guigne, Belle d'Orleans, May Duke, Reine Hortense, Yellow Spanish, Gov. Wood, Napoleon Bigarreau, Black Eagle, Black Hawk, Tradescant's Black, Monstreuse de Mezel, Downer's Late.

Charles Downing—Early Richmond, Belle d'Orleans, May Duke, Coe's Transparent, Gov. Wood, Rockport Bigarreau, Elton, Champagne, Reine Hortense, Downer's Red, Great Bigarreau, Late Duke.

Wm. Smith, Geneva—Belle d'Orleans, Early Purple Guigne, Early Richmond, Gov. Wood, Elkhorn, Yellow Spanish, Napoleon Bigarreau, Black Tartarian, Coe's Transparent, Reine Hortense Monstreuse de Mezel, White Tartarian.

Elisha Moody—Early Purple Guigne, Reine Hortense, Gov. Wood, Coe's Transparent, Yellow Spanish, Napoleon Bigarreau, Knight's Early Black, Bigarreau de Mezel, Elkhorn, May Duke, Black Tartarian, Downer's Late Red.

H. E. Hooker—Early Purple, Gov. Wood, May Duke, Coe's Transparent, Knight's Early Black, Black Tartarian, Black Eagle, Early Richmond, Yellow Spanish, English Morello, Bigarreau de Mezel, Downer's Late.

D. P. Wescott—Early Richmond (for cooking), Knight's Early Black, May Duke, Gov. Wood, Delicate, Black Hawk, Black Tartarian, Black Ea-

gle, Kirtland's Mary, Great Bigarreau, Downer's Late, Elliott's Favorite.

W. P. Townsend—Early Purple, Townsend, Gov. Wood, May Duke, Black Eagle, Elton, Reine Hortense, Belle d'Orleans, Rockport Bigarreau, Yellow Spanish, Black Tartarian, Elkhorn.

H. E. Maxwell, Geneva—Black Eagle, Yellow Spanish, Elkhorn, Monstreuse de Mezel, Napoleon Bigarreau, Gov. Wood, Coe's Transparent, Black Tartarian, Reine Hortense, May Duke, Belle Magnifique, Late Duke.

M. B. Batcham—Black Tartarian, Early Purple Guigne, Gov. Wood, Belle d'Orleans, Yel. Spanish, Rockport Bigarreau, Black Hawk, May Duke, "Early May" of the West (may prove *Donna Marie*), Reine Hortense, English Morello, Late Duke.

C. L. Hoag—Black Tartarian, American Heart, Belle d'Orleans, Early Purple, Gov. Wood, Townsend's Seedling, Belle Magnifique.

CURRENTS.

6. *Which are the four most desirable varieties for general cultivation?*

Charles Downing—White Grape, White Dutch, Red Dutch, May's Victoria, Versailles.

P. Barry—White Grape, Victoria, Cherry, Versailles.

Elisha Moody—Cherry, White Grape, Victoria, Fertile d'Angers.

H. E. Hooker—Red Dutch, Victoria, White Grape Cherry.

E. W. Sylvester—Cherry, White Grape, Champagne, Black Naples.

J. Frost—Cherry, La Versailles, White Grape, Black Naples.

7. *What is the best method of preserving the plants from the ravages of the saw-fly or currant worm?*

Mr. Barry said the most effectual remedy was air-slaked lime, put on every day until the worms are destroyed.

Dr. Sylvester had succeeded in killing them with whale oil soap.

H. E. Hooker used soap suds made of soft soap, strong. Had used lime, and seen the worms eat the leaves when both them and the leaves were covered with lime.

B. Fish had used lime successfully.

BLACKBERRY.

8. *Which are the most desirable varieties for general cultivation?*

H. N. Langworthy—The Lawton is not hardy, and is very troublesome to gather on account of the

thorns. Had grown the Dorchester for several years, but it had never produced half a crop. Had grown Dr. Miner's blackberries, and thought well of them.

H. E. Hooker said our desirable blackberries had proved very undesirable.

Dr. Miner was called upon for a description of his Seedling Blackberry, but declined to respond, stating that there were others there who were acquainted with it. The President then called upon J. Vick, who said he had visited the grounds of Mr. Miner, for the purpose of examining this fruit, and was much pleased with what he saw. This blackberry is of the running or Dewberry species, and roots at the points like the Black Cap raspberry. The fruit, like most of the species, is sweet and of fine flavor. The Doctor had two varieties, one some ten days earlier than the other. The earliest one is the best flavored, but the berries are sometimes imperfect. This is a common fault with the Dewberry. The other variety gave uniformly perfect berries as far as he had observed. The shoots that are to produce the fruit next season come from the ground like the raspberry, and are allowed to run at will until the following spring. A good portion of them will be found rooted, giving new plants. A stake, some five feet long is driven into the ground near each plant, and they are set about six feet apart. The running branches are then collected together and twisted around the stake four or five times, tied with a stout cord to the top of the stake, and all above cut off. As soon as growth commences a great number of lateral shoots are thrown out, entirely concealing the stake and branches. These bear the fruit, the weight of which causes them to droop, forming a very pretty pyramid. The amount of fruit produced is very great—often three or four quarts to each plant. It is easily gathered, as there are no thorns to interfere with the operation, the fruit standing out free from leaves or branches.

The President made a statement somewhat similar to the preceding. He had noted the imperfection of many of the berries, and though the flavor was excellent, this berry, like all of the blackberry family, left a kind of woody taste in the mouth.

RASPBERRY.

9. *Which are the best six sorts for general cultivation?*

P. Barry—Fastolf, Vice-President, French, Franconia. Best for market—Orange, Red Antwerp, H. R., Black Cap.

Charles Downing—Vice-President, French, Pur-

ple Cane or Red Prolific, Orange, Northumberland Fillbasket, Franconia, Fastolf. Best for market—H. R. Antwerp, Franconia, Northumberland Fillbasket.

H. E. Hooker—Doolittle Black, Red Antwerp, H. R., Brincklé's Orange, Hornet, Fastolf, Franconia. Best for market—Black Cap, Hudson River Red, Orange.

F. W. Lay—Fastolf, Doolittle Black Cap, Hudson River Antwerp, Franconia, Brincklé's Orange, Harvest Giant.

J. Frost—Brincklé's Orange, Belle de Fontenay, Merveille des Quatre Saisons, Black Cap, Franconia, Red Antwerp. Best for market—Brincklé's Orange, Black Cap, Belle de Fontenay.

10. *What is the best method of cultivation?*

Mr. Downing said the common practice on the Hudson was to plant in hills, four feet apart each way. For or five canes are reserved for each hill, tied to a stake four feet high. When bearing is over the stakes are pulled up and the old canes are cut away. The new canes are laid down and covered with a little earth every fall.

A. N. Langworthy did not use stakes, but tied the canes together, which seemed to give sufficient support.

H. E. Hooker called attention to the fact that the arbor vitæ trees and hedges were suffering very much from the depredation of an insect that bored into the leaves and small branches, entirely destroying them. At first he supposed that the injury was caused by hard winters, but observing that those least exposed were injured as much as others, looked further for the cause, and found an insect to be the sole cause of the trouble. It is easily found and seen with the naked eye. He knew no remedy, but wished to call attention to what threatened to be a serious evil.

D. W. Beadle, of St. Catharines, C. W., in behalf of the Fruit Growers' Society of Upper Canada, expressed great pleasure for the courtesy extended to the Society he represented, by this Association, in appointing delegates to attend their last meeting. He had the honor of being appointed with two other gentlemen, to represent the Canada Society at this meeting.

M. B. Bateham, of Ohio, E. W. Herendeen, of Macedon, N. Y., and D. W. Beadle, of St. Catharines, were appointed a committee to examine fruits on exhibition.

The society adjourned to meet in Rochester in the autumn.

THE GARDENER'S MONTHLY.

DEVOTED TO

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

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Hints for September.



FLOWER-GARDEN AND PLEASURE-GROUND.

Where there is likely to be a great deal of planting done, and only a limited number of hands employed, planting may commence early in the month. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. In fact, if planting cannot be finished before the beginning of November in the Northern and Middle States, it is better, as a rule, deferred till spring. In those States where little frost occurs, this rule will not apply. The roots of plants grow all winter, and a plant set out in the fall has this 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.

Attention should be given at this season to the flower-beds, by noting what has done well in your 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 shoot just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong-growing things, such as Geraniums, Fuchsias, &c.

Small-growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their way under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however, hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings, they may be inserted with a dibble; but where many are to be put in, it saves time to mark a line on the sand with a rule or straight edge, and then cut down a face into the sand, say one or two inches deep, when the cuttings can be set against the face like box-edging. All amateurs should practice the art of propagating plants. There is nothing connected with gardening more interesting.

We have said a good deal about ornamental hedges in past numbers; but not, perhaps, as much as the subject deserves. Not only do they make the very best kind of boundary fences, and form in themselves beautiful objects, but they have a great use in small places in breaking off long and uninteresting scenery, and, by dividing perhaps one grand view into innumerable parts, make a small place seem very large indeed. —

We have often given the principles of successful hedging, the main ones being to repress excessive growth at the top by repeated summer pruning and

training in a conical form, while the side and basal shoots should be suffered to grow as much as they possibly will, without let or hindrance, during the summer season. As soon as the leaves begin to fall, these lowermost shoots should be brought into shape, so as to render the hedge perfect.

Many kinds of bedding plants of succulent or sub-fleshy growth, can be taken up from the flower-beds on the approach of frost, and cut in, say one-half, and packed thickly in boxes of soil, and kept in a rather dry and cool cellar through winter. Such fine plants make a much better show in the bed the next year than plants of the present season's striking. A cellar is one of the most useful appendages to a garden. Were we to have only *one* choice, we should prefer a cellar to a greenhouse for its general usefulness.

As soon as Dutch bulbs can be obtained, they should be at once planted. Of all fertilizers, well-rotted cow-manure has been found best for them, and especially if mixed with a portion of fine sand. They should be set about four inches beneath the surface of the ground, and a little sand put about the root when being planted. A very wet soil usually rots the roots, and a dry one detracts from the size of the blooms. A soil in which the generality of garden vegetables do well, is one of the best for these plants.

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 required, and about five feet wide, so as to accommodate six feet sash. The inside of the pit may be built up of boards, or, if something more durable and substantial is required, brick or stone. The body of the frame may be built up a few feet above the level of the surrounding soil, and the earth which comes from the pit be employed in banking up to the upper level of the frame. Shelving should be made for the inside so as to extend from the base of the front to nearly the top of the back, on which to place the plants in pots. In the space which will then be under the staging, hard wooded and deciduous plants, as lemon, verberna, fuchsias, etc., may be safely stored, while the more succulent kinds are shelved overhead. The plants to be preserved in such a pit should be potted early, and be well established and healthy before being pitted; much of success depends on this. The less water they can be made to live on without withering through the winter the better they will keep.

Straw mats must be employed to cover the glass when freezing time commences, and when the thermometer is likely to fall below 20°, straw or litter should be thrown over. Board shutters are also excellent, as it keeps the snow out from the straw and litter, which sometimes makes the mats very awkward to uncover when we would like to give air. Very little light or air will be required through the winter, when the plants are not growing. If a good fall of snow cover the pit, it may lie on undisturbed for two weeks or more without injury. When a warm dry day offers, the sashes may be raised if convenient, to dry up the damp. Many kinds of border plants can be kept over winter this way with little trouble.

VEGETABLE GARDEN.

The main crop of Spinage should now be sown. Properly cooked, there are few vegetables more agreeable to the general taste, and few families who have gardens will wish to be without it. It is essential that it have a very well enriched soil, as good large leaves constitute its perfection as a vegetable. As soon as the weather becomes severe, a light covering of straw should be thrown over it. A few Radishes may be sown with the Spinage for fall use.

Turnips also may still be sown. In fact, if the soil be rich, a better quality of root for table use will be obtained than if sown earlier.

Celery and Endive will still require the attention in blanching, described in former hints.

Cabbage and Cauliflower are sown this month for spring use. The former requires some care, as if it grows too vigorous before winter, it will all run to seed in the spring. The best plan is to make two sowings—one early in the month, and the other at the end. The rule is to get them only just so strong that they may lie over the winter in safety. Many preserve them in frames; but they should have wooden sashes or shutters instead of glass, so as not to encourage them to grow too much.

Cauliflower, on the other hand, cannot well be too forward. Most persons provide a pit of stone, bricks or wood, sunk five or six feet below the surface of the ground, into which leaves, manure or any waste vegetable matter is filled. When quite full, it is suffered to heat a little, when it will sink somewhat and have more material added to it; about six inches of good rich loam is then placed on it, and early in November the Cauliflower planted out. The object in refilling the leaves so often is to insure the plants remaining as near the glass as possible, which is very essential in the growth of Caul-

iflower. Lettuce is treated in the same way, and seed should be sown now to prepare for the planting. The Cabbage Lettuce is the kind usually employed.

GREENHOUSE.

It is a very good time to look around for soil for potting purposes. The surface soil of an old pasture forms the best basis, which can be afterwards lightened with sand, or manured with any special ingredients to suit special cases, as required. The turfy or peaty surfaces of old wood or bogs also come very "handy." A stock of moss should also be on hand for those who crock pots, in order to cover the potsherd; moss also comes in useful for many purposes connected with gardening, and should be always on hand.

Plants intended to be taken from the open ground and preserved through the winter, should be lifted early, that they may root a little in the pots. A moist day is of course best for the purpose, and a moist shady place the best to keep them in for a few days afterwards. Any thing that is somewhat tender had better be housed before the cold nights come. Some things are checked without actual frost.

Those who have greenhouses, pits or frames, will now see to having any necessary repairs attended to. White-washing annually is serviceable, destroying innumerable eggs of insects, in the war against which the gardener should always take the initiative; sulphur mixed with the whitewash is also serviceable. Powerful syringing is a great help to keeping plants clean, and should be frequently resorted to.

Propagation of bedding plants for another season will now be progressing actively. Geraniums, and other things with firm wood, do best in sand spread on the open ground, with a glass frame partially shaded spread over it. A great benefit will be found in most cuttings if they are placed for a short time in slightly damp moss for a few days before inserting the same, so that the wound at the base of the cutting may be partially healed or calloused over. Verbenas, and such cuttings, can be kept but a few hours, unless the wood is very hard. The harder the wood the longer they will do to keep so. Ripe wood of some things will be benefited by keeping two weeks. All this must be found out by each propagator himself.

Ornamental annuals for winter-flowering should be at once sown, not forgetting Mignonette, to be without which will be an unpardonable sin. Chinese Primroses, Cinerarias, Calceolarias, Pansies,

Polyanthus, etc., 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 do not grow much through 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.

Winter flowers are the chief charm of a greenhouse. The following is a list of the most desirable for this purpose:—*Abutilon striatum*; *Acacias* in variety, all are late winter or spring-bloomers; *Alonsoa Warcewiczii*; *Alstrœmeria*, pretty tuberous plants, flowering from March to May in the greenhouse; *Ardisia crenulata*, red berries and very dark green leaves; *Ageratum album*, *A. cœrulea*; *Azaleas* in variety; *Begonia* in variety, particularly *B. parviflora*, *B. incarnata*, and *B. fuchsoides*; *Bletia Hyacinthiana*; *Bouvardia iciantha*; *Epiphyllum truncatum* and its varieties; *Camellias*; *Cestrum aurantiacum*; *Cheiranthus* in varieties; the double Wallflower is particularly desirable; *Chorozema varium*; *Cinerarias*, particularly the new dwarf varieties; *Auriculas*; *Correas*, the new *cardinalis* is the best; *Coronilla glauca*; *Cuphea strigillosa* and *platycentra*; *Cyclamen persicum*, *colum*, and *hederæfolium*; *Daphne indica* in variety, and *D. cneorum* when a little forced; *Iberis sempervirens*; *Epacris* in variety; *Eupatorium elegans*; *Fabiana imbricata*; *Gardaquia multiflora*; *Genista rhodaphne*; *Geraniums* in variety; *Habrothamnus elegans*; *Harbenbergia monophylla*; *Kennedyia Murrayattæ*; *Heliotropes*; *Jasmines*, yellow and white; *Lachenalia tricolor*; *Lantanas* in variety; *Leschenaultia formosa*; *Linum trigymum*; *Mahernia odorata*; *Manettia bicolor*; *Melaleuca speciosus*; *Metrosideras floribundus*; *Olea fragrans*; *Oxalis Bowii*, *flava* and others; *Passiflora Loudonii*; *Pentas carnea*; *Petunias*; *Plumbago capensis* and *rosea*; *Polygala myrtifolia*; *Rondoletia anomale*; *Ruellia formosa*; *Sylvia gesneriflora*; *Solanum capsicastrum*; *Sollya heterophylla*; *Stevia serrata*; *Tropæolum Lobbianum* and its varieties; *Veronica speciosa* and its varieties.

Of plants that flower in winter, requiring a warmer greenhouse than the above, the following are about the best:—*Adhatoda cydoniœfolia*; *Allaman-*

da cathartica; Angelonia gardneriana; Aphelandra Ghiesbreghtii; Æschynanthus, any of the species; Centradenia floribunda and rosea; Chirita sinensis; Clerodendron fallax; Cypripedium venustum; Euphorbia splendens and Jacquiniæflora; Poinsetta pulcherrima; Franciscea exima; Gesneria elongata and zebrina; Heterocentron, rose and the white; Justicia carnea; Cyrtanthera magnifica; Lasiandra splendens; Pleroma Benthamiana; Mandevillæ suaveolens; Meyenia erecta; Medinilla magnifica; Mussænda frondosa; Porphyrocoma lanceolata; Russelia juncea; Stephanophysum Baikii; Thyrsacanthus rutilans.

Communications.

STRAWBERRIES.

BY MR. W. C. STRONG, BRIGHTON, MASS.

The impression exists among American Athenians that in no other city of the Union can strawberries be found to compare with those usually sold in the Boston market. Certainly the diminutive berries sent us from New York, are but a dim foreshadowing of the large and luscious home fruit soon to follow. Belmont is the bannertown of our State in strawberry culture. As an evidence of the spirit of this little town, its Farmer's Club held an exhibition in June, offering such prizes as the following:—"For the best Basket of Strawberries, containing 4 quarts, \$30. For the next best, \$20, and a long list of other prizes in like liberal proportion.

Though the palm of excellence may be disputed, yet it must certainly be admitted that Boston fruit growers are wide awake and interested. Your readers may be interested in a few notes upon the most approved varieties.

The most successful cultivators do not attempt but about one acre per annum. There is a limit to the amount of help to be profitably employed; also the land is to be prepared by yearly rotation, and the bed changed every year, so that a bed of one acre, changed year after year, will require a lot of from three to five acres, according to frequency of rotation.

Heavy clay loam is the soil preferred. Bottom lands, inclining to be wet, but underdrained and then thrown into beds by dead furrows, about 21 feet apart, so that surface water shall pass off at once, in the winter; these give the most luxuriant beds. Having been in good tilth the previous season, about ten to fifteen loads of horse-manure are applied to each acre during the winter or early spring. This is plowed in, and the plants set in April. As

stated, the beds are 21 feet wide. At each edge and close to the dead furrow, is a row of Brighton Pine. The remainder of the bed is filled with the Hovey, in rows three feet apart and one foot apart in the row. These are cultivated by horse until they make runners. By September, the ground is *completely* covered, and the plants so stout they seem to have all the elements of fruit hid within themselves, and able to carry them through the pinching cold of winter.

Salt hay, sedge, and leaves are used as a winter cover, the latter being considered best. Care must be taken that the covering be not too heavy, so as to smother the plants in case of heavy snows. Early in spring, the covering is removed. The large beds, say 200 feet long and 21 feet wide, are a thick mass of plants, the Brighton Pine being the two outside rows to act as fertilizers, and the inside being one sheet of the Hovey. Paths are now cut, dividing the Hovey into sub-beds, three feet wide and running the length of the large bed. The winter covering is then put back, as a mulch, upon the paths and worked into the beds wherever any vacancy occurs. The ground is now so thoroughly possessed by strong plants that weeds will give little trouble, the planter may await with complacency for his reward.

Four thousand quarts are considered a fair crop for an acre. The fruit is of such size that the cost of picking and arranging is greatly diminished. Superior fruit is always saleable, and at advanced prices. In our market, fruit of third quality will average to the grower about 15 cents per quart. The best growers say they average 25 cents per qt.

From these data, the profit of strawberry culture may be easily calculated. One crop is all. As soon as this taken, the field is plowed and is ready for any late crop. The testimony is pretty uniform, that this is the wisest course. In case a second crop is grown, the sub-beds are cut to single rows, three feet apart, immediately after fruiting; manure is again applied, and in the following spring the old plants are cut out for paths, reliance for fruit being placed entirely upon the runners of the previous season.

In regard to varieties, none of the new comers yet equal those above-named. Jenny Lind is a fine early fruit and productive. It deserves culture and might be substituted for the Brighton as a fertilizer, though it is too early to fructify the later blossoms of the Hovey. Triomphe de Gand proves quite hardy, large and prolific. Its shape and color are objectionable, and it separates from the calyx with some difficulty. Still, its perfect flower, its

size and fruitfulness, we think will make it valuable. La Constante went up like a rocket, but the reverse curve is less brilliant. If, in England, the pump is the "best manure for the strawberry," what shall we say in our dry climate? La Constante will give the amateur a *chary* quantity of *splendid* berries, he first giving large supplies of food and drink; but for general culture it is useless. Wilson's Albany has quite vanished. So have the score of other new kinds. They may do for the south or west. I only speak for this latitude.

ADDRESS TO A LAND TORTOISE.

(From my Old Common-place Book)

BY E.

[These pretty lines, which will prove interesting and instructive to our younger readers, who are just awakening to a love for rural pursuits, were written, our correspondent believes, by a Philadelphia gentleman many years ago.—ED.]

Gude mornin' frien' ! ye're airle creepin' !
 Wi' head erect aboot ye peepin',
 Ae stodie gate ye always keep in—
 Aye sure an' slae ;
 I dou't the time ye tak' to sleep in
 Is unco' sma'

Your crawlin' pits me aye in min'
 O' tortles o' the human kin'—
 How many crawlers do we fin'
 'Mong sons o' men,
 Wi' thoughts unto th' 'airth inclin'
 Until the en' !

Ah ! now ye've shut yursel' up tight !
 I ken ye're in an awsom' fright,
 At seein' such an unco' sight
 As my queer face !
 Gang on your gate,—I'm not the wight
 Wad harm your race.

Aiblins I might, for fun or fame,
 Just carve upon your hard auld wame,
 The twa initials o' my name,
 Knawn when I met ye,
 Whilk done, na ither right I'd claim,
 Than down to set ye.

Ye live a hunder years, they say,
 An' mony a weary mile ye gae,
 An' mony a hunder eggs ye lay—
 Ye queer auld beast—
 Whilk jus' the snak', your mortal fae,
 For mony a feast.

But fare ye weel ! I now maun leave ye,
 I dout my absence wanna grieve ye ;
 Wi' jinglin Scotch na mair I cleave ye,
 An' ither too—
 Rhymin' and tortles, here I gie ye
 A lang adieu !"

PENNSYLVANIA HORTICULTURAL SOCIETY

DISCUSSIONAL MEETING, JULY 7, 1863.

The President, J. E. Mitchell, Esq., in the chair.
 Mr. William Bright presented an Essay on
 THE PREPARATION, SEEDING AND MAN-
 AGEMENT OF LAWNS :

The first important point in the preparation of a lawn, is to obtain an open, pourous, well drained soil, of *good depth*. To this end, if the soil be naturally wet, it must be drained in some manner, either by tile or stone drains. If sufficiently drained, the requisite depth may be obtained by thorough plowing and subsoiling, using such plows and such force of horses as will open the soil to the depth of eighteen inches at least. On grounds of any extent, this is cheaper than trenching, and quite effectual.

The subsoil plowing should be performed in the dry weather of the summer or fall, previous to seeding the following spring. Free harrowing is of course useful.

The *quality* of the soil must next receive attention, and it is vastly important that this should be of *uniform quality* all over the surface, and of *uniform depth*. Nearly all lawns are graded more or less, and when this is done, be careful that the soil is kept of uniform quality and thickness. The surface soil must frequently be taken off large spaces, and after the grading has been done, it must be replaced in such a manner that it shall as nearly as possible resemble in quality and depth the natural soil of the lot.

Sandy soils, as everybody knows, may be greatly improved by a dressing of clay or good clayey loam; and clay soils by the addition of sand. This is a simple fact, but one not sufficiently heeded in the hurry which usually attends the preparation of new grounds.

As to manuring, if the land be very poor, it may be heavily manured in the fall, with good, short well-rotted stable manure; or with a compost of muck and stable manure. Bone dust, super-phosphate of lime, and wood-ashes are of course valuable additions to such a compost. If the land is good,—that is, good corn or wheat land,—it will need no manure. It is not so much richness of soil as *depth*, freedom from excess of moisture, and

uniformly good texture and good quality, that we desire. Mixing poor and good soil, in spots, in various parts of the lawn, when grading, will produce a sod which can never be made of uniform color and beauty by any future dressing or manuring. The soil must be of uniformly good quality and uniform depth, to make a good lawn.

The treatment of the lawn, the first spring after it is graded, will be as follows:—The first day, after frost is out of ground and the soil is sufficiently dry to be worked, let the winter-washed place be repaired, then harrow the whole surface carefully, and if not quite smooth, hand-rake the rougher parts, using also the roller if necessary to obtain a fine smooth surface. A little lime, and well-rotted compost may also be applied at this time if required.

The seed should be sown as early as possible, say the 15th of March in this region. Sow on recently harrowed ground, not too rough. The seed needs to be barely covered by earth. It is better, perhaps, after sowing to cover the seed with a hand rake, using both teeth and back of rake to cover it. Or it may be covered by the back or top of a light harrow drawn over it.

It is not desirable to sow any sort of grain with the seeds for a lawn, nor to sow a great variety of mixed grasses. The best grass seed is the common green grass, (*Poa pratensis*), and White Clover.

The proportion of seed will be about 40 pounds of green grass and 6 pounds of white clover. This grass seed is very commonly sold in the seed warehouses under the name of Kentucky Blue Grass. Mix the seed for the purpose of sowing, with ashes and light soil, say ten parts of ashes and soil to one of seed; moisten the ashes slightly, and let the mixture lie 24 hours before sowing.

As soon as the seed germinates, and the grass comes up an inch, on a dry day pass a light roller over it. When the grass is three or four inches high, cut it with a sharp scythe, as close as possible. Mow it with the blade of the scythe *hard on the ground*. Cut the grass every two weeks during the summer in the same manner. A little cow hay may be obtained by spreading the grass, when cut, very thin, and moving it once a day, without injury to the lawn. But it is better to mow *often and close*, and remove the grass at once, using it for mulching trees, &c.

Take out dock, dandelion, and other large coarse plants and weeds, with a chisel on the end of a short pole. Pull red clover by hand, but no small weeds will need to be removed by hand if the lawn is mowed often and closely, as directed every two weeks. The grass will soon overcome the small weeds.

Mow very close the last thing in the fall, to keep mice from harboring in the old grass. About the first of November, or later, top-dress the lawn with compost or manure, if necessary, and hand-rake smooth and clean.

Rake the surface of the lawn, in the spring of the second year, and every year thereafter, as hard and close as possible, with an iron rake, to take out the old grass, stones and sticks; and roll when the ground is moderately dry.

Cut the grass early and often the second year, and very close, the same as at first directed. When the lawn is an extensive one, and well made, a lawn-mowing machine may be used with great advantage, as often as the grass is three or four inches high. If the grass is five or six inches high, the scythe works best. Use the longest bladed scythe that is made. This gives a more even appearance to the lawn than when a short bladed scythe is employed.

The lawn should be so made and so graded, raked and rolled, that the scythe and roller will touch every square inch of the surface. This is of course a point of the first importance.

The great requisites for a good lawn are smooth grading, a good loamy soil of even quality, broken up to a depth of eighteen inches or more, and so porous and well-drained that it will readily part with excess of moisture, and yet of such a character that it will retain a proper degree of humidity to sustain a heavy growth of grass. Well-rotted manure, leaf-mould, clayey loam and clay, of course assist to retain moisture in light soils, and are exceedingly useful additions to most lawns. With the points herein enumerated faithfully attended to, there is no difficulty in obtaining a beautiful and durable lawn.

Mr. Mitchell—Used barnyard manure one year on his lawn and produced a large crop of weeds.

Mr. McGowen—Prefers bone-dust. Has had a heavy crop of tomatoes on his asparagus beds from the use of barnyard manure.

Mr. Harrison.—Prefers simple green grass. Does not approve of mixed seeds. The great object is to obtain a uniform color and texture. This is not attainable by the use of mixtures. The green grass (*Poa pratensis*) endures the drouth better than any other, and the leaf is very fine and of a beautiful rich green tint.

Mr. Mitchell. Has tried the Italian Rye grass; it is handsome but not hardy.

Mr. Satterthwait desired the experience of members as to the *Spergula pififera*.

Mr. Harrison. It has disappointed the high expectations first formed of it. It cannot be relied on for hardness in summer or winter. Appears more like moss than grass.

Mr. Mitchell. What is the experience of members in the lawn mowing machines.

Mr. McGowan. They are valuable where the surface is even and regular. In his own ground the moles prevent its use.

Mr. Satterthwait. A neighboring gentleman has one in use, and finds it excellent.

Mr. Mitchell. The hand machine has been tried by a friend unsuccessfully.

Mr. McGowan. Mr. Jenks, at Bridesburg, has one, and likes it; but his ground is unsuited for it. The surface should be smooth and even.

Mr. Harrison. It has been recommended to let the grass grow without cutting for one season on lawns infested with weeds. One of the finest lawns in this country, which is cut weekly, is so filled with weeds as to destroy its beauty.

Mr. McGowan. The method proposed is ineffectual for the purpose.

Dr. McEwen. Are not some kinds of weeds preferable to grass? For instance, the Veronica, Ly-simachia, and the like. The violet fills the grass in Washington Square, and presents a handsome appearance. At Fort Hamilton the Cerastium grows luxuriantly.

Mr. Pollock. Every fall takes the old soil out of his flower borders, applies it about one inch thick over the lawn, rakes off the surplus and rolls it. The lawn is entirely of Kentucky Blue grass (green grass). [It may be remarked that this lawn, under Mr. P.'s care is always beautifully green, luxuriant and uniform in texture and quality.]

Mr. Harrison. A fruitgrower at Germantown renewed an old and decrepit pear tree by mulching the sod around it heavily with loam.

Mr. Mitchell. Some years since salt was highly recommended for lawns.

Mr. McGowan. Uses a mixture of six bushels each of plaster, ashes and lime, per acre, as a top dressing, with the best results.

Mr. Graham. On two acres of lawn applies forty bushels of lime, 300 pounds of bone dust, and 700 pounds of phosphate.

Several members stated their use of lime on grass at forty to sixty bushels per acre.

Mr. Mitchell. On a neighboring lawn the Veronica has entirely overrun the grass, presenting a beautiful appearance. In another case, the free application of barnyard manure produced a profuse growth of mushrooms!

Mr. Satterthwait. White clover has the advantage of keeping down all weeds by its very compact sod. If no manure is used, there will be no weed seeds.

Mr. Graham. A gentleman in Camden limed his grass lawn and then planted bulbs—for effect.

Mr. Mitchell. A friend was much annoyed with garlic; put in a crop of potatoes, and next year the garlic was worse than before.

Mr. McGowan. It can be eradicated by hand pulling.

Mr. Satterthwait. Garlic can be subdued by securing a good strong sod.

Mr. Hayes. Red Clover will kill most weeds. In Kent county, Delaware, many farms are infested with the dewberry. Dr. Emerson sowed his land heavily in clover, and eradicated it—apparently. Then planted corn for three or four years, and the dewberry came up again.

Mr. Satterthwait. The dewberry was almost universal in our parts twenty years since. The soil was then very poor. It has since disappeared, under good cultivation.

Mr. Eadie. In Scotland a good crop of black peas sown broadcast, rots and kills all weeds. The land is then sown to grass.

Inquiries were made concerning the cow pea, and the sowing of oats with grass.

Mr. Satterthwait. Unless the grass seed is sown early it will suffer from drought. Oats sown with it shade it and protect the young growth.

Mr. McGowan. All grass should be sown in the fall.

Mr. Mitchell. It is very subject to washing by heavy rains. Approves of oats to be sown with grass.

RASPBERRIES.

Mr. Mitchell called the attention of the members to the Hornet as the best variety for all purposes.

Mr. Satterthwait took exception to the remarks of Mr. Parry at last meeting, concerning the inferiority of the finer sorts for market profit. The expense of protecting in winter is more than paid by the extra crop. The Doolittle, with him, yields no more than the finer sorts, and does not sell.

Mr. Mitchell. Mr. Knox recommends the Doolittle, Franconia and Brinckle's Orange. We are indebted to Messrs. Aubry & Souchet for the introduction of the new French varieties. Besides Hornet, the Pilate and Imperiale are very valuable.

Mr. Satterthwait. The Allen is the highest flavored of all. With him the canes are 8 feet high and loaded with fruit. It is alternated with

other kinds. Separately it often fails, as also does Reid's Monthly.

Mr. McGowen. The Allen fails with me. It is alternated with Red Cane.

AMERICAN LOVE OF FLOWERS.

BY GERMANTOWN.

In the July number of the *Gardener's Monthly* appeared an article from the *New-York Journal of Commerce*, in which we are told, that in no city in the world is the amiable fondness for flowers carried to a greater extent than it is in New York. If it were the intention to convey the idea that in New York the passion for flowers had been pushed to an unreasonable extent,—that there was an inordinate desire to be in the fashion, or to be “pelted with flowers,” in order to feel that ones friends are pleased with them, it may not be denied; but, if by amiability is to be understood that charming pleasure which springs from a real love of flowers, we must protest against New York being allowed to share any of the honors.

If there be any place entitled to pre-eminence for an honest love of flowers for any other purpose than mere show, that place is surely Philadelphia. And if Philadelphia is disposed to lay aside for once her indifference to the merits of her own citizens, and claim the precedence to sit on the right hand of Flora, to which she is entitled, she will not forget that to the old Dutch Burghers of Germantown is she indebted for the first efforts that have resulted in her present distinguished position.

Those of us who can remember fifty years ago, know how rarely flowers were seen in or about the houses of any but the wealthiest in any town of the United States; but in Germantown there was scarcely a dwelling, from the simple log cabin up to the large stone mansion President Washington lived in, but what had its cherished flowers. Flower-pots, to be sure, were rarely seen,—but cracked tea-pots, pickling jars, and dilapidated household utensils of every character were ready substitutes, and these, with the rarest of floral pets, were made to adorn almost every window in the town. The gardens were also stocked with the most beautiful flowers, brought from Germany by the growers themselves, or their immediate ancestors; and it was indeed a rare sight to find a garden or window that had not some blooming evidence of floral taste. To this day, in the old yards and gardens of old residents many plants and flowers may be found that no modern Horticulturist believes to be in the

country. Double Lilies of the Valley were here twenty years ago, and the double *Rosa lucida*, and another variety called the May Rose, probably a double variety of the *Rosa Caroliniana*, and which the writer never saw outside of Germantown, is still frequent in many a cottage yard.

All this must have had some influence on the neighboring city of Philadelphia, which has since swallowed up old-fashioned Germantown, and embraced it all within its “city limits;” but yet a good meed of praise is due to five or six Philadelphia firms particularly, who were extremely liberal to the citizens, and by their far-seeing policy and genuine love of their profession, filled the whole city with floral enthusiasm. These were Bernard Mc Mahon, McArran, Carr, Daniel Maupay, the Landreths', and Buist,—the latter of whom still lives to see the good work he was partly instrumental in forming. McArran was probably the first one to adopt the plan of raising large quantities and selling low, in order that all might procure them. Roses that usually sold for \$1 50 each, he increased extensively, and sold all through the town for 75 and 50 cents each, to the dismay of his brother florists, who saw nothing but ruin to him and them in such a course; but they soon found the increased custom more than made up for the lost figures of the high prices, and the example became generally followed; and we do not think we are far wrong in guessing that Buist must have cleared \$1000 in one year on the *Jaune des Prez* rose alone.

There may be more cut flowers used for dinner decorations, and “firing at Prima Donna's,” in New York than Philadelphia, and to as great an extent as in any city of the world, as the *Journal of Commerce* says there are; but we are assured, that “great” as New York is in many respects, in the single article of pot plants, sold for the decoration of windows, dooryards and gardens, there is not a chance of their sale favoring the New York claim to distinction. Bedding plants are sold in Philadelphia by the tens of thousands, at prices ranging from 3 to 10 cents each; and we know of one firm which does only this marketing and bedding business, whose bill for flower-pots for one season has exceeded \$1200 00.

No wish to disparage New York has dictated these lines. If she will let fashion run riot, she can do so with a floral one more innocently than in any other direction; and, indeed, it is a pleasure to read that her tastes are going in this line so profusely as it is; but simple love of fair play has inspired us to beg of our big sister, who has just awakened to the beauty and loveliness of flowers,

to look around her, and on what her less pretentious sister Philadelphia has done and is doing in the same direction, before arrogating to herself in the little she is doing, the whole of the praise.

THE YEDDO GRAPE.

BY MR. S. B. PARSONS, FLUSHING, L. I., N. Y.

There has been so much interest felt in this grape, and its introduction to this country has been so much desired, that a description of its growth and habit will doubtless interest your readers. The first account we have of it is from the pen of Mr. Robert Fortune, the well-known Chinese traveller, and was published in the London *Gardener's Chronicle*, for April 27th, 1861. He says:

"The vine of this district, which we may as well name at once the "Yeddo Vine," produces a fruit of great excellence. The bunches are medium sized, the berries are of a brownish color, thin skinned; and the flavor is all that can be desired. This grape may be valued in England, where we have so many fine kinds, and *most certainly will be highly prized in the United States of America.* A few years ago I was travelling from Malta to Grand Cairo, in company with Wm. Bryant, the celebrated American poet, and a genuine lover of horticultural pursuits. This gentleman informed me that, owing to some causes, our European vines did not succeed much on the other side of the Atlantic, and suggested the importance of introducing varieties from China, where the climate, as regards extremes of heat and cold, is much like that of the U. States.

I have never met with what I consider a really good variety of grape, and therefore have not been able to act on Mr. Bryant's suggestion. At last, however, we have a subject for the experiment, and I urged its importance on Dr. Hall, who is an American citizen, and who has already introduced a number of plants to his country from China. He enters warmly into the matter, and no doubt will accomplish the object in view.

I therefore conclude this by giving notice to your readers *to look out for the arrival of the YEDDO VINE.*"

The italics are our own.

Having seen this article, and desiring also other Japan plants, we wrote Minister Harris, who handed our letter to Dr. Hall, then in Japan. The result was, that in the spring of 1862, Dr. Hall walked into our office, and proposed to place in our hands a large variety of Japan plants, among them was this "Yeddo Vine."

We at once grafted it upon a strong native vine,

and planted it in a good soil. During the last winter it was covered with straw, and up to this time its growth is very remarkable, and scarcely surpassed by any of the native sorts. The main stem is as thick as a man's finger, and from it proceed four strong branches, seven and eight feet long; by autumn they will probably be twelve or fifteen feet. The leaves resemble those of the Delaware, while the stem is unlike any other grape known.

The vine will be left entirely exposed the coming winter. It was too small to be exposed the past winter.

There is every reason to suppose it will be perfectly hardy, because nearly all the plants which have hitherto been introduced from Japan have proved hardy in our climate.

The interest now felt everywhere in grape culture gives additional importance to the introduction of this grape; and should it prove all we hope, Dr. Hall will have rendered a great service to his country.

[This grape has been pronounced in England, but we do not now remember on whose authority, equal to the Grizzly Frontignac. Almost all Japan plants thrive even better here than in their own climate, and if the fruit be really of the superior quality reported, we heartily endorse the last paragraph of Mr. Parsons' note, without much fear as to its entire hardiness.—ED.]

RURAL NOTES.

BY WALTER ELDER.

When I travel through the country on my winter pruning tours, I see much to sadden and much to cheer one who knows how cheap, easy and simple it is to adorn rural residences, and beautify the landscape. Extensive regions are like desolate wastes: for it is seldom that one meets with a hedge-row to shelter road or field; and the fierce winds whistle through the open fences and sweep over the plains with unobstructed violence, dashing furiously against buildings, often to their injury and always to the discomfort of man and beast that inhabit them.

See yonder fine farm-house, upon such a handsome site; with barn, stables, sheds, etc., to correspond; a little beyond them is an orchard of leafless fruit trees. How bare the place looks! it may be a nice place in summer, but it is a bleak and forlorn looking habitation on a cold winter's day. If ten dollars worth of evergreen trees were judiciously planted around it, and particularly on the north and west sides, they would clothe its naked-

ness, and give it an air of comfort and pleasure during the dormant season; and when they grew up, they would give shelter, and warmth: then cows would yield more milk in winter, hens would lay earlier and later, and the young animals would grow faster, which would be worth double the annual cost of the trees.

How cheap arborial embellishments are! how many ten dollars are spent upon worthless wares!

A little farther on, and there is a neat painted fence by the wayside, enclosing two acres of lawn, studded with deciduous and evergreen trees and shrubs; near the middle is a dwelling-house, with needful buildings. The architectural beauty or deformity of the buildings are hid, and yet they have an elegant and comfortable appearance. The whole place has a clean and tidy look. Methinks a family of refined taste lives there, "whose minds are raised above the narrow rural vale." The place shines in the dreary wilderness like a bright star in the sky. I examine closer, and find there are one hundred and sixty trees and shrubs on it, which cost, planting, freight, etc., included, eighty dollars; and the flowering vines that adorn the verandah, and roses and other flowers that ornament the flower-beds around the house cost twenty dollars. Had that hundred dollars been spent upon the buildings in addition to their cost, it would have made very little difference in them; and, had they been without those arborial and floral embellishments, they would have looked miserable. How cheap then are such embellishments.

The above pictures are universal in the country; but there are many gentlemen of wealth, whose establishments are highly creditable, and give richness and beauty to the landscape. And, so rapidly are these increasing, that the Middle States, in less than fifty years hence, bid fair to vie with many European countries in rich private domains, embellished parks, and artistic beauty, as they now do with natural rural scenery.

The best seasons to plant evergreens are from the first of May until tenth of June, and from first of September until middle of October; the earlier in these periods the better, unless the early part of September is very hot and dry,—then wait until the middle of the month. I planted forty evergreens, three feet tall, the middle of last August. I dug the holes the day before, and kept them full of water ten hours: it soaked away, both downwards and sideways. When the trees and shrubs arrived, their roots and clods about them were as dry as possible. After planting gave them a heavy watering, and after it soaked down, spread dry soil

over the top, and then put a small quantity of new hay over their roots. They received no more care; and they are as flourishing to-day as if they had sprung from seed there.

ORCHARD HOUSE, AT HIGHTSTOWN, N. J.

BY AN EAST PENN FRUIT GROWER.

ISAAC PULLEN, Esq., the well known nurseryman and Peach-grower, at Hightstown, N. J., has an Orchard-house, 100 feet long by 14 feet wide, which has fruited for two seasons with a very encouraging degree of success. The house is a lean-to, cheaply built, very nearly according to the directions given by Mr. Rivers, in his work on this subject. It is heated by hot-water pipes, which probably makes it, in the opinion of many, not an orchard-house, but a forcing peach-house. Still, it may be called an orchard-house with heating apparatus.

About the first of August, the writer visited Mr. Pullen, to see how he was getting along with his new house. We found the Peach and Nectarine trees nearly all turned out of the house into the garden, in pots, and the fruit nearly all gone. Some dozen or more trees, of the late kinds, were, however, still laden with fruit, of fine size, magnificent color, and nearly first-rate quality. Mr. Pullen informed us that he had as large a crop of Peaches and Nectarines as the trees could bear, much of which he sold in New York and Philadelphia, at very satisfactory prices. The Apricots did not fruit successfully. The house was kept very moderately heated all winter, and the early peaches began to ripen about the 26th of June.

Mr. Pullen cultivates all his trees in pots, 9 to 13 inches in diameter, and plunges the pots in soil of very moderate quality, two-thirds their depth, moving them slightly once in a week or two, to keep the roots from extending beyond the pots. He uses as potting material, loam, sods, sand, rotten dung, etc., potting very firmly, and employs a good deal of liquid barn-yard manure. His stopping and pinching is not quite so close as Rivers directs in his later writings. He gives abundance of air and water, and transfers his trees to the open garden as soon as the fruit begins to color, plunges the pots and mulches them.

The success attained by Mr. Pullen is certainly complete, or at least all that can be expected. The crop of fruit on the best Peach and Nectarine trees had to be thinned more than one-half; the balance ripened well with the most brilliant color and bloom, and nearly the highest flavor. From four to six weeks were gained in the period of ripening.

Mr. Pullen cultivates the peach, as nursery stock, on a large scale, and also orchard-house trees in pots, cut back and pinched, so as to be ready for immediate fruiting.

As the result of our observations, we formed the opinion that a heated orchard-house may be made entirely successful, in this climate; and that it would be an elegant and not very costly luxury in a gentleman's garden,—not more costly or troublesome than foreign grapes or flowers under glass, and quite as gratifying.

New or Rare Plants.

CHRYSANTHEMUM LACINIATUM.—Mr. Standish. Bagshot. This very distinct Japanese variety of the Chinese chrysanthemum, which has white flower-heads, composed of fringed tubular florets, and is of a very elegant character, had already obtained a second-class award. It was now exhibited in a much finer state, and was thought worthy of a higher award, for its distinct character, and for its adaptation for decorative purposes. It is of a free-flowering and dwarfish habit.

CHRYSANTHEMUM STRIATUM.—Mr. Standish. A showy, large loose-flowered Japanese variety, remarkable for its variable-colored flower-heads, the florets in some being elegantly striped with red on a white ground, in others wholly white, or sometimes wholly red. It was rewarded for its showiness and distinctness of color.

CHRYSANTHEMUM GRANDIFLORUM.—Mr. Standish. This, which was thought by some members of the committee to be the same as the "Taselled Yellow" formerly cultivated, was remarkable for its very large flower-heads, some of which on the plant exhibited were fully five inches across. Mr. Mr. Fortune, by whom it was sent from Japan, states that it measures seven inches when well grown. It was remarkably showy, the heads being loosely filled with long pointed strap-shaped florets, of a brilliant yellow, rendering it a valuable decorative plant.

CHRYSANTHEMUM JAPONICUM.—A very curious and interesting, scarcely ornamental, variety of Chinese chrysanthemum, imported from Japan. It had peculiarly cut-leaves, and the flower-heads, which were of a brownish-red tipped with yellow, were formed of slender tubular curved florets, and

a good deal resembled those of the *Carthamus* or *Safflower*, only somewhat larger. They were borne on longish slender stalks.—*Gard. Chronicle*.

MUTISA DECURRENS.—This beautiful climber was discovered by Mr. Richard Pearce, at an elevation of 6000 feet, on the sunny sides of the mountains of Valdivia; and having withstood the past three winters in the open ground without the slightest protection, may be pronounced perfectly hardy. The flowers, which are produced in great abundance, and measure from 3 to 4 inches across, are of a most beautiful orange-scarlet color, each flower remaining for a period of nearly three weeks in bloom.

It is almost impossible to give a correct description of the magnificence of this plant when seen in full bloom. It must be seen to be justly appreciated. It was exhibited at a meeting of the Royal Horticultural Society, and has also been figured in the *Botanical Magazine*, October, 1861.

OURISIA PEARCEI.—A new, beautiful, and perfectly hardy herbaceous plant, introduced from Chili by Mr. Pearce, after whom it has been named by Dr. Philippi. It has dark red stems and leaf-stalks. The leaves are flat ovate, and crenated, and the flowers, which are produced in abundance on erect and elegant stems about a foot in height, are of a bright crimson color, with distinct blood-red markings on the lip.

In general features it somewhat resembles *Ourisia coccinea*, but far exceeds that species in the beauty of its appearance. It cannot fail to be admired as a hardy herbaceous plant. It is figured in the *Floral Magazine* for July, 1863.

BAMBUSA VARIEGATA.—A very ornamental, variegated species, introduced from Japan, seldom growing more than 15 inches in height. Its dwarf habit and distinct variegation render suitable for forming garden edgings or for pot culture.

NEW FERNS.—The attention paid to Ferneries in America induces to give some account of these new ones, which our importers will no doubt soon have for sale:

Acrophorus affinis (Moore).—A large-growing Davallioid Stove Fern from Borneo. It has a thick scaly rhizome creeping on the surface, and producing large finely divided fronds 2 to 3 feet long. These fronds are elongately triangular, elevated on long green stipites, tripinnate or almost quadripinnate.

nate, with small oblong close linear acute single toothed segments.

Adiantum Chiliense (Kaulfuss)—The Chilean Maiden-Hair Fern.—A beautiful species from Chili. It has polished ebony colored stipites and rachides, and fronds a foot or more in length, triangular in outline, subtripinnate, with large smooth roundish trapeziform pinnules, simple and finely denticulate in the sterile parts, somewhat lobed and notched where fertile, the sori reniform, lying in the sinuses of the lobes. The smooth looking glaucous green broad-pinnuled fronds have a very distinct and remarkably handsome appearance.

Adiantum scabrum (Kaulfuss)—The Silver Maiden-Hair Fern.—A delicately colored Silver Fern from Chili. The plant is of dwarfish habit, with oblong fronds, having slender black stipites and rachides; they are bipinnately divided, with rather large roundish or somewhat trapeziform pinnules, denticulate at the margin, and sprinkled on both surfaces with farinose powder.

Adiantum sulphureum (Kaulfuss)—The Golden Maiden-Hair Fern.—From Chili. The fronds, which grow in thick tufts, are about a foot long, and have the slender ebony colored stipites and rachides usual in the genus; they are triangular ovate in outline, tripinnately divided, the pinnules rather small, roundish, with the margins lobed, and elegantly toothed, each of the lobes being notched, with a reniform sorus in the sinus. In addition to these features, the whole under surface is dashed over with a Golden-colored powder, as in the *Gymnogrammas* and other Gold Ferns.

Cheilanthes mysurensis (Wallich).—Collected in Nagasaki, Japan, by Mr. John G. Veitch. The plants from dwarf tufts, the fronds growing six or eight inches or sometimes a foot in length, narrow lanceolate, bipinnate, the pinnules oblong, and crenated on the margin, where the fructification is produced. The fronds are very shortly stalked, the rachis and stipes being of a dark purplish brown, and clothed with scales; well suited for small Fern cases.

CLEMATIS FORTUNI, (Moore), *Gard. Chronicle*, 1863, p. 460.—Leaves ternate, the leaflets coriaceous cordate very obtuse, sparingly strigose beneath, the petioles with a few long weak hairs; flowers terminal, multiple (about eight rows of sepals) with an involucre of several petiolate obtusely cordate simple leaves; sepals very numerous, costate, and

venose, white, the outermost greenish externally, oblong-lanceolate, apiculate, tapered into a distinct slender claw, the claw and outer surface of the lamina pubescent with soft entangled hairs; ovaries numerous, with short caudæ which are silky with fine tawney hairs.

The accompanying figure will give a better idea than any words can do of this fine and remarkably distinct species of Clematis, which has been recently introduced from Japan by Mr. Fortune, and has blossomed during the present summer with Mr. Standish, at the Royal Nursery, Ascot. The foliage a good deal resembles that of *C. lanuginosa*, but with this it unites flowers of a most unique character, the most remarkable feature of which is that the sepals, which are not large, though very numerous, are furnished with a distinct slender claw fully half as long as the broader or lamina being about $1\frac{3}{4}$ inch long, of an oblong-lanceolate form with a small thickened point, the claw about an inch long, and both the claw and the exterior surface being clothed with fine soft loosely entangled hairs, much less developed however than in *C. lanuginosa*. Close beneath the flower, at the top of the pedicel, are produced several simple stalked leaves, which form a kind of involucre; these leaves are very bluntly cordate, and resemble the leaflets of the more perfect leaves; they are indeed occasionally themselves ternate, when they differ little from the true stem leaves.

The plant appears to be one of vigorous habit, and its flowers are very enduring. When fresh they emit a quite agreeable kind of neroli scent; and even on the imported plants cultivated in pots, and therefore probably somewhat restricted in development, they measure nearly six inches across, being made up of some seven or eight rows of the long-clawed sepals already noticed, surrounding a large central tuft of short-tailed greenish ovaries, which, together with the tails, are clothed with silky appressed hairs, having a light tawny color, and becoming shorter upwards. The flowers, which in the earlier stages have the sepals closely incurved, are at first greenish white, which tint is retained at the back of the outer sepals, the inner ones becoming gradually bleached, so that by the time the flower is fully developed it is nearly white, while in age it assumes a faint tinge of magenta rose.

This Clematis must be regarded as one of the finest additions to the ranks of hardy flowering plants, which have resulted from the opening up of the Japanese empire, and deserves to be associated with the name of its enterprising and most successful introducer.



[CLEMATIS FORTUNEI.]

The Gardener's Monthly.

PHILADELPHIA, SEPTEMBER, 1863.

All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOP, Box 406 Philadelphia."

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NEW SEEDLING FRUITS.

Correspondents occasionally complain of what they term "humbugs;" but the greatest of all humbugs is ignorance. This we are continually guarding our readers against, and we believe with tolerable success. But there is yet one thing on which the public mind is not educated to the point it should be, namely, the value of seedling fruits.

One of the commonest recommendations with a new fruit is that it is "enormously" productive. But all seedlings are very productive. After they have been some time under the propagator's hands they settle down to a more moderate scale. This is well known to florists: no verbena from cuttings ever grew with the luxuriance of a seedling in its first year of flowering, or produced such a profusion of bloom; nor does the mignonette, heliotrope, pansy, or, indeed, any thing we know. It is a characteristic of all seedlings, in comparison with the same plant after propagation in other ways, to be "enormously productive."

Then we may be told that it is "extremely" hardy. But here again is a condition frequently associated with the vigorous hardihood of youth. Age brings with it a train of maladies, and these invariably tend to enfeeble the constitution and render it particularly liable to injury from external causes. Cold, especially, acts easily on weakened vitality. There is scarcely a fruit now on our lists that has any reputation for being "tender," but which had the character on its first introduction of being "very hardy." This fact is notorious.

"Immense" size is also a characteristic of the seedling state, which, with the loss of youthful vigor, is correspondingly diminished. Then there is flavor, which is remarkably variable, depending not only on soil and treatment, but the comparative health of the plant itself. It requires a perfectly healthy plant to produce fruits of excellence. A grape from a ringed branch loses its quality, and the same holds good of any other injury to vitality.

With all these considerations in favor of seedling fruits, how easy is it to deceive oneself and then others with a "new" seedling? It is, indeed, a very easy thing to raise a "first-rate" fruit; and not difficult to produce one for the time being that will seem better than any thing we know; but one that will stand the test of time and then prove superior in some good quality to any thing out, is a rarity worth a fortune to any one who is fortunate enough to raise it.

We saw a large lot of seedling strawberries in bearing this year on the grounds of an eminent nurseryman, that were all *very fine*. There was not a poor bearer or one with an indifferent fruit among the whole of them; but not one that we could honestly feel would prove superior to what we already have.

We do not know of any better way to guard against disappointment in new things, than to receive them all with a great deal of caution. The opinions of societies amount to very little. The judges are like court juries, who have to leave their own knowledge of the case at home, and decide on what is merely before them. Last year a committee of the Pennsylvania Horticultural Society had to award the premium to Trollope's Victoria strawberry, because it happened to be larger and better flavored than any others there; and yet we know that not one of that committee would plant that variety,—on account of other faults which cannot be exhibited with the fruit. In fact, there should be a new class of fruits. Our Pomological societies discuss at their conventions what are the best fruits for amateur cultivation, and what are best for market growers; they should also add what are the best fruits for exhibition purposes? for undoubtedly the best here are often unworthy of the notice of either the amateur or market gardener.

We hope no one will feel discouraged in raising seedlings. There is room for very great improvement; and there is no reward so great in any branch of discovery as in the creating of really improved fruits. But for the sake of the introducer, and the whole public, it is very desirable that much more care should be given to the subject before new fruits are so pompously heralded as they have been.

THE HOLLYHOCK.

It is surprising that the Hollyhock is not the most popular plant for decorating American gardens. It suits our climate remarkably well; is of very easy growth—an essential character in a popular American plant—and is capable of being used

with great effect, as the ladies would say; in the making up of summer flower-garden scenery.

But there is one particular point in which the effect produced by them is perfectly charming, namely, in combination with evergreens.

The only fault we ever knew evergreens charged with is, that in more than moderate quantity they make summer scenery gloomy. They have not that airy elegance,—the continual variations of form, color, and shade,—which characterize deciduous trees. Dark and sombre, when the summer breeze cools you, and you would have all created things with you enjoy it; the evergreen does not seem grateful, or even respond to the invitation but in a low melancholy moan. It blossoms not in beauty; and when all around in nature is gay and happy, it stands in its dark drapery and smiles not. Evergreens in summer are the misanthropes of vegetation. Like their counterparts among men, they have their uses and their lessons; but we would have all laugh when we are in a merry mood; and when the winter of our discontent arrives, then tears of sympathy please us,—then evergreens attach us warmly to them, and above all. No winter garden scenery is pretty without plenty of evergreens. In our cold climate particularly, for this purpose, gardens can scarcely have too many of them.

To give a summer grace to the evergreen, nothing surpasses the Hollyhock. The outline of a mass of flower-stems is conical; and having few leaves, and large flowers, towering up aloft and willing to take support from any stronger arm, it is just the one thing made for it. It has little green of its own—the evergreen has enough for both,—it is a happy marriage.

Even in masses and borders of deciduous shrubs, the Hollyhock may be introduced with telling effect. We have seen them command in this character, as a theatrical critic would say, unbounded applause,—for most shrubs are but a few weeks in flower, and it requires a pretty large variety to furnish a succession of bloom; whilst the Hollyhock blooms through most of the season, and, no matter how well the shrub may grow, will keep its head well above the springing tide of foliage through all the summer time.

And then for its own sake the Hollyhock is worthy of our admiring care; for no florist's flower has been more accommodating in disposition to improve as we want it, than it has been. From a lean, thin visaged, single-flowering plant, it has progressed to the double state; and the double flowers are as round as the dahlia, and as full of

petals as a Cabbage-rose. Then there are all shades of colors, from white and yellow to purple and crimson, and variegated, spotted and variously mottled to boot. A basket of flowers, made up of Hollyhock flowers, and arranged with a ladies nice discrimination and taste, is a charming affair.

The Hollyhock is very easy of cultivation. It grows in any soil but one too rich: in that it produces too many large root leaves, and the flowers are not good. The seeds ripen in succession from July to September, and should be sown as soon as ripe in any common garden soil, when they will bloom the following year. If not sown till spring, they will remain over a year without flowering. The seedlings do not always produce flowers exactly like the parent plants; but they do very nearly,—and the very double ones are very constant in this respect,—the single ones proving the most variable. Besides being raised from seed, nurserymen, when they wish to get a large stock of any one kind, increase it by cuttings of the flower stems, made just about the time the Hollyhock opens its first flower. The stems are cut up into single eyes, as in the grape-vine, and inserted in light soil in a partially shaded place.

The Hollyhock is a tolerably hardy plant, but is greatly benefited in common with all herbaceous plants, by having a few dry leaves, brush-wood, or some other light stuff thrown over it, just to keep off the warm sun in winter. Whenever the snow will do this for you, you can have no better covering.

FURNACES INSIDE GREENHOUSES.

We have a friend who has been a warm supporter of the theory that furnaces should be always inside the greenhouse, as a matter of economy. There is of course the disadvantages of dust and other objections; but on the simple matter of economy it is urged that in outside furnaces much heat is lost, which is gained by having the furnace inside the house.

This is so very plausible a theory that "our friend" is not, by a long way alone in defending it. Hundreds have their furnaces inside, supposing they are saving much heat by this course.

It happens, however, that in spite of all the care in fixing up, the greenhouses referred to are never very warm in winter. Plants, though they continue very healthy, will make no growth in them, and, as the house is very tightly glazed, it has been something of a mystery what has gone wrong.

Mr. Joseph Kift, an intelligent florist of West Chester, Pa., in passing through one of these

houses recently, suggested a probable cause; and we think it is so reasonable, as to be worthy of consideration by all who have inside furnaces.

Every one knows that cold air, by reason of its superior weight, displaces the lighter warmed air, which is carried forward through the flue by this pressure of the cold air. When the furnace is inside of the house all the air which rushes into the flue is drawn from the greenhouse, and of course colder air follows, or as one would say, is drawn through the laps of the glass or other crevices to fill its place. A large quantity of air must go through a flue during a night's burning, and when we reflect that this is supplied from the greenhouse, and that all this must be resupplied in some way from the external air, it will be readily imagined what an immense influence is exerted on a cold night in depressing the temperature of the greenhouse.

But it may be said, that the warmer air of the greenhouse, when it is drawn into the flue, will not cool the flue so much as the colder external air would do; and so after all the flues would be easier kept warm than if the furnace were outside and the flue at once in connection with the open air. The best answer to this is a practical one, namely, that in the houses referred to the temperature can rarely be made to go above 50°; and we have seen plants on a table over the furnace door, and about six feet above it frozen solid, when the furnace door below was red hot. We could not have believed such a thing possible on any theoretical reasoning, nor by any testimony short of our own observation; and the fact is susceptible of only one explanation, namely, that the cold air is "drawn" down through the glass above the plants, and towards the furnace door.

Altogether we come to the conclusion that placing furnaces in the house, in order to economize heat, is "a saving at the spigot and wasting at the bung" affair. We should always have the furnace outside, then what heat is imparted by the flues, remains in the house without risk of being again "drawn" into the furnace; and subject only to the expected loss by radiation, and penetration through the laps.

INSECTS.

We strongly advocate physical over moral force for the protection of our gardens from insect depredations. It has been the fashion to appeal to the prejudices of insects, by scares of various kinds, and by innumerable forms of noxious vapors likely to injure their feelings, and bribe them to prey on

your neighbor's goods rather than your own. We have no faith in this pacific treatment. We are for open war,—and there is no war so successful in putting down insects as that which crushes them entirely out.

Birds are all very well as allies in this war of extermination; but boys, without the fear of the law before their eyes, will shoot them; cats will kill them; and even man looks suspiciously on the amount of seed and fruit they exact as the price of their alliance. They may help fight your battles, but they will ask some nice thing as the price of your independence.

"Who would be free themselves must strike the blow." Who would clear his ground of insects, must look after them himself. Hand-picking, practiced in time, is the best of all remedies. We know a nurseryman, who once had his greenhouse badly infested with red spider; he has a very clean collection now. His remedy is to spend an hour a week in going over every plant to watch for the first sign of red spider. The finger and thumb soon decides the fate of the marauder. If this can be done with so small an insect, why not in caterpillar raids, and the attacks of all the larger things.

One of the very best instruments for applying the last sad sentence of garden law to insects is a Garden Engine, and plenty of water. The forcible application of this instrument washes of large quantities of larvæ that are unable to regain the advantages of position that will fit them to become full grown depredators. We need mention no one machine in preference to another; but the most powerful that can be procured will be the cheapest. In large cities fire engines can clean the street trees; and in gardens and small lots, something of the sort is always at hand.

For those who wish to have fruits without the sweat of their brow, this article will be of no service. Insects, as well as thorns and thistles, will the earth produce unto them; but to him who is willing to bend to the eternal law, and labor for what he eats, insects need not trouble him greatly.

EXHIBITION OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.

Encouraged by the success of the exhibition last September, under very unfavorable national circumstances, the Pennsylvania Horticultural Society has determined to try to get up this fall a grander exhibition than they have had in this city for many years.

They have taken the grand building of the Academy of Music, and will have the parquet floored

over, and the whole fitted up regardless of expense. Including the premiums offered, their outlay will probably exceed three thousand dollars. They have engaged the Academy for the whole week; but the exhibition will be open to the public on the 15th, 16th and 17th of September.

The Society has acted with great liberality in opening its Halls to competition freely to the whole Union. It does not ask any fees for entries, or require competitors to be members of the Society.—Its only object is the general good of Horticulture all over the Union, even at the pecuniary expense of the members of the Society. We trust that this public spirited course will be met by Horticulturists all over the Union in a similar view, and that growers of fruit, flowers, or Vegetables from every State within reach will send or bring what they have of superior quality.

We understand that, where any thing particularly valuable is offered to the Society for exhibition, the Society will pay the expenses of transportation. Particulars can be had by addressing the Secretary, A. W. Harrison, Esq., Philadelphia, or the Chairman of the Committee on Exhibitions, D. Rodney King, Esq.

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.

VARIEGATED-LEAVED TREES AND SHRUBS.—We have received a set of specimens, with the following note, from Messrs. Ellwanger & Barry, of Rochester, N. Y. :

“We send you by Express Variegated Foliage of the following, viz. :

Ash, three varieties.

Bird Cherry (*Prunus padus*) two varieties.

Horse Chestnut, a seedling of ours.

Maple, two varieties.

Mountain Ash, two varieties, both our seedlings—both beautifully marked.

Magnolia acuminata, one variety, our seedling—which we think will prove the finest Variegated-leaved deciduous tree.

Oak, two varieties—Turkey and English.

Salisburia, one variety.

Thorn, variegated weeping.

Willow (*Caprea tricolor*), very good.

Cornus mascula, variegated.

St. Peter's Wort, finely marbled with gold and yellow.

Cissus quinquefolia variegata, a good old plant.

Among these the Variegated Sycamore and Magnolia, having large foliage and clear well defined permanent variegation, deserve particular notice. The Mountain Ash is a great novelty, and will, we feel sure, be permanent and desirable. Many of the foreign novelties of this class are worthless, being either too delicate to bear our sun, or inconstant.

[This is a very interesting collection. The great fault with most of our variegated-leaved trees and shrubs, is that the white or yellow portions soon become brown, and the effect is of a tree scorched, rather than the pleasing one of a beautifully variegated tree. Of these before us, the Variegated-leaved Turkey Oak, the Variegated British Oak, and the Salisburia, look as if they would not give way to this failing; and we should judge them to be among the very best of the beauties. *Fraxinus acuminata* “ponctue,” is equal to the real aucuba, and better than the *F. acuminata aucubæfolia*, which is also with these specimens. Another Variegated Ash, having the appearance of being a variety of the *F. lenticeifolia*, is of the prettiest shade of combined green and white we have seen, but appears very tender, and we should judge would easily scorch.

The Narrow-leaved variety of *Prunus padus* is very peculiar in every respect. The one Broad-leaved is spotted like the Aucuba-leaved Ash.

Some of the varieties named were not in the box. *Cornus mascula variegata*, for instance. This may be *Cornus sanguinea variegata*, if so we have seen it, and can say it is one of the best variegated shrubs to stand the sun we have.]

ASPARAGUS BEETLE, &c.—A correspondent from Itasca, Minn., writes :

“I notice much complaint of the Asparagus Beetle. I am a stranger to the destroyer. I notice on some, of my stalks a little white deposit containing eggs—presume it is the work of the Beetle. I notice that my hens visit my bed, (I have now but half an acre), every-day, and busy themselves picking something from the asparagus—perhaps they may be useful to us. Cut worms destroy great quantities of plants this season; never knew them so bad. What is the remedy to apply to the acre?”

Striped bugs have been very scarce this season. I use boxes covered with musquito netting, but

have have had no occasion to cover the vines this season."

[We believe no good remedy has yet been discovered for the Cut-worm, the ravages of which have not been so serious heretofore as this season. The subject is worthy of serious attention.

We shall be glad to hear from our correspondent often.]

VARIEGATED-LEAVED TREES AND SHRUBS.—A correspondent asks for a list of the most desirable of these :

Of *Deciduous Trees* we would have Aucuba-leaved Ash, Spotted-leaved Ash, Purple-leaved Beech, Silver-striped Beech, Aucuba-leaved Bird Cherry, Variegated Horse Chestnut, Silver-striped Hornbeam, Silver-striped Maple, Golden-leaved Maple, Red Colchican Maple, Silver-striped Negundo, Silver-striped Oak, Gold-striped Oak, Purple-leaved Oak, Variegated Ginko, Tricolor Willow, Purple-leaved Elm, Purple-leaved Sycamore, Variegated Osage Orange,—besides others named in the list of Ellwanger & Barry, given on another page.

Deciduous Shrubs—Purple-leaved Hazel, Variegated Dogwood, Variegated Philadelphus, Variegated Elder, Variegated Pyrus japonica, Golden Spiræa, Purple Berberis, Variegated Althea, Variegated Currant, Var. Downing Gooseberry, Var. Hydrangea, and Var. Snowberry.

AMERICAN TEA.—*P. Clinton Co., Pa.*, asks: "If not the Chinese tea, what is the plant referred to in the newspapers as being found in Pennsylvania?"

[We do not know, but suppose it to be the *Ceanothus Americanus*, which was used as tea by our revolutionary forefathers, after they had resolved to use no tea that paid a tax to the British Government. The only reason that we ever knew for using it as a substitute for Chinese tea, was that the leaves somewhat resemble the Chinese tea in shape. So far as the infusion is concerned, it is as good as rose leaves, plum leaves, ash leaves, or the other leaves that have been known to be used in adulterating Chinese tea. The *Ceanothus* is not confined to Pennsylvania, but grows along the whole Atlantic slope, from Canada to Florida.

CATHARINE PEAR—*A California Subscriber.*—Is the "Catharine" Pear, early and late or both, of the Philadelphia markets, the English or French Jargonelle? If not, what are they?

[The Early Catharine is not as large a pear as the Jargonelle, and quite different. It is the same

as the Early Rousselet of the English. The Late Catharine is not of the Rousselet section at all, but appears to be a native pear. It is mostly confined to Philadelphia, where it is valued rather for the large crops of fruit it is nearly sure to bear annually than for any better property or quality.

HALE'S EARLY PEACH—**VALUE OF A HORTICULTURAL JOURNAL.**—A correspondent from the Pacific writes that the information he has derived from the *Gardener's Monthly*, during the last two years, in relation to Hale's Early Peach alone, is worth \$500 to him.

The earliest peaches in his market, he says, bring 75 cents to \$1 per pound. "I am now (June 25th) sending apricots, and Early Harvest and Red Astrachan apples to market, each selling for 25 cents per pound. Peaches will be ripe in about four days."

SEEDLING PETUNIAS.—A collection of seedlings of the Zouave pattern, from Mr. Louis Mittag, Ravenswood, L. I., N. Y. Very pretty, and fully equal to any of this type we have seen.

Books, Catalogues, &c.

THE AMERICAN JOURNAL OF SCIENCE AND ARTS. By Professors Silliman and Dana. The July Bimonthly number contains a continuation of Prof. Barnard's notice of the Hydraulics of the Report on the Mississippi River, of Humphreys and Abbot. The Flora of the Devonian Period in Northeastern America, by Dr. J. W. Dawson. New facts and conclusions respecting the Fossil Footmarks of the Connecticut Valley, by Edward Hitchcock,—besides other interesting articles on astronomical, chemical, and geological subjects, and the usual full chapters of miscellaneous Scientific Intelligence.

PROCEEDINGS OF THE PHILADELPHIA ACADEMY OF NATURAL SCIENCES, for June.—Contains mostly descriptions of new snakes, birds, shells, and other interesting subjects that are continually coming into the possession of this energetic society. This number is of particular interest by a contribution from the pens of Dr. T. B. Wilson and John Cassin, "On a Third Kingdom of Organized Beings." The authors remark that hitherto but two great classes have been recognized—the animal and the vegetable—and say: "In our opinion it may be demon-

strable that the first assumption of life manifests itself in objects constituting a primary great class or kingdom of more simple organization than either the animal or vegetable kingdom, and possessing also an equally characteristic specialization in its structure and functions."

They would make three great classes, and the following extract from the body of the article will serve to show the scope and character of the essay:

"The organs and corresponding functions which seem to characterize these three kingdoms, and to become specialized and dominant in the organization of each, are as follows:

1. Organs for the continuation of the species, the function of which is Reproduction.
2. Organs for the preservation of the individual, the function of which is Nutrition.
3. Organs for external relations and self-consciousness, the function of which is Sensation.

The Reproductive and Nutritive functions are common to all organized beings, and so, probably, also is the Sentient function, though manifesting itself only in an incipient or rudimentary manner. The Reproductive function, however, beginning with mere cellular conjugation, becomes specialized first in a great group of organized beings of more simple structure than either Vegetables or Animals, which we regard as eminently and demonstrably a primary division or kingdom, and apply to it the name *Primalia*. In this kingdom organs of Reproduction are temporarily formed, and no other. In the *Vegetabilia*, those organs become of greatly increased importance, though not permanent, and in the *Animalia* they present a still higher organization, and in the higher sub-kingdoms attain permanency of structure.

The Nutritive function, beginning also in the cellular structure of our kingdom *Primalia*, is in that group quite rudimentary, so far as relates to specialization of organs, but in the kingdom *Vegetabilia*, this function and the organs performing it, especially the organs of respiration and circulation, become specialized and assume an extraordinary degree of development. Ascending to the kingdom *Animalia*, the organs of Nutrition become more numerous and more highly organized in their structure, but the organs of Respiration are not developed to such an extent as in the *Vegetabilia*.

That the Sentient function is also common to all organized bodies is presumable, or to be inferred only, from the fact that is manifested in greater or less degree in the two first kingdoms, *Primalia* and *Vegetabilia*, in sensibility to light, to thermal or to meteorological influences, and occasionally to oth-

er external influences. It is, however, generally held by Anatomists, but not without exception, that no organs of sensation are demonstrable in either our group, *Primalia*, or in the *Vegetabilia*. In the kingdom *Animalia*, and in that kingdom only, these organs are palpably most highly developed and specialized in the Nervous System. We recapitulate our views in the form of a corollary:

1. The Reproductive organs are first specialized in the kingdom *Primalia*.
2. The Nutritive organs are first specialized in the kingdom *Vegetabilia*.
3. The Sentient organs are first specialized in the kingdom *Animalia*.

The possession of an organization exclusively providing for Nutrition and Reproduction characterizes the first and most simple forms of life. This organization for Nutrition and Reproduction, and these functions only, is the especial character of the first of the three primary divisions or kingdoms of organized beings, the kingdom which we have named *Primalia*. In that group there are no other organs than those performing the function of Reproduction, and the structure is exclusively cellular without vascularity; or, perhaps it may be more properly stated to consist of mere uncellular aggregation. The possession of organs for, and the first development of the function of Reproduction is the specialization of this kingdom.

The next great division or kingdom is marked by the high development of the organs performing the functions of Nutrition and the superposition or superaddition of organs providing for the co-operative or identical functions of Respiration and Circulation. The possession of organs providing for Nutrition and Reproduction, Respiration and Circulation, and these only, characterizes the great group of Vegetables or kingdom *Vegetabilia*. In this group the vascular structure appears for the first time and continues to characterize it in all its modifications. The possession of organs for performance of the function of Nutrition in its highest development is the specialization of the kingdom *Vegetabilia*,

The last or most highly organized kingdom presents an exclusive and peculiar character in the nervous system and its sphere of functions, embracing all the operations and relations of the senses and of the muscular system, superadded to the organs and the functions of the two preceding groups. The possession of organs for Nutrition and Reproduction, Circulation and Respiration, and for Sentient, Voluntary motion, and all other functions and relations of the Nervous System, characterizes the great kingdom *Animalia*. Its specializations

is the possession of and the high development of the Nervous system.

In imitation of the Linnean formula these three kingdoms may be characterized as follows:

ANIMALIA, corpora organista, generantia, spirantia et sentientia;

VEGETABILIA, corpora organista, generantia, spirantia, non sentientia.

PRIMALIA, corpora organista, generantia, non spirantia, nec sentientia.

As above intimated, the difficulty in the hitherto attempted definitions and in the systematic arrangement of the kingdoms *Animalia* and *Vegetabilia*, on the antecedent supposition that these two kingdoms ought to include all organisms that now exist, or have ever existed, has arisen from the impossibility of incorporating indisputably into either, many of those belonging to our third kingdom, *Primalia*. It is composed of orders and classes of existences, of which some have been very generally assigned to the Animal, and others to the Vegetable kingdom; and others again which have been variously and doubtfully regarded as belonging to one or the other. All organisms included in this kingdom are of cellular structure only, and possess the functions of Nutrition and Reproduction, as above defined, and no other; and all the groups properly of this kingdom are, in our opinion, readily demonstrable, as having a greater degree of relationship to each other than to any groups whatever in the other two kingdoms. This circumstance is held, very properly, as of the first importance in all classifications. With this first, but quite independent great group recognized and understood, there is, very probably, no difficulty whatever in readily defining not only the three great groups of organized beings, existing in Nature, but all subordinate groups belong to either. We regard our third group as a Kingdom, and of the same rank or grade in classification as the two great groups which are universally admitted by naturalists under that designation.

It is now a matter of common information to men of science, that all organized existences are composed of, and resolvable ultimately, by anatomical and microscopical analysis, into cells, and that the cellular structure prevails as a primary form or basis of organization alike in the most simple and in the most complicated organisms. Those cells seem to be the very first forms of organization and life, and possess a singularly independent vitality and power of increase or reproduction, whether isolated, or nearly so, or existing in any amount or form of aggregation in the higher vegetables or animals.

They seem to be even capable of assuming, or re-assuming, individual and independent existence after having been previously and originally merged or aggregated in the vascular structure of the two higher kingdoms, *Vegetabilia* and *Animalia*, as well as in the lower non-vascular kingdom, *Primalia*. This seems to be the case in what are termed animal and vegetable infusions.

The organisms constituting the kingdom *Primalia* are essentially to be regarded as aggregations of cells entirely capable of nutrition and propagation, or increase, but without any part of their structure being traceable as vascular in any degree. These organisms are the primary forms of life and organization, and have not the distinctive characters or "super-additions," as termed by Professor Owen, of London, of either plants and animals. "When a certain number of characters concur in the same organism," says that learned gentleman, "its title to be regarded as a 'plant,' or an 'animal,' may be readily and indubitably recognized; but there are very numerous living beings, especially those that retain the form of nucleated cells, which manifest the common organic characters, but without the distinctive super-additions of either kingdom. Such organisms are the *Diatomaceae*, *Desmidiaceae*, *Protozoici*, *Volvocinæ*, *Vibriones*, *Astasiæ*, *Thalassioleæ*, and *Spongiæ*, all of which retain the character of the organized fundamental cell, with comparatively little charge or super-addition."—(Hunterian Lectures, p. 8, London, 1855.)

GEOLOGICAL EVIDENCES OF THE ANTIQUITY OF MAN, with Remarks on Theories of the Origin of Species, by Sir Charles Lyell, F.R.S.

This is a large octavo volume, of over 500 pages, and has just been republished in this country, by Geo. W. Childs, Philadelphia. We have had time only to take one hasty perusal of the volume, and to carefully reread but half of it. We have given an English notice, and now give the American point of view by Professor Dana, in the last number of *Silliman's Journal*:

"Man is the now absorbing subject in science. Geology and zoology are bending themselves towards archæology, in order, together, to illustrate his origin and antiquity. Sir Charles Lyell presents us, in his new volume, a review of the progress which investigation has already made; and the extent to which the work has sold, both in this country and Britain, show that in preparing it he has responded to a public demand. He reviews at length the geological developments of the few years past bearing on the subject, stating the facts with

discrimination and fairness, and with all essential details. It is a work, therefore, of real value; and when science has gone forward to established conclusions, it will stand to mark a stage of progress in the important investigation.

The subject is so new that it is not reasonable to regard the work as other than an exhibition of the existing phase of this branch of science. The calculation of time from geological evidence is a mathematical problem involving many variables of unknown limits, and hence all approximations are necessarily rude. *Change of level* is one of these variables, of vast influence. Geology proves it to have been in progress in all time; and even, since the Romans were in Britain, a part of Scotland has been raised 27 feet. The interior of a continent may be supposed to have changed some scores, or even hundreds, of feet in a single period, without doing violence to geological probability. This, then, is one variable affecting seriously all calculations from alluvial or delta formations. For an elevation from such a cause would increase the condensation of moisture about the heights, enlarge rivers, augment their eroding and transporting power both by increasing slope and amount of water, and thereby rapidly thicken the resulting deposits. Moreover, the same action, either in high latitudes or in low, may change, as Lyell has shown, the climate of an entire continent. This is one example of a variable, of wholly unknown limits of variation;—and one affecting calculations from coral reefs and seashore formations, as well as from alluvial beds. It is sufficient of itself to show that the future has yet much to do, before present inferences can command full confidence. Moreover, the doubts connected with the Abbeville deposits, show that there are still other variables or unknown quantities to be considered.

The later part of the volume is occupied with the Darwinian hypothesis with regard to the origin of species, which is presented with an evident leaning towards its views. The hypothesis accords with the Lyellian *uniformitarian* canon, that existing causes *under their present intensity* are sufficient to account for all past events. That caution which leads the author to hesitate before the most obvious generalization in geology, on the ground that *all* facts are not yet known, here readily yields, and the conclusion that creation has been going on since Man as rapidly as in preceding time, and in the same way, although it has no decisive facts to support it, is accepted with favor. The above canon has done the science good service; but the whole course of geological history is against its too rigid application.

We are told that judgment with regard to the transmutation hypothesis is applied to the derivation of Man from Apes should be suspended until Africa and the East Indies have been searched for the missing links. Inductive science says, on the contrary, have no faith in any hypothesis of the kind until the missing links are found. *Facts, then faith*, is the motto for science.

The proper method in geology is to present generalizations and conclusions, just as they naturally flow from known facts—using the *ignorance argument*, not to set aside obvious deductions from the general array of facts, but to fix the limits of confidence in them; and, then, to modify these generalizations, as time moves on, wherever, and just so far as, this may be required. The uniformitarian canon, in our view, strikes in the head this method, and sets up an assumption in place of an induction.

AMERICAN PHRENOLOGICAL JOURNAL. Fowler & Wells, New York.

The first number of the 38th volume is now before us. To make a journal popular it is necessary first to furnish matter that will interest the individual man; secondly, that which will interest him in his neighbor. The publishers of this magazine seem masters of the whole secret, and the result is a popular and prosperous career.

CATALOGUES.

A. S. Fuller, Brooklyn, N. Y. Strawberries; with full and valuable hints for their cultivation.

Reiter & Maddocks, Toledo, Ohio. Fruit and Ornamentals; with Greenhouse, &c.

Gardner Goldsmith & Co., Indianapolis, Ind. Fruits, Ornamentals and Greenhouse Plants.

Hooker, Farley & Co., Rochester, N. Y. Wholesale list.

L. Nicholson, East Rockport, O. Wholesale list.

D. D. Buchanan, Reid's Nurseries, Elizabethtown, N. J. Wholesale and Retail Catalogues.

New and Rare Fruits.

HALE'S EARLY PEACH.—Fruit almost globular, below medium size. Skin white, dark rosy red on the sunny side, with a deep suture especially towards the apex. Flesh greenish white, sub-acid, very juicy, and agreeable. Stone broadly ovate, pale gray color, sub-free. August 12th, 1863.

The above description we have made from specimens received from Dr. Edward Taylor, of Cleve-

land, Ohio. Excellent as the Peach is, it is proper to say that Early York peaches are abundant in our markets, from New Jersey and Delaware; though probably these localities are much earlier than Cleveland, as Dr. Taylor writes that no peaches yet have begun to color with him but this Hale's Early. Of course, Cleveland being so much farther north, there should be some difference, though when the Lake shores are concerned, mere latitude does not always affect earliness; but Mr. Pullen, of New Jersey, informs us that in his orchard-house, Hale's Early maintains the character for extra earliness given it West, and it no doubt fully deserves the good character it has obtained.

Domestic Intelligence.

TREE MANAGEMENT.—The *Country Gentleman* is publishing a series of articles on this subject which are interesting, and, in the main, valuable. The writer holds that an orchard should be cultivated, and no grain or grass grown in it; that the trees will do better, grow more thrifty, and give more and better fruit—all of which will not be denied here. But how much more profitable will such a crop be than if grass, or grain, or hoed crops are permitted to grow in it, when the soil is rich and deep? We think the difference is not so great as is generally held. When the crop of grass, or whatever is raised in the orchard, is reckoned and added to the fruit, the balance will be in favor of cultivating the soil. We usually raise two good crops of hay from our orchard, in a year, and the best and heaviest crop of apples in the neighborhood. But we take better care of our trees than our neighbors. If you wish to get the greatest income, put your orchard to grass, or grain, or hoed crops. If you wish to raise your fruit to show, keep your ground in fallow, for trees, in one sense, are a crop, and will do best by being cultivated clean. But the most income is in reaping your ground as well as your trees.—*Valley Farmer*.

[We extract the above to show that we are not alone in our views of profitable orchard treatment, though we would grow only grass. He thinks the difference is not so great as is generally held. We believe the difference will never be tested. At least we have never met an orchard which from infancy to old age, or even to maturity, had been kept clear of all other crops.—ED. G. M.]

A FOREST OF NUTMEGS.—Dr. Burnstein, while undertaking a scientific expedition for the Govern-

ment of the Netherlands to the Molucca Islands and New Guinea, made a discovery in the islands of Batjan which may lead to important results in the spice trade. In his ascent of the Sabella range, he discovered, at an elevation of from 2,600 to 3,800 feet above the level of the sea, a very extensive forest of nutmeg trees, laden with fruit of an unusual size and excellent quality. Dr. Burnstein's official communication reports that this nutmeg tree forest extends over a very large tract of country.

FRUIT IN UTAH.—A correspondent of the *Farmer's Oracle*, writing from Manti, says:

"I have a nice patch of strawberry vines that look well and fruit this season. The English gooseberry grows finely here; I have fruit this year 2½ inches in circumference. Many of my newly-planted peach trees are bearing this year as well as plums and apples."

THE FRUITFULNESS OF NEW JERSEY.—Placed between the cities of New York and Philadelphia, and favored with a good soil—to be enriched still further by inexhaustible beds of calcareous marl recently discovered—New Jersey is growing what is known down East as "garden sass," on a large scale. Her farmers are becoming rich in this business. The *Newark Advertiser* says:

"They have wisely turned their attention to the cultivation of market produce and fruits, the perishable nature of which forbids their growth in the illimitable but remote West. The result has been not only the enriching of those of our farmers who have promptly accepted the new order of things, but also of the land which has been devoted to it. Whole sections of our State, which were once barren sands, have been reclaimed and are now converted into fertile fields, bearing a wealth of crop that exceeds any thing that has before been witnessed, and we have the promise before us that those portions of our State which are accessible—and nearly all of it is so—our now great centres of consumption—New York and Philadelphia with their populous suburbs—will become garden instead of fields and orchards; nurseries and fruit patches instead of woodland and swamp and pine barrens.

RE-ROOTING OF PEAR TREES ON QUINCE.—This spring I had occasion to move twenty-five pear trees on quince, which I set five years ago, at two years old, budded low on the stock, so that it was easy to set them two to four inches below the junction. Upon about one-third of these trees, I found that there were plenty of quince roots, but

none from the pear. About one-third had both pear and quince roots, and in some instances, when the pear roots were vigorous, the quince roots, though still in place, were dead or dying. Upon the other third, there were no quince roots left, the whole tree being sustained by the new roots formed by the pear. In one case, the tree was budded upon pear, and that had straight roots, reaching downward. On the trees where new pear roots had formed above the quince, they all appeared disposed to spread out horizontally. The trees still retaining quince roots are not as large as the others, and those with both pear and quince roots proved that the latter do not always die as soon as pear roots form.—JOHN G. BERGEN, in *Ohio Farmer*.

A SOLDIER'S GARDEN.—General Rosecrans has taken 150 acres of garden-land in the vicinity of Nashville, Tennessee, and placed convalescent soldiers at work planting vegetables for the use of the army.

PROTECTION FROM THE CUT-WORM.—We have recently seen a mode for preventing the Cut-worm from destroying young recently set cabbage plants, consisting of wrapping a piece of stiff paper around the stem when the plant is set out, so as to extend a little above and an inch or two below the surface. We have adopted this mode more than twenty years, although it is now recommended as new, and we can vouch for its entire efficiency. Thick writing paper appears to answer the purpose best, and old letters may be torn up and employed. Stiff wrapping paper, and even burdock leaves have answered about as well, the object being merely to place a protection about them stem where the Cut-worm usually assaults it.—*Country Gentleman*.

HOW THEN WOULD YOU MANAGE THE CURRANT-WORM?—Adopt any mode that kills them. Dashing freshly slaked lime at least once a day over the bushes, is said to effect this end, and I have no reason to doubt it, if it is faithfully kept up. But I like a better way; I offer the boys twenty-five cents a pint for all they bring me—this induces them to sweep the bushes faithfully and thoroughly. This, in fact, is a good way for destroying all insects, grubs, squash bugs, curculios, and others. The little fellows learn to hunt for them with the same interest that men amuse themselves in catching fish or shooting game—the sixpence per dozen does not operate so much by way of compensation, as by producing this peculiar and exciting stimulus; and every hiding place will be diligently searched.—*Ibid*.

THE "FLUKE" POTATO.—The attention of the Cincinnati Horticultural Society has been called to a new variety of Potato, which was introduced from England. At the last meeting of the society, D. B. Pierson, Esq., in the chair, a committee reported that the specimen of these potatoes which had been referred to it, were of "full medium size, smooth, even, and nearly kidney shape; were cooked by putting them into boiling water, and in twenty minutes were thoroughly cooked, and came out, to use a common culinary phrase, 'like balls of flour.' In view of the great economic value of the potato as an article of diet, your committee think the Fluke will prove a very valuable acquisition to our present very limited kinds in cultivation, and believe it only requires to be more generally known to commend it to the attention of our farming community.

THE NURSERY BUSINESS IN THE CITY OF MONROE, MICH.—The Monroe Nurseries, of I. E. Ingelfritz, Esq., have for many years been widely known, and although as large as any within the State, it is only within the past few years that they have grown to such extensive proportions. Mr. Ingelfritz's nursery and garden, on the north side of the river, which covers nearly thirty acres, is only a small portion of the ground he occupies. In the western part of the town, and right within the city limits, fronting upon Front street, and stretching back to Plum Creek, fully a mile, is a farm of eighty acres, fifty acres of which has within the past two years, been planted to fruit trees, and now an extensive forest of them can be seen, which it is perfectly delightful to behold. A year ago last spring 380,000 apple trees alone were planted upon this farm, and now the most of them stand as high as a man's head, exhibiting a growth most luxuriant and beautiful. Imagine if you please, a forest of young trees, set in rows three feet apart, perfectly straight and regular, and stretching in an unbroken mass for three-quarters of a mile. The high degree of cultivation in which the nursery is kept, is also worth of remark. The soil is a perfect garden—rich, mellow, and friable—and scarcely a weed or blade of grass can be seen by travelling over the entire tract.

Besides the 380,000 apple trees that were planted a year ago last spring, 150,000 more were planted last spring, besides in the two seasons, about 100,000 other fruit and ornamental trees. Another season Mr. Ingelfritz will have nearly or quite 100 acres devoted to tree and shrub culture.—*Monroe Commercial*.

Foreign Intelligence.

FUCHSIAS.—*Her Majesty* is one of the best of the new ones; color and form the same as the Duchess of Lancaster, but the flowers fully twice as large. A good specimen of this is a noble object, but it must be added that it blooms late, and will want careful management, which, however, it is well worth. *Beatrice* has a pure white tube and reflexed sepals, corolla violet rose; this is a gem *Ettie*, rose sepals, purple corolla; a curious and immense flower, which will offend the florists, but please the gardeners. *Roland*, coral, red tube and sepals, light blue corolla; this has too long a corolla to satisfy our own eye, but people are not fastidious about properties in Fuchsias, for the most outrageous flowers are always graceful, and *Roland* will do for a novel color and a plentiful bloom. *Pauline*, vivid vermilion, sepals very broad and recurved, corolla rich purple. *Margaret*, a very queer form, owing to its extravagant expansion, will look well in the conservatory, and be a favorite with the ladies; the purplish-blue of the corolla is very striking, and for a Frenchman may be described as azure. Others in this lot are *Fairy*, *Lydia*, *Mildred* and *Tibby*; the last very blue in the corolla, and perhaps the bluest Fuchsia out. We shall probably get to cobalt or ultramarine at last, and whoever can raise one with pure white and pure blue—a thing quite within possibility—may, if wise, make a fortune.—*Gardener's Chronicle*.

MUSHROOMS ALL THE YEAR ROUND—*A Lesson for Amateurs*.—Of all the fungoids that make their appearance in our fields and woods during the warmer months of the year, commend us to "*Agaricus campestris*," the common mushroom. To see his white top peeping up through the green grass, or standing boldly up above the surface of the bed, is exceedingly pretty; and to catch him three or four inches in diameter, although not fully expanded, and turn him up to examine his pink "gills," affords a sight that every lover of the exquisite works of nature must admire; but after an early morning walk to find the same individual, and three or four of his young and juicy brethren, stripped of their skins, sprinkled with salt, and fried in butter, affords a relish for a morning meal, before which a devilled kidney must hide its diminished head, and which even to the vegetarian must vividly recall the most tender, juicy, and delicious of the "fleshpots" of old. The mush-

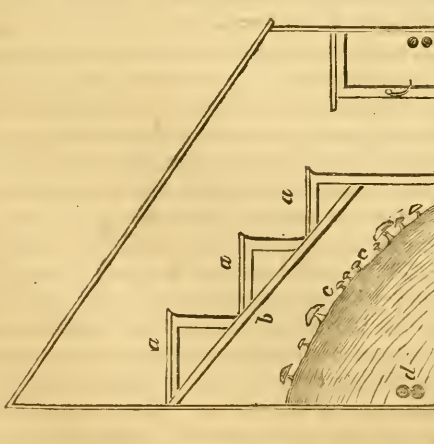
room is a favorite with all who have tasted it, fresh gathered and well cooked, is easily recognized wherever found, and is conspicuously a fair, honest member of a too frequently dangerous, treacherous family.

We can easily imagine, therefore, that as the natural season for providing this favorite esculent is very limited, a vast amount of skill and ingenuity have been expended in producing it artificially; and perhaps in no one thing have amateurs taken so much trouble, and yet achieved so many failures, as in the making of mushroom beds. The reasons for this state of things are various, but the principal are improper material and form in making the beds, bad spawn, and impatience. We have seen mushroom beds made in the angle formed by two walls, and formed of a heap of fermenting material four feet deep, and which, if not left before spawning until it was too cold, would, when earthed up, most certainly get too hot; for in the matter of temperature, success always hovers between 50° and 60° Fahrenheit.

Then, again, it is self evident that without good spawn success is impossible. In most neighborhoods there are men who profess to make it, and who sell a material perfectly orthodox in appearance; but we have seen so many failures that could only be attributed to bad spawn, that we never obtain it anywhere but of thoroughly respectable nurserymen who have credit at stake and a character to lose. Then, again, many beds are destroyed before they have had a fair chance. The amateur reads that mushrooms may be expected six weeks after spawning, but probably before that time he has had many a peep at the bed, in hopes they might come earlier than usual, but when the stipulated time has expired, of course the bed is examined once a day, and after a fortnight's disappointment, the weary watcher says, "It's no use—it's a failure; why, they ought to have come a fortnight ago;" and after another week or two the bed is wheeled away and dug into the garden. But "*Nil desperandum*" should be the motto of every mushroom grower, so the bed should be made in some out of the way place, and left for five or six months, as the unfavorable circumstances that frequently occur may in the course of that time be remedied, and a good crop procured after all; for it may have happened that the bed was too wet or too dry, or the external temperature was too low, or the soil with which the bed was covered was unfavorable to the rapid development of the spawn. Any of these causes would be sufficient to retard for a time, but might not prevent ultimate success.

Last summer we visited the garden of a gentleman amateur south of London, which was one of the prettiest we saw during the season; and after praising the various successes, we began to talk about failures, and among other things he said that he was exceedingly fond of mushrooms, and having failed in procuring any when he tried himself, he obtained the assistance of a man in the neighborhood who professed to be thoroughly initiated in all the mysteries. The first thing procured was a large two-light frame, then two or three loads of hot dung, which after sundry turnings was finally made up into a bed; a fabulous amount of spawn was said to be inserted in it, special soil was procured to cover it, straw and mats to keep it in the dark; and when the bill come in for labor and material. £5 was not enough to pay it; and although this would not have been thought too much for a "hobby," had it been a success, yet the case assumed a very different aspect when it turned out that not a single mushroom was ever gathered from the bed. This of course was an extreme case, and and enough to deter most people from any further attempt; but as we could always grow plenty of mushrooms for ourselves, we thought we might try for a friend, and after undertaking not to spend more than a tenth part of the money wasted in previous attempt, he willingly consented, though not very sanguine of success. When September came we were reminded of our promise, but took no notice; and when October came, to ease his mind we sent in a load of very short but not rotten horse-dung, and told the man to put a spare light over it to keep it dry. This was turned once, and not till the end of the month did we really proceed to make the bed, and then came a surprise at the place in

house, 20 feet by 9 feet, was a three-inch flow and return pipe, running round the floor of the house next the wall, back and front; at the back is a stage supported by uprights and bearers, from which the shelves are bracketed, *a*. Some rough feather-edged boards, *b*, were nailed to the under side of the bearers, and overlapped each other so as to form a waterproof roof; under this the bed *c* is made (enclosing the pipes *d*), 12 feet long, barely 2 feet high at back, and 2 feet 6 inches wide at the bottom. The fire was lighted twice a week to give gentle bottom heat and bring the Camellias in bloom on the stage overhead. The bed came into bearing less than six weeks after spawning, or a fortnight before Christmas, and produced a good succession. The only trouble it has been is an occasional sprinkle of tepid water, for it has never had a particle of covering of any kind; but we intend to inclose it with a curtain of small clean Russian mats as the sun gets power; and we would ask our amateur friends who are fond of mushrooms, and have greenhouses that by a little ingenuity might be adapted to grow them in a similar way to this, whether a neat mushroom bed under the stage would not look more tidy than broken pots, dead and dying plants, &c., that too often accumulate there, to say nothing about the pleasure and profit to be derived by growing a plentiful crop of this useful esculent?—*Gardener's Weekly Magazine.*



ICE TRADE AND MANUFACTURE.—The trade in ice is now one of great and increasing importance. Ice has always been esteemed as a luxury in warm weather; and this early led to the storing of it in winter and preserving it for summer use. The Greeks, and afterwards the Romans, at first preserved snow, closely packed in deep underground cellars. Nero, at a later period, established ice-houses in Rome, similar to those in most European countries up to the present time. But these means were not enough to supply the luxurious Romans with ice for cooling beverages, and they actually established a trade in snow, which was brought to Rome from the summits of distant mountains.

The trade in ice in this country has, until lately, been very limited, having been chiefly confined to the supply required by a few of the first-class fish-mongers and confectioners—the private residences of the more opulent families being furnished with ice-houses, in which a sufficiency is kept for private use. But the North Americans have started a trade in this article in their own cities, which has extended to Europe and Asia, and has, in an incredibly

which we put it. In the little "lean-to" green-

short space of time, attained a surprising magnitude. The export of ice from America was commenced about 1820, by a merchant named Tudor, who sent ice from Boston to the West Indies. After persevering against many losses, he succeeded in establishing a trade with Calcutto, Madras, and Bombay; and now not only is it sent in vast quantities to those places, but also to Hong-kong, Whampoa, and Batavia. About fifteen years since, the Wenham Lake Ice Company commenced sending to this country from Boston, which is the great American port for the shipment of this material; and since then, not only has there been a continually increasing supply, but the success of the Company has been so great as to tempt others into the market, and many cargoes now annually come from Norway and Sweden.—*Eng. Paper.*

LARGE STRAWBERRIES.—We have received from R. Webb, Esq., Calcot, near Reading, a basket of immensely large Strawberries, which Mr. W. calls "Refresher." It is somewhat like Sir Harry or some member of that race. The flavor was excellent, and one in the basket measured 9 inches in circumference.—*Cottage Gardener.*

PREPARING STRAWBERRY PLANTS FOR FORCING.—I intend potting some Strawberry plants from runners. Is it better to do so in small pots and re-pot into six pots in the spring, or strike them from runners into six-inch pots at once, as the latter would save trouble if there is no disadvantage?—A. Z.

[Both modes are good in proportion to the management. We frequently ourselves take off the runners as soon as made, and the roots are shown in embryo, and plant about $3\frac{1}{2}$ inches apart in light soil above a slight hotbed, and as soon as they form roots and balls, lift them and pot in six or seven-inch pots. Owing to the dry weather, our runners are scarcely fit for using any way as yet, but in a week we hope they will be so. Of the two modes suggested by you—layering in a small pot, or layering in a large one at once, we prefer the first mode, and on the whole we do not think we incur more trouble or labor, whilst we think we obtain some advantages. By the small-pot process at first there is little primary care needed, whilst by potting at once in large pots much care in preparing the pots is necessary, if good success is to be obtained; and there is a great trouble in wheeling to and rewheeling from a quarter 32 or 24-sized pots instead of 60s.

Our general process is to take a barrow nearly filled with light loam and leaf mould, and the top

filled with large 60 or 54-sized pots to the Strawberry-quarter, put a crock in the pot, fill with soil, and fasten the layer in the middle of the pot either with the fingers or by placing a pebble or good-sized crock over it. These fairly watered will soon fill the pots with roots, and when that is done the runner is cut, and the pots and plants wheeled to a shady place for a few days, in order that by watering and syringing they may get over the partial check of being severed from the runner. Then they are finally potted, using rather stiff rich loam, and placing the plant so that the bud shall be at least as high as the rim of the pot, and potting as firmly as fingers and a wood rammer can make the soil. The two advantages of this plan are—first, the security that the bud or centre of the plant shall not be too much sunk, as in that case the plant will rarely fruit well; and, secondly, the making sure that the pot all through will be filled with fine fibry roots, so that the whole ball shall be matted with them; and thus the second potting disconcerts a natural tendency of the plant to send its roots at once to the sides of the pot, and to cluster there while the centre of the ball is comparatively free from fibres.

By the second mode—putting the runner at once in the fruiting-pot, there will be as much care required as in the second potting by the above mode, and thus at least at first and in the busiest season, more of first trouble will be necessary. True, we have seen thousands so done without much trouble. The pots (large 32's) were taken to the place and drained, the plant placed on the surface of the soil, growing well, making fine foliage, and moved some time in autumn, with the runner a rather nice plant sunk down an inch or two or more below the rim of the pot, and all looked nice, though we seldom heard much of their wonderful fruitfulness.

The mode by which we have succeeded best by the at-once-layering in the fruiting-pot, is as follows: The pot was suitably drained, a little moss and soot placed over the drainage, and the soil packed in firmly, leaving a small cone a little loose on the surface for the runner, that cone being from half an inch to an inch above the rim of the pot, for before autumn the soil would have sunk, perhaps, half an inch below it. So treated the plants did well, though not better or hardly so well as those laid in small pots and again repotted. Our chief reason for not following the plan oftener is, the much greater time and trouble it takes for securing rooted plants in the first instance, and that at a season of the year when it is a serious question to decide what should be done first. By the period

the layers need repotting we generally have a little more breathing time. If our correspondent "A. Z." decides on the layering in the fruiting-pot at once, we would draw his attention to the above conditions; if he layers in a pot filled lightly with soil, we would not hold out great hopes of a fine crop. We have seen hundreds of instances in which such quick work was done, and other more tedious processes decried, but we have heard few boastings at gathering time under such circumstances, and especially if the fruit was wanted at all early.—*Il.*

TREE PÆONIES.—The variety called "Gloria Belgarum" was raised from seed in Belgium, by a gentleman named Goethals. It is a marvel among marvels, the like of which we have never seen. The flowers are of the deepest rose color, nearly full double, and considerably more than a foot in diameter, that is to say about 4 feet round.—*G. Ch.*

BROCCOLI.—We have received from Messrs. Sutton & Sons, of Reading, a specimen of a very large White Broccoli, weighing 17 lbs., after the removal of some of the outer leaves, and measuring (the close head or flower) 4 feet in circumference. In appearance it was rather coarse and inclined to open, but when cooked it proved as tender and delicate as it is possible that any Broccoli can be.—*Gardener's Chronicle.*

TO RAISE AURICULAS FROM SEED.—If Auricula seed is not carefully sown, you will be sure to lose one-half. It should be sown in pans filled with sifted mould, and flattened on the top. After the seed is sown, take a very fine seive, and sift just enough mould over it to cover the seed, and then it would be as well to strew a good handful of wet moss over all. When two leaves appear, and before the plants have four leaves, get another pan, and fill it with the same mould as the other one, and with a pin lift the plants out of the first pan and plant them into the second. They grow best one inch apart. When they require watering, they must be sprinkled very lightly, so as not to wash them out of the mould. He always used a clothes brush, which he dipped into water, and then rubbed his hand briskly along the hair, which sent the water over them in such a very fine shower that it could not disturb any thing. When you have pricked out all the plants, put the first pan by for a year, when you will probably have a second crop, some of the seeds waiting until the next season before they germinate. He (Mr. Glenny) had a pan given to him once in which some seed had been

sown, and put it away for a year, and found the next season that the plants came up very thick.

After they are transplanted into the second pan, you must press the earth down firmly round each plant, to give them a chance of growing, for if you put them into loose mould they will not stand, as the least watering will wash them out. In this manner let them grow till each plant has five or six leaves; then procure another pan, and transplant them into it, but let them be at double the distance; and in autumn put them into thumb-pots, keeping them well watered, and never suffering them to become dry. In the next stage the treatment will be the same as old plants. Put them in a frame shaded from the direct rays of the sun until winter, when they must be protected from frost. During the winter you can give them the sunshine when it is not too hot. In the spring they will probably bear some flowers; but if you are wise you will pick all those off, as they will only weaken the plant, and they are no good. You may then turn them out of doors. In August they will require to be repotted; shake all the earth off the roots, and then put them into pots of a larger size, or into the same size if they have not grown much, until September or October, then winter them as before, and they will flower the next spring.—*London Gardener's Weekly Magazine.*

ALOCASIA METALLICA.—We give the mode, which is the simplest possible. Just suppose the metallic-looking Alocasia to be a Richardia Æthiopica. Reduce this to a small plant and cut the bottom of the plant away, dividing it into as many little pieces as you can perceive eyes in the same, leaving where practicable the small roots or rootlets found attached to each, potting, plunging in heat, etc. But let those who are not quite so venturesome simply take the soil away carefully from the base of the main portion of the plant, cut a reasonable bit off and pot it, carefully repotting the plant, thus proceeding as the plant continues to grow, and soon a good stock will be their reward.
W. EARLY, Digswell.

THE DRACÆNA is easily propagated by cutting in pieces the leafless portion of the upright stalk, though I believe of our fellow laborers few would like to destroy a good plant in the process. My real object, however, in introducing this genus is to refer those who have a plant to the very base of its main stalk, where will be found small growths having an appearance not unlike the main eyes of a Jerusalem Artichoke. At times two or three of

these are seen attached to each other. They should be cut apart, and placed in free sandy soil in a good brisk top and bottom heat, when they will be seen to shoot up readily, each forming a plant. Under this process the best variegated kinds appear to lose their chief merit, at first assuming the uniform color of the original species, though they become variegated the second season.—*Cottage Gardener*.

THE LAST EXHIBITIONS OF TABLE DECORATIONS IN LONDON.—The set to which the first prize was awarded was light and elegant in appearance; but whether the introduction of humming birds into the design was good taste or not was a matter of general question among the visitors, the majority of whom seemed to think it would have been better without than with them. The second prize set consisted of Mr. March's design in glass, very tastefully ornamented with flowers, among which the white *Calla aethiopica* and *Cactus* blooms were conspicuous. The group which gained the third prize consisted of long ground glass vases, each of which held a beautiful bouquet, supported on a circular base decorated with glass shells, in which were placed white *Iris* flowers, an arrangement that seemed to receive general admiration. Another, consisting of glass tubes, bent so as to form ovals in the centre tastefully ornamented with flowers, was commended; and Miss Maling and Mr. Salter had each of them pretty exhibitions, that from the latter consisting of three slender wires concealed behind *Fern* leaves, supporting a tray full of flowers at top. A flower tray from Mr. Weeks of Bromley appeared to be a favorite. It consisted of a pot or holder large enough to admit of an ordinary flower pot being placed in it, thus making it easy to change a plant, in blossom or otherwise when wanted. Around this was a circle with a perforated bottom in which *Lycopods* or *Mosses* may be grown luxuriantly. Another outer circle was wet for sand, in which cut flowers may be placed. When neatly arranged, the whole forms quite a garden in miniature, which may be watered with a fine-rosed water-pot; and thus treated, both plants and flowers will, as a matter of course, retain their beauty and freshness much longer than by the usual mode of display. Finally, Mr. Early, of Digswell, had some extremely pretty things for table ornament in the form of four flower saucers, held together by means of bent wire handles crossed at top, to be overrun if desirable with sprigs of green. They were accompanied by a centre piece, which also displayed considerable ingenuity:

Awards.—1st, Lady Rokeby; 2d, Mrs. J. W.

Bliss; 3d, Mrs. W. Fawcett. Commended: Lady C. Kerrison, Lady Holmesdale, and Mr. Alfred Salter.—*Gard. Chronicle*.

AMERICAN STRAWBERRIES IN EUROPE.—A correspondent of the *London Gardener's Chronicle*, says:

"Many kinds have been sent from America, and are grown here, but with two or three exceptions cannot be regarded as fine Strawberries, almost all being deficient in flavor. One of the best is Boston Pine, a free cropping variety of medium size, useful for preserving, and very early. Wilson's Albany, however, is the best as seen here; a good-sized handsome round fruit, of a dark red color throughout; an excellent preserving sort."

Another writer says all of many varieties tried proved worthless, except the Fillmore, which he rates highly.

ENGLISH OPINIONS OF FRENCH STRAWBERRIES.—If the vegetables were indifferent, I cannot say much for the fruits. There is a M. Ferdinand Gloede, a correspondent of Mr. Radclyffe, who has written prodigious things concerning Strawberries, and I expected, when I saw his name amongst the list of contributors, that one would see a wonderful collection. He had a basket containing twenty-four varieties—but what a basket! It was divided into compartments about 4-inches square, and in each of these were placed some half a dozen Strawberries, many of them—most of them, indeed, I should say—English varieties. But oh! could Mr. Smith of Twickenham, or Mr. Turner of Slough, have seen the Sir Charles Napiers, Sir Harrys, Victorias, &c., they would have wondered that any one calling himself a Strawberry-grower could have sent such poor specimens of his skill. It was interesting, however, in one point of view, viz.: as showing that there is a probability of the French having something better than the "fraise de quatre saisons," which up to this time has been the sole stay of the lovers of the Strawberry among them.—*Cor. London Cottage Gardener*.

POOR GARDENERS.—At a meeting of the Gardener's Royal Benevolent Society recently held in London, a speaker said, that amongst its "pensioners" it had 56 "poor persons who had held first-class situations as gardeners, or had been nurserymen or seedsmen, or were the widows of such, whom want or distress had overtaken in their old age." We doubt whether one such instance ever occurred in America, and the reflection should be a

new inducement for our gardeners to so improve themselves that their profession should not merely afford the safe livelihood it is at present, but by adding to their present intelligence, command still higher rewards.

Foreign Correspondence.

From Our Occasional Paris Correspondent.

PARIS, July 1st, 1863.

Respected Friend Monthly: It is a most ungracious thing—is it not?—to begin a letter with a puff? But I have *such* a puff for you, stored away in my mind's drawers these four weeks, that it is no wonder if it comes uppermost the moment I begin to write. Fancy, for instance, that during my absence from Paris I had been to Madagascar,—a country, by the bye, the exact position of which is very inexact in most men's minds, till they tread themselves the Madagascan soil;—fancy I had, when there, gone to see, on business, Her Madagascan Majesty's first Secretary of State, who, as I subsequently learned, combines with that office the Secretaryship of Horticulture; fancy that I found him, at the antipodes, looking over the last (to him the last) number of the *Gardener's Monthly*—*benedictum sit* with a countenance full of enjoyment and satisfaction; fancy I had taken the opportunity, propitious as it seemed to me, to introduce myself to his Excellency as its *Paris Occasional*; fancy his Excellency breaking out in praise at the wonderful and rapid improvement which the *Monthly* has wrought on His Excellency's mind in general, and on Madagascan Horticulture in particular; fancy all this! and you will admit, I have no manner of doubt, but that such puffs, or rather the relation of similar facts, however veracious, should come in at the very end of an epistle. *Mais que voulez-vous?* All men are born equally vain. But, as vanity, being one of the original seven sins, must be conquered, so I suppress the virus, and offer the classical spectacle of immolating myself on the altar of virtue. If, however, the public do not find these interesting facts, concerning the peregrination of its *Gardener's Monthly* into distant lands, at the end of this letter,—then, Mr. Editor, whose will be the fault? Self-denying scissors will have a had struggle with the public's own interest, and the verdict will be—guilty of a literary misdemeanor.

Passons aux affaires. I shall send you by next opportunity a stenographical report of Professor Lajoulet's lectures on Pomiculture. "Lectures?"

—pretty scientific theories?" Not at all; real practical instruction, by a man who understands the practice of horticulture, no less than its philosophy. One of the points Mr. Lajoulet makes the question, Which is more profitable cultivation, short-lived or long-lived trees? A question which he does not solve; but which he proposes to solve after having obtained some more personal experience and a richer collection of statistics. It is the horse-question adapted to fruit trees. Some of the omnibus lines here work their cattle to death in comparatively short time, getting as much work out of them as ever possible; and then renew; others treat them mercifully and with a saving hand, and keep them a long while. So with trees. The espalier system, so prevalent in this country, is made up of nipping, pinching, trimming, and the "give us fruit" principle. The solution of this question will be of far less interest for America; but it may probably renew discussions about "dwarf or not dwarf" trees.

However much now, *quand les esprits s'acharment* that is, when folks get mulish, such discussions assume the tinge of the ludicrous, and however seldom a real result is obtained by them, some truths will always be evolved, *some* new facts will come to light, and, one such gained reconciliates us, horticultural philosophers, with the din and confusion of the contending factions,—for instance, the Grape-folks. If they have settled nothing whatever, they have given us this much knowledge, that all improved open air American grapes must be descendants of natives, and that foreigners will not do. But need I tell you such truths?

It is my principle through life never to touch polemics if I can help it; and to touch "burning questions," such as that of the Grape, and that of the Strawberries, during this hot weather, would be playing with hot pokers on the gates of the *Inferno*. And as an *Inferno* is a time-honored institution and quite proper, when sung by Milton or by Dante, I will take leave, and ask you, Where shall I, when once my path shall lead me through, find there those horticulturists, who for the sake of lucre, or of obstinacy have groves on their heads. By the shade of Priapus, it does my horticultural heart a mighty deal of good, the contemplation of this.

Some of your lady readers may smile that sweet incredulous smile of theirs, looking most bewitching unbelief. I must to them prove my love of truth. Know ye, then, readeresses of the *Monthly*, it has extended already, this fashion—to horses. The Empress has had her horses' heads ornamented with lilacs, Wistarias, and similar flowers,—for this

present season I have recommended Trumpet-flowers,—and the beautiful animals have looked more beautiful yet. Will you now believe me, fully and altogether? You will. Thank you, and the curtain falls. M.

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

The Annual Meeting of this society will be held at Bethlehem, on Tuesday, September 29th, 1863.

Editors of journals favorable to the cause of Fruit culture please copy. By order of

EXECUTIVE COMMITTEE.

PENNSYLVANIA HORT. SOCIETY.

MONTHLY DISPLAY, AUG. 11TH.

The Floral feature of the evening was the *Gladolus*, of which Mr. John Sherwood contributed 60 varieties, including 37 seedlings raised by himself, of every shade and color, and some beautifully variegated. Among them was a very handsome yellow flower with rose-colored fringe. Mr. Dreer and Mr. Meehan also contributed each six choice specimens. The day of the exhibition was somewhat late for most growers of this charming flower. We looked in vain for a contribution from Mr. G. W. Earl, one of our most experienced and successful amateurs.

The Committee awarded both the general and a special premium to Mr. Sherwood, for the best six blooms and for his collection of seedlings.

The following premiums were also awarded :

For a Basket of cut flowers to Mr. James Eadie, gardener to Dr. Rush, a truly *graceful* composition, very different from the stiff, formal affairs we have so often criticised, at our floral shows, which seem *hewn* out of a solid flower-bed; its easy flowing lines, and fringe of pendant ferns and creepers gave it a marked character, in this respect.

For Hand Bouquets, to a new contributor, Mr. James Brown, gardener to A. S. Jenks, Esq., whose basket of cut flowers, at the July Meeting, we should have noticed more particularly, for the same features of free and graceful composition. It was a most creditable production, and his first offering to the society.

To Mr. Thomas Meehan, for cut specimens of Herbaceous Phlox.

To A. L. Felten, for best Blackberries. Also a special premium of \$3 for a large and admirable collection of vegetables.

To Mr. Wm. Joyce, gardener to M. W. Baldwin, Esq., a special premium of \$2,00 for Exotic grapes of six varieties, 3 bunches each. These were all grown in a greenhouse, and were uncommonly fine, the bunches quite large and the fruit well colored; the figs presented were also excellent.

Grapes of two varieties, of excellent color and size, were shown by Donald McQueen, gardener to Joshua Longstreth, Esq.

Mr. E. Satterthwait brought a pair of handsome hand bouquets, and 11 varieties of Summer pears. To our thinking, or rather *palate*, the Tyson was one of the best. We missed the Beurré Giffard, a superb fruit, unequalled in its season, and with Manning's Elizabeth, forming a *brace* of summer pears, of the sub-acid and sweet kinds, fit for a king.

☞ We call attention in another column to the Autumnal Exhibition, at the Academy of Music, which promises to equal the grand shows held at the Chinese Museum, in days gone by.

STATED BUSINESS MEETING, AUG. 18TH.

After the usual routine of business, Mr. Caleb Cope, after a few preliminary remarks, presented a set of resolutions condemnatory of the want of taste, and wasteful expenditure of public money, exhibited in the Landscape-gardening of our public works, and particularly of Fairmount Park, and that a committee of five be appointed to memorialize Councils on the subject, and to propose that the committee be allowed to co-operate with City Councils in effecting improvements, particularly to carry out a plan of permitting citizens to furnish trees or groups of trees at their own expense, and which groups should bear their names *in memoriam*. The resolutions, after a live debate were adopted.

The Chair appointed Messrs. Cope, D. R. King, Thos. Meehan, R. Kilvington, and T. P. James, as the committee named in the resolutions.

Mrs. Mary A. Bradford was elected a member.

The reading of Mr. Rathvon's Essay, on the "Destructive Insects in Gardens and Plant-houses," was announced for the 25th inst.

MASSACHUSETTS HORTICULTURAL SOCIETY.

H. H. Hunnewell, Esq., has donated to this society \$500, the interest of which is to be annually offered as premiums for the introduction of new trees and shrubs, particularly of Rhododendrons.

ILLINOIS STATE HORT. SOCIETY.

This Fair is to be held this year at Rockford, September 8th, 9th, 10th, and 11th. The premium list is ready, and can be had of H. P. Kimball, of Rockford, and probably most of the officers.

That the Fair will be the best ever held in the State we have the guarantee of some of the most enterprising florists and pomologists in the N. W.

It will be recollected that the gardeners of Rockford, at the last Fair held in Chicago, outvied their great rivals, and carried off most of the premiums; in fact the Chicago gardeners did little else but growl and stand in the background, while the Rockford gardeners took the prizes and nearly all the honors. The stigma thus cast on the floral skill of Chicago will not soon be wiped out. If the gardeners of that city have a grain of pride, they will invade Rockford in force during Fair week, and try to retrieve their lost honor. If these men think that because Chicago is the commercial emporium of the West, they need only grow their plants and customers will come to them as a matter of course; they may sometime wake up to the fact that they are a bit mistaken. Rockford is favorably connected by rail with the North-west, and her central position will make her a troublesome competitor with the Garden City.—*Illinois Farmer.*

AMERICAN INSTITUTE, NEW YORK.

Horticultural Exhibition of the Thirty-fifth Annual Fair of the American Institute, New York. Schedule of Premiums from John W. Chambers, Secretary. This is to be held on the 16th of September, and handsome premiums are offered for various flowers, fruits and vegetables.

OHIO POMOLOGICAL SOCIETY.

Tenth Report of this society, the meeting held at Columbus, February, 1863. This has been some months on our table. In view of the great interest attached to the Cherry in the North-west, we extract from its pages all that is said in relation to this fruit:

NOTES ON VARIETIES OF CHERRIES.

Gov. Wood—First rate in quality; good size and color, but overbears, and very liable to rot.

Cleveland Bigarreau—Fair quality, very productive.

Rockport Bigarreau—Handsome and good; not so liable to overbear or rot.

Kirtland's Mary—Handsome and good; very firm flesh.

Mammoth—Large and good, but a poor bearer.

Caroline—*Favorite*—*Delicate*—*Doctor*—All found deficient in size; but, with good culture, would prove excellent for amateurs.

Black Hawk—Best of Dr. K.'s black varieties; resembles Black Eagle. Tree grows and bears well, but not easy to propagate. *Pontiac* is a similar variety; very large and excellent.

Kennicott—We found unripe, but, from its known excellence as a late variety, we commend it to all cultivators.

Red Jacket, *Dacotah*, *Osceola*, and *Powhattan*, also deserve attention as late varieties; they were unripe at the time of our visit.

Large Morello and *Shannon* were also unripe, and their character not sufficiently known to the committee.

A number of other seedlings of Dr. Kirtland, some of them quite new, were exhibited to us, but not in condition for us to judge of their merits. We hope to see them again in a year or two. *Donna Maria*, at Mr. Elliott's old grounds, seemed to be our "Early May"—are these identical?

Of the old varieties, we found *Black Tartarian*, *Napoleon*, and *May Duke* quite abundant in the market and elsewhere; of these, we heard most complaint of the Napoleon for its liability to rot, and poor quality generally. The black varieties, with the May Duke, found the quickest sale in market. The premiums for the first and second best plates of cherries at the exhibition, were awarded for Gov. Wood and Black Tartarian.

CHERRIES IN CENTRAL OHIO.

Having made some experiments with cherries, along with other fruits, in an amateur way, Mr. E. Manning, Harrisburg, Franklin county, Ohio, gave the following observations on his last year's crops, for benefit of those who have fallen into the belief that the finer varieties of cherries cannot successfully be grown in this climate, on our strong clay soils, and says:

"My location is 12 miles South-west of Columbus, on clayey upland soil, with undulating surface—not hilly, nor much elevated above the wide level districts around. Most of my cherry trees are on the *Mazzard* stock, and as far as my experience goes, I gave these the preference over those on the *Mahaleb*, excepting the Black Tartarian variety, which does not do well on the *Mazzard*.

The cherry crop the past season was finer than I have ever known before in this region. The following are the principal kinds that fruited with me:

Early Purple Guigne. Medium size, fine quality and very productive; the earliest of all cherries

I have tested; ripe May 28th; two years previous ripe May 20th.

Elton. Large and fine; worthy its high reputation; ripe June 10th.

Elk-horn (Tradescent's Black Heart). First size, fourth quality; not admired by those who like nectar or ambrosia.

Knight's Early Black. Large and fine, especially for the dessert and amateur culture; too tender for market.

Black Eagle. Large and good, but a rather shy bearer.

Belle d' Orleans. Full medium size, handsome, excellent and early; ripe June 5th; too tender for market.

Hovey. Large, handsome and very good; late.

Bigarreau Gabalis (?). Very large; resembles Black Tartarian, but larger; ripe June 15th. I think this was the best of all cherries I ever tasted—the richest and highest flavored. [There is probably a mistake here, as the name is a synonym of the *Monstreuse de Mezel*, which is not considered a fine flavored cherry.—SECY.]

Black Bigarreau of Savoy. Large size, first quality; ripens the latest of all really good cherries; quite valuable.

Large Heart-shaped. Very large, good and beautiful; not fully tested, but I think will prove one of the best.

[The two last named varieties should, according to the books, be identical.—SECY.]

Florence. Large and good; quite late; resembles the Graftion, but later; highly valuable.

American Heart.—First size, second quality; very productive.

Downton. Good size, poor quality; very productive.

Burr's Seedling. Fair size, good quality, flesh sweet and tender.

Cumberland Seedling (?). Large size, good quality; somewhat resembles Black Tartarian; ripe 14th of June.

Cleveland Bigarreau. First size, first quality; very productive; one of the best of Dr. Kirtland's.

Gov. Wood. First size, first quality; very productive; like the preceding, and a little better.

Rockport. Large and good, tree very vigorous and productive; an indispensable variety; ripe June 6th.

Doctor. Medium size, good quality; not as valuable as the two preceding, with me, but may improve.

Mammoth (Kirtland's). Very large, good quality, but tree a shy bearer; unprofitable.

Kirtland's Mary. Medium size, beautiful and productive; ripe first week in June.

Ohio Beauty. Large and fine, flesh tender; very handsome; valuable for amateurs.

Caroline. Medium size, excellent and beautiful; like the preceding, too tender for market.

Delicate. Another of the same class; medium size, very handsome, and good for amateur use.

Red Jacket. Medium to large; second quality.

Pontiac. First size, first quality; promises first rate.

Osceola. Second size, first quality; very fine.

Black Hawk. First size, first quality; very productive and fine.

Powhattan. First size, first quality, productive; fine for market.

Brant. First size, first quality; not fully tested; promises well.

Late Bigarreau. First size, second quality; ripens late.

Napoleon. Very large, handsome, second quality; productive and profitable for market.

Manning's Mottled. Large, showy, second rate; very productive.

Graftion (White Bigarreau). First size, first quality; very beautiful, productive and popular.

Great Bigarreau. Very large and good; tree vigorous and productive; one of the indispensable varieties; ripe 14th June.

Belle de Choisy. Large, best of Dukes; resembles the *Ohio Beauty*; not quite so large or so good; tree thought to be more hardy.

Belle Magnifique. Large and fine as late Duke.

May Duke. Large size, good quality; ripens irregularly, which is objectionable for a market variety; only second early.

Latest Duke. Very large and good; late, and promises to be quite valuable.

Reine Hortense. Large size; next of Dukes to Belle de Choisy in quality, and more productive.

The foregoing forty varieties (and some others I have fruited) of the finer kinds, I consider as sure to bear in this climate as the inferior sour kinds so common in the country."

[NOTE.—In relation to the foregoing, the opinion was expressed by several members, that Mr. Manning's trees are probably too young, and his experience too brief as yet for full reliance to be placed in his conclusions. It is well known that the past season was uncommonly favorable for cherries in his section. His communication, however, possesses much value, and the hope was expressed that he would favor the Society with the results of his next good cherry crop, whenever it may be.—S.]

THE GARDENER'S MONTHLY.

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THOMAS MEEHAN, EDITOR.
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Hints for October.



FLOWER-GARDEN AND PLEASURE-GROUND.

Persons who have small places, are often exercised as to the best way to lay them out. A too common error is to attempt too much. Having read of fine specimens of taste, or imbibed a love for the art from superior work on Landscape Gardening, or some friend's extensive country-seat, it is quite natural to wish to make the most of a limited plot. And this making the most of the thing implies a good deal, while it leads into many errors. The *relation of the means to the end* should never be lost sight of, and nothing attempted that has not some well-defined object.

When a house is built, the first object is to connect it with the public road, with the stable, and with the offices. In laying out these roads, convenience and beauty must be consulted. The first suggests to go "straight on;" the last whispers, "curve gracefully round." Convenience being the chief object, must be respected; and whatever deviations from the straight line is allowed to the importunities of beauty, should have some evident reason for it. Hence the curve should have its salient point filled with a heap of roots or rocks, or a thick mass of shrubbery; or, what is still better, the soil should be raised to form a rise or knoll, as if the road had to be taken around to avoid the obstruction. Much may be done for a small plot by this plan of making the surface irregular. A dead level, or a regular plane, looks smaller than it really is. Around the house, it should be so; as a sudden transition from the delicacies of art in the building, to the roughness of nature in the grounds,

is offensive,—but at a little distance off, very lively effects may be obtained by taking off a little soil here, and adding there, so as to make the surface broken and irregular. The effect may be further increased by planting the rises, and leaving the lower surfaces bare. To still further give the idea of extent, shrubbery should be planted in irregular masses to conceal the fences and boundaries; and many objects on the place itself may be partially concealed by planting all with the view of exciting the curiosity to know "how much more is beyond." Besides the mere purposes of shade from the sun, and screen from the winds, large-growing trees should not be employed in decorating the property, as all large objects lessen the apparent size of the lot. Besides, small and medium-growing trees afford a greater variety.

The walks being decided on with a view to convenience and beauty, and the general idea of giving the plot the appearance of as much extent as possible, being kept in view, it may be useful to say something as to the making of walks and lawns, and preparing the soil for trees and vegetables. A carriage-road on a small place should be at least eight feet wide. If so large, or the road so long that there is a chance of carriages meeting, it should be fourteen feet. There is not much use in underdraining roads; it is better to make provision for the water to run freely over the surface. The road should be dug out six inches deep, and filled up entirely to the surface with rough stones, the harder the better. When full, the surface should be broken very fine with the hammer. The surface stones are usually broken to the size of hen's eggs, but if still smaller, so much the better. Then sand should be put over the broken stone sufficient to fill in the spaces, and over the whole enough gravel or whatever material is employed, to just cover the sand; so that, when finished, the broken stone will not be more than a quarter of an inch, at most, beneath the surface. Should the road be steep, provision must be made to guard against washing by heavy rains, either by small gutters of stone or

brick, or by inserting cross bars occasionally to carry the water over the verges of the road. It may be further remarked, in road-making, that the extent of a lawn is apparently increased by having the walk or road sunk some inches below the general surface. On the other hand, a full walk seems to lessen the space. Small foot-paths need not be dug out over four inches, but in other respects, they should be constructed as the others. Roads, in all cases, should have both sides nearly, or quite, level—where one side is higher than the other, besides the unpleasantness to pedestrians, carriages wear such roads rapidly away, by the weight being so much greater on the lower wheels.

In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must *grow well*. The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved, and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils grass will burn out under a few days of hot sun. In a soil eighteen inches deep a lawn will be green in the driest weather. For the sake of the trees, also, the ground should be not only deep, but rich. If from thirty to forty loads of stable-manure to the acre could be appropriated, it would be money well spent. Life is too short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as unsatisfactory, business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that, while aiming at the best effects, we are helping our trees also. It is generally best to sow for a lawn than to sod, where much of it has to be done. The edges of the roads must, of course, be sodded, the balance neatly raked over and sown. The best kind of grass to be employed in seeding is a disputed point; and it will, no doubt, depend in a great measure on the locality. Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and has a peculiarly lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky Blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is

apt to give a spotted and variegated character, not at all pleasing. Some people like to see, white clover growing thickly in a lawn, and others object to any thing but green. However, if a good grass-rake is employed freely in summer time, the heads of these flowers may be kept from expanding. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed,—the clover, where used, to be kept for sowing in April or March next. A small quantity of rye should be thinly sown with the grass, which, by the shade it affords, will prevent the grass from being thrown out by the frost. The rye must, of course, be closely cut in the spring, to allow the grass to get ahead of it. Planting of deciduous trees and shrubs may be proceeded with this month to great advantage, and next month well sheltered from cold winds, wherever the winter is not likely to be very severe. In cold, bleak spots, or where the temperature is likely to be below 15 deg. above zero, planting had better end with November. The risk of loss from fall planting, even in unfavorable places, is much lessened by severe pruning or shortening in.

Tender plants or shrubs, evergreens or deciduous, that are hardy enough after getting fully established, should be protected with a thin screen of branches, or any litter that will break the full force of the wind or sun's rays. The *Morinda Spruce*, *Abies Douglassi*, and *Silver Fir*, are perfectly hardy with the thermometer much below zero, when they have thus been nursed up eight or ten feet high. Herbaceous plants, such as *Pæonies*, *Dieltrya spectabilis*, *Phloxes*, *Delphiniums*, etc., are better to be protected around the roots with some litter; for, although perfectly hardy, the protecting them from frost permits their roots to grow throughout the winter, and they push earlier and stronger in spring.

Roses, and many other things which flower from last season's wood, and which wood it is therefore important to preserve, may be saved by having the branches laid down under the soil. The tenderest kinds of roses may be preserved successfully in this way.

Bulbs, as *Hyacinths*, *Tulips*, *Crocus*, etc., if not already planted, should be at once proceeded with. A very rich sandy soil is the choice of the *Tulip* and *Hyacinth*. They should be set about four inches beneath the soil, and a quantity of sand put around each bulb. After planting, a covering of manure may be put over the place of planting, for reasons already given. Ground-mice—some say moles, also—are at times very destructive to these roots. No efforts should be spared to trap and destroy them.

It is a very good plan to soak peas in water till they begin to swell, when they should be rolled in arsenic, and buried in different parts of the soil near the beds. All the different kinds of lilies, including the most beautiful and rare kinds of Japan Lilies, are perfectly hardy, and beds of these are among the handsomest and sweetest adornments of the pleasure-ground through summer and autumn months. A very dry soil does not suit these. A rich and strong loam, rather inclining to dampness, will grow them to perfection.

When the leaves have fallen, many will commence pruning. Properly, summer is the proper time to commence pruning; the winter should be the time the job commenced in summer should finish. The object of pruning in the winter season is to impart vigor to the tree, or to cause branches to push next season strongly and vigorously in such parts as it may be desirable to have them. A tree which is already growing very vigorously, and is shapen according to our best wishes, can receive no advantage from pruning now. Any branches that cross each other, or that are otherwise misplaced, may, however, be cut out. Any trees that have arrived at maturity, and have some parts apparently weakened or decaying, should, on the other hand, have a thorough overhauling now. All scars made by the sawing off of any of the larger branches, should be painted over to keep out the damp, and to preserve it sound till the new bark shall grow completely over it. This a very important matter. Many fine trees are prematurely lost through this neglect. The wood decays, water enters, and the tree soon becomes hollow and worthless. We always use paint, but others use gum-shellac dissolved in alcohol, a bottle of which they always keep on hand, ready for the purpose.

This is also a good time to cut away any trees that it may be desirable to take down. When a place is first planted, many common trees are set in with the choicer ones, with the design of taking them away as the better ones grow. These, when becoming thick, should be gradually thinned out.

Hedges, also, will need attention. Those a year planted should be pruned where it is desired to make them shoot vigorously and freely. Older hedges that have been pruned properly in summer will need little now besides trimming slightly to preserve their desired shape. If an old one is in such a condition that it seems to require a good winter pruning, it may be set down as good for nothing, and not worth further attention. The better plan would be to cut it down to the ground and let it shoot again for a better summer treatment in fu-

ture. It is very important that no weeds or litter of any kind should be left near hedges. Under such protection mice harbor, and feed on the plants, often to the utter destruction of the hedge. Those who keep their hedge-rows clean, never, so far as our observations go, suffer from mice. The clippings of hedges and small prunings of hedges may be put to a very good use in improving the soil. Underdraining is now universally admitted to be one of the best means of permanently improving land. Where tiles cannot be conveniently had, small stones or similar waste rubbish may be thrown in the bottom of the ditches, and over these loose materials the prunings of the season placed thinly, but firmly, before throwing in the soil. They keep the soil out of the drainage, and, as they decay, absorb a great quantity of moisture, which, in a dry time, give off a great portion again to the dryer soil. Even where tile are used, they may be employed to advantage.

Flower-beds should have attention at this season, so far as preparing them for flowers next season is concerned. A very rich soil is improper, as it encourages too much leaf growth; while in a poor soil they will not grow at all. Flower-beds generally do better with concentrated manure, such as guano, than with rank, unfermented material. The very best soil for flower-beds is top-soil from an old pasture, which has been in a heap to rot for a season. Verbenas, especially, revel in such a situation. There are a few things that give greater interest to gardeners than rustic seats, arbors and vases. This is the proper season to collect materials for the work, which consist of the ugliest and crookedest pieces of wood that can be got.

Carpenters cannot do work of this kind properly. Gardeners, where they possess a taste this way,—and most of them have the idea,—always can give the best hints for these affairs. A good, handy man—handy with the saw, hatchet and knife—would soon make a paradise of the poorest looking garden with very little of the commonest material.

VEGETABLE GARDEN.

In no department of gardening is a deep and rich soil more important than in this; and at this season we could not give better advice than to lose no opportunity of improving it in this respect. Trenching may be carried on whenever the ground is not frozen over an inch in depth. We are not in favor of that species of trenching which throws the surface-soil to the bottom and brings the subsoil to the top, in the preparation of a new garden. This should

only be adopted for worn-out soils. The proper plan is to throw out the surface soil on a strip three feet wide, then breaking up the subsoil thoroughly to the depth of one or one and a half feet. On this broken subsoil the surface soil from the next trench is thrown, and so on until the whole be finished. The manure should be so applied, as to be worked in with the surface soil, as the work proceeds. It is little use to attempt to grow vegetables unless the soil is so treated. They may be and are grown on thin soils, not only at a great expense for manure, and at a great risk of dying out in a dry season, and of having the roots rotted out in a wet one. As long as the frost, severe enough to injure the celery crop, keeps away, it may have earthings up. Care must be exercised in the operation not to let the earth get into the hearts of the plants, or they will be liable to rot. When the plant has evidently finished its growth for the season, measures should be taken to preserve it through the winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take it up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist and free from frost, and whatever mode of protection is resorted to, these facts should be kept in view. Beets, turnips, and other root crops will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar. Parsnips are best left in the soil as long as possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby. Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar, or be buried in the soil, heads downwards, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil, and then completely covered with cornstalks, litter, or any protecting material. The main object in protecting all these kinds of vegetables is to prevent their growth by keeping them cool as possible, and to prevent shrivelling by keeping them moist. Cabbage plants, lettuce, and spinage will require a slight protection before hard freezing. This is usually done by scattering straw loosely over. The intention is principally to check the frequent thawings, which draw the plants out of the ground.

In making new vegetable gardens, a south-east aspect should be chosen, as far as practicable. Ear-

liness in the crops is a very great desideratum, and such an aspect favors this point materially. Too great a slope is objectionable, as inducing too great a run of water in heavy rains. The plots for the crops should be laid off in squares or parallelograms, for convenience in digging, and the edges of the walks set with box edging. If water can be introduced, it is a great convenience.

Sometimes Broccoli does not head before there is danger of frosts, especially if growing vigorously. If taken up with small balls of earth, and set in a damp cellar they will still perfect themselves.

Asparagus beds, after the tops have been cleared off, are better covered with litter, or stable manure. The plants shoot easier for it next season.

When the ground becomes frozen, or no other work offers, preparation can always be made for advancing prospective work when it arrives. Bean poles may be made, and if the ends are charred, and then dipped in coal tar, the commonest material will be rendered nearly equal to the best cedar.

FRUIT GARDEN.

In planting fruit trees, the Pear, Apple, and Cherry, invariably do better fall-planted, than when deferred till spring, north of Philadelphia. The Peach, Plum, and Apricot, should not be planted till spring, if not done before heavy frost. All fruit trees when set out should be vigorously shortened in. Trees should not be planted deep—no deeper than they grew before removal. It is better to draw a mound of soil about them for the winter, to be removed early in spring; it preserves from frost and throws off superabundant moisture. Dwarf Pears must be set below the Quince stock—and in selecting these, choose those that are budded near the ground—where a long-legged quince stock has to be buried so deep, the tree makes but a poor growth for some seasons afterwards, and is in other respects injured. In severe climates, Cherries of very luxuriant growth are liable to be winter-killed. To obviate this, the weaker growing kinds, as the Duke and Morello, and the Mahaleb, are used for stocks to graft them on. This checks their vigor, and renders them hardier. It, however, always keeps them dwarf,—and superior sized fruit is not so probable. Where danger of winter-killing exists, these strong growing kinds should not have a highly manured soil, and where they yet grow very vigorous when young, they may be root-pruned, as already described. If they can be got through the first ten years of their life, till they loose their youthful vigor, they will not suffer in severe winters afterwards.

Currants, Gooseberries, Raspberries, Strawberries, and Blackberries, can generally be depended on,—and near a large city are always a source of profit.

The three first named like a moist subsoil, and a situation not exposed to drying winds. The Strawberry and Blackberry will do in a drier soil, and warmer situation. The Blackberry has now become an important fruit, but should not be planted where its creeping roots will be an objection. There are always "odd corners" where such plants become just the required thing to fill in with. The Strawberry, Blackberry, and Raspberry should be protected in winter, north of Philadelphia,—most kinds are hardy enough to stand without this care, but it is better to employ it nevertheless. Strawberries may have leaves or straw litter thrown over them, and a little soil thrown over to keep the wind from blowing them away. Raspberries and Blackberries should have their last season bearing shoots taken out, the young canes pruned so that three or four of the strongest only are left, and then laid down and covered with soil. To do this without breaking them, dig out a spade full of earth on one side of the hill, and with the heel press the stock over. The inclination will be sufficient to prevent the breakage.

HOT AND GREENHOUSE.

The Hothouse will now be reaching its most attractive season. Begonias, Bouvardias, Justicias, Aphelandras, and so on, will now be a blaze of beauty till spring. Happy they who can afford the luxury! The temperature should be maintained at from 55 to 65 deg. and frequent syringing be employed. Mealy bug will now begin to be troublesome, and the various remedies should be vigorously employed. It is scarcely necessary to remark, that if orchidæa are grown, those which are inclined to grow now should have the shadiest and dampest end of the house to themselves.

The Greenhouse will now begin to look more natural, after having had the stock housed this month. With many plants having probably been taken up out of the open ground, many dead leaves will daily appear, requiring frequent removal, neatness is one of the chief beauties of a greenhouse. Acacias, and Australian plants generally, with hard wood and delicate roots, should be placed at the coolest end of the house, where little water will be required. When necessary it should be thorough. Frequent waterings soon render the roots of these plants unhealthy, when it is very difficult

to restore them to vigor. Whenever the foliage becomes a sickly yellow hue, the best plan is to plunge the plant in a larger pot, filling the space with moss,—and when the plant requires water, give it only through the moss, unless the plant seem to become so dry as to suffer, when it should receive a thorough watering. Very little fire should be applied to a greenhouse; just sufficient to keep it at about 45 degrees. Unless very far north, but little fire heat will be required this month.

Communications.

MISCELLANEOUS SKETCHES.

BY ORCHIS.

The range of mountains so universal throughout the interior of the State of Pennsylvania furnish objects of investigation and study to the lover of nature, that are rarely surpassed in the Middle States; and although not possessing an excess of rare plants, the flora peculiar to this region is nevertheless highly interesting and exceedingly beautiful.

During the past summer months, the writer enjoyed the privilege of rambling over the rocky wooded heights, and through the deep mountain passes of this section; but unfortunately, owing to a previous severe drought, the finer plants were quite scarce, and in most instances poor specimens for examination.

The beautiful *Rubus odoratus* with its large rose-colored flowers, and showy, acid fruit, we found very abundant. Although this peculiar species is not unfrequently met with in many localities, all former plants that have hitherto fallen under my notice, sink into perfect insignificance, when compared with the splendid specimens that adorn the mountain slopes of the Alleghanies. In the same localities are growing fine plants of the *Sambucus pubens*, (Red-berried Elder) with their large clusters of scarlet-colored fruit, or occasionally *pure white*. The birds are so fond of these attractive drupes, that the plant is often stripped before the fruit attains maturity. Along the light, sandy ridges, in exposed situations are large plants of *Hypericum prolificum*, producing large clusters of bright yellow flowers, which are exceedingly attractive. Among the rocks we noticed the *Sedum telephioides*, just going out of flower, and surrounded by numbers of Ferns peculiar to such locations. Clambering over the huge masses of rock and festooning the tallest trees, I noticed the most luxu-

riant specimens of *Ampelopsis quinquefolia* that I have ever seen. Interlacing these in many instances were equally fine plants of *Menispermum*, *Dioscorea*, *Celastrus*, &c. In a sluggish, muddy stream we detected the rare *Helonias bullata*, but too late in the season for observing the bloom. Near by is the recently discovered *Potamogeton crispus*.

How strange the nature and disposition of many plants, and how inscrutable the laws that govern their reproduction. But a few years since and the very identity of this species was doubted, and now it is frequently found a hundred miles distant and growing in the greatest profusion. In the low swampy grounds and stagnant pools, we met with the rarer species (?) *Typha angustifolia*, with their long linear leaves and curiously *partitioned* or *separated* spikes; and in vast numbers the *Saururus cernuus*, contributed their drooping, pure white spikes, to enliven these unhealthy localities. Around the margin of one of the natural ponds I noticed a greater variety of forms in the *Sagittaria variabilis* than ever before. It seemed as if this variable species was endeavoring to determine how great a number it was capable of being transformed into, thus furnishing a perplexing study to the young botanist, but proving conclusively that Dr. Engelmann is correct, in combining into one the many doubtful species of Pursh and Willdenow. *Lemna polyrrhiza* we noticed uncommonly large and vigorous, floating about through the above.

Although not in flower, the fine old plants of *Rhododendron* and *Kalmia*, that surrounded these damp low situations, bore ample evidence to the gorgeous show that had evidently been

"Born to blush unseen."

Common as they are, one could not but admire the rank grow of such plants as *Asclepias cornuti* and *Cassia Marilandica*, in the same localities; as they frequently attained a height of five or six feet. In the deep alluvial soils along the Susquehanna, the *Asimina triloba* (American Papaw), and the *Cercis Canadensis* (Judas-tree or Red-bud), flourish with astonishing vigor, as well as the many species of Oak, etc., that are native of this region. The Conifera is well represented by healthy and very frequently splendid specimens of *Pinus strobus* (White Pine), *P. mitis* (Northern Yellow Pine), *P. rigida* (Pitch Pine); and the rich dark green foliage of innumerable *Abies Canadensis* (Hemlock Spruce). In the dense shade afforded by these trees, the *Cypripediums* grow abundantly, but we were too late to find them in flower.

To the lover of fine fruit, this section of country affords a rich treat, in the abundance of native

Raspberries, Blackberries, etc., that abound in almost every situation. As an instance of their great profuseness, I may state, that in one locality I noticed a tract, at least three acres in extent, completely covered by matted vines of the *Rubus Canadensis* (Dewberry). Taking into consideration the size and flavor, as well as the immense quantity of fruit then on the plants, they might well challenge competition. The *R. villosus* (Common Blackberry) was also very abundant, and presented two remarkably distinct varieties. In addition to the common form, was a variety with long cylindrical-shaped fruit, exceedingly sweet and luscious, and possessing somewhat the flavor of the Mulberry, besides resembling it in shape and color. The *R. occidentalis* (small Black-cap or Thimbleberry) is also found in the greatest abundance, but the berries were not unusual in size or flavor. As a general rule, the Native fruits peculiar to this region were mostly of delicious flavor, and greatly superior in this respect to our cultivated varieties.

In concluding this rough and hasty sketch, the writer would remark, that although the scenes and incidents connected with camp-life are unusually dull and uninteresting, the weary march and lonely picket duty very frequently affords an opportunity to the lover of nature of becoming more intimately acquainted with the vegetable kingdom; those lovely gifts that have become so interwoven with his very existence, that no circumstance or situation can possibly prevent his admiration of their charms. Such having been the experience of the writer, he has offered the foregoing brief notice of such plants as more particularly attracted his notice, with the hope that others might be induced to feel a like interest in the "silent messengers" that surround them on every side, during their daily walks, and thus become participants in those pleasures from which they have hitherto been debarred.

PENNSYLVANIA HORTICULTURAL SOCIETY

DISCUSSIONAL MEETING, AUGUST 25, 1863.

Mr. S. S. Rathvon, Professor of Entomology to the Society, presented the following essay on
THE DESTRUCTION OF INSECTS IN GARDENS AND PLANT-HOUSES.

The subject upon which I have been appointed to address this society is becoming one of more than merely an ordinary interest, and I cannot but regret that some individual having had large experience in Garden and Plant-house culture, had not been selected on this occasion to illustrate so im-

portant and fruitful a theme. Under the most favorable circumstances, I can but offer to your indulgent consideration a few suggestions, founded partly upon my general observations as an amateur Entomologist, and partly upon the experiences and suggestions of others.

When we take into consideration the vast number of species of insects now known to exist in our country, and the multitudes of individuals belonging to many of these species, that are brought into active and visible being during the course of a single season, we may well be astonished that, comparatively speaking, so little injury is sustained by the productions of the earth from their depredations. It may also be a matter of surprise, that, notwithstanding the general attention in that direction, and the many remedies recommended and tried, there still should be so few of them that become victims to the artificial means provided for their extermination.

All the various means devised and in existence for the destruction of insects, may be resolved generically into *two*, namely, the *natural* and *artificial*, and these are respectively susceptible of numerous specific subdivisions or varieties—almost as numerous as the species of insects themselves. The natural means are always operative and operating, day and night, spring, summer, autumn and winter; but the artificial means are only capable of a special and limited application. In directing our attention and our energies to these latter means, we must by no omission, neglect the attention due to the former, else we may be unwittingly depriving ourselves of the industrious and effectual labors of a large band of co-workers, that instinctively assist us in this important field of use. In this use, if he will, every cultivator of the field, the fruit orchard, the garden, and the plant-house, may engage, and by his co-operative energies, assist in solving a most important problem in nature's economy.

The farther we advance in our observations and investigations of the domain of nature, and especially in that division of it which relates to the animal kingdom, the more we must become convinced that, in proportion as the universal equilibrium, which normally exists in all its parts, is disturbed, in that same proportion will there be a redundancy of one or more species of noxious or destructive animals in existence, at certain times and in certain places.

Civilization seems to have wrought as powerful an influence upon the distribution of the animal kingdom, and also upon some of its economies and habits, as it has upon the vegetable kingdom, and

it is accordingly a remarkable fact, that those animals which prey upon the weaker, the more docile, or more sluggish of their race, also avoid the approaches of civilization and and cultivation, more than those do that are purely herbivorous, or vegetable feeders. This rule, according to my experience, especially obtains in that subdivision of the animal kingdom included in the *articulata*, prominently among which is the class *Insecta*. Predaceous insects,—those I mean that feed upon and destroy other insects,—are almost universally shy of the approaches of any other being, and also in most cases are so organized as to enable them to make a rapid escape.

Although this rule may appear to be reversed in a few individual instances in some of the *Orders* of the *Class Insecta*, yet it holds good in the order *Coleoptera*, and some others, as a *general* rule.

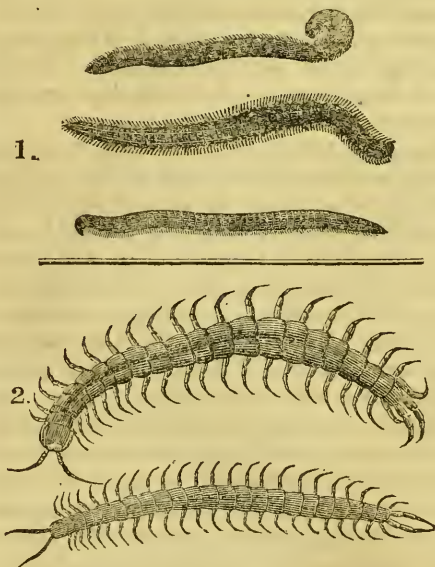
We find that the terrestrial *carnivora* of this order are exceedingly cursorial in their habits; that they are provided with moderately long, neat, and well proportioned legs and antennæ, and also with correspondingly powerful mandibles, which enable them to move with the greatest facility, and by these means to detect, capture, and secure their prey. On the other hand, those species that are herbivorous are usually very sluggish and awkward in their attempts at running or walking, and whilst the former quickly attempts to make its escape by running, and in some instances also by flying, at every seeming approaching of danger; the latter resorts to strategy or deception, if it does not possess the power of instantaneous flight. This rule is also more or less applicable to these insects respectively, in their *larvæ* states.

The larva, for instance, of all the wood boring insects have scarcely the power to move at all on a plain surface, and this is also the case with the whole Weevil tribe, whether their larvæ bore into wood, nuts, fruit, or the stems of leaves of trees and plants. Whilst, on the other hand, the larvæ of the *carabidinous* insects, as well as the *aphidiphaga*, are provided for the most part with six moderately long legs, and with sufficient cursorial power to pursue and capture their prey.

This characteristic of adaptation of means to ends in the animal world is very distinctly and forcibly illustrated in the two divisions of the *Myriapoda*, a class of animals that, although belonging to the *articulata*, yet are very distinct in their organization and form, from the class *Insecta*. These animals, however, make approximation to insects in some of their leading habits.

The *Myriapoda* are primarily divisible into two

subdivisions or families, called by Latrielle the *Chilognatha* and the *Chilopoda*; the first including the "Millipedes," and the second the "Centipedes;" the former being herbivorous or vegetarian feeders, and the latter carnivorous in their tastes and habits; and accordingly we find that the first is slow and gliding in its movements, and when interrupted makes no attempt to escape, merely coiling itself up spirally and feigning death; the second makes a precipitate retreat at every approach of apparent danger. These families, or individuals belonging to one or both of them, are found in almost all vegetable gardens and plant-houses, but they are not there for the same purpose; therefore, when we discover these animals in such places, it would be well to make such discrimination in their destruction, as their respective habits and economies would seem to suggest. There is no doubt we ought to destroy all the "Millipedes," although some of these feed upon *decaying* vegetable matter, but the "Centipedes" it would be well to spare, unless we have had ocular demonstration that they are too destructive to vegetation. It is fortunate that the destructive kinds of these animals are so organized as to be incapable of making a rapid exit, otherwise they might constantly elude our utmost vigilance, for, although the "Centipedes" are as numerous as the "Millipedes," yet from this dissimilarity in their habits, we never see as many of the former as of the latter.



No. 1 is a group of *Millipedes*, injurious to vegetation, attacking turnips, radishes, cabbages, etc., about the roots.
No. 2 is a group of *Centipedes*, not injurious to vegetation, but feed upon animal matter, especially upon insect larvæ.

The destructive kinds of *Myriapoda* are often found in gardens on low moist grounds, where they sometimes do great injury to early vegetables, especially to radishes, lettuce, beans, cabbages and cucumbers. Although I am nothing of a gardener, yet I have frequently found the Millipedes very destructive to these and other vegetables in gardens at different times.

The *Millipedes* are mainly distinguishable by the cylindrical form of the body, and their greater number of feet,—four being attached to each segment,—also from their slow movement, and coiling themselves up, when disturbed, in a spiral form.

The *Centipedes* have flat bodies, fewer feet, run very swiftly, and do not coil up when disturbed, but immediately hide themselves or endeavor to make their escape. Our woods and forests abound with the former, where they feed on the different kinds of fungus and other species of vegetation. The latter are also found in similar localities, but not exposed to view, shunning the light, and preying upon worms and insect larva, which they find under any accumulated rubbish. Although both of these families seem to "love darkness rather than light," yet it is not manifest that in the same degree "their deeds are evil."

Any remedy that would be effectual in destroying noxious insects, would no doubt also be available in its application to these Millipedes, of which, perhaps, every experienced gardener may know many.

My chief object in introducing these animals here to your notice, is to exhibit one of those natural remedies which exists in nature against the increase of noxious animals,—to which I have already alluded,—and to show one or more of the leading characteristics by which they may be distinguished, in order that the useful and the hurtful may not be confounded.

As a general thing, when articulated animals, without the power of flight, are endowed with perfect cursorial powers, it is to enable them to overtake and capture their prey. Where these running powers do not exist, as a means for the purpose aforesaid, they are supplied by a development which requires the animal to employ strategy in securing its prey, as in the *raptorial* or grasping animals, which remain motionless, and pounce suddenly upon any other animal that may come within their reach. A little observation on the part of the practical gardener, will enable him to confirm or improve these views, and also to suggest some *artificial* remedy to assist the natural one. I would therefore suggest, that when you discover insects and allied animals in your gardens, enclosures, or plant-hous-

es, that have the power of running very swiftly, and that depend solely upon their legs to effect their escape from you, you will most probably find that they are predaceous in their habits, and accordingly you need not be very apprehensive of any danger to vegetation from them. But on the other hand, if you find that they precipitately fly away, coil themselves up, fall suddenly to the ground and conceal themselves beneath a clod of earth, or feign death, with few exceptions, you will find that such animals are injurious to vegetation. Of course when you see insects and other animals committing depredations upon your fruit or vegetables, such evidence must be regarded as of more value to you than any number of probabilities or theories of other men.

A remarkable exception to the rule I have been suggesting, is to be found in the *Cockroaches*, a family of insects that are *general* feeders, nothing coming amiss to them, either of animal or a vegetable nature; but if I were to find even these in a garden, or a plant-house, I should as soon suspect their presence there for the purpose of destroying *animal* as *vegetable* substances, that might be found there. Indeed, the species that are usually found in our woods and fields are always discovered under such circumstances and in such situations as would seem to imply that they lived entirely on animal food. Their cursorial powers also favor such a supposition.*

* But if even it be certain that the Cockroach is an enemy to vegetation, and from the habits of the insect, if an enemy at all, it would be most likely to the vegetation of the plant-house. Yet it has itself a most formidable enemy in one of the "Centipedes" to which I have alluded; which also has its special locality in such places as the Cockroaches delight to inhabit. We have in this locality, and I presume they are also found in and about Philadelphia, a species of *Scutigera*, which is known to attack and destroy the Cockroach. I have never noticed this animal in any other locality than Lancaster City, and it is also observable that in those houses where these animals are found, there are few or no Cockroaches. This animal may be an exotic, as the common Cockroach is, and if so, it is probably the *S. coleoprata* of Europe. I have observed a difference in them, but I have not had an opportunity to examine sufficiently to ascertain whether these were specific or only sexual differences. This centipede is much shorter than the common species, is of a bluish tinge on the back, and has very long and slender white legs and antennæ, and is an exceedingly swift runner.

Mr. James Thackary of this city, relates a very interesting account of an encounter which he witnessed between one of these centipedes and a cockroach, in which the former came off conqueror, after a very short and seemingly unequal contest. As soon as the cockroach observed that he was pursued, he raised himself as high as he could upon his feet, appearing to be still, and watched his cautiously approaching adversary, making no progress in any direction, only turning his head in the direction of his enemy. When the centipede had sufficiently reconnoitered the ground occupied by the cockroach, and had approached near enough, he suddenly sprung upon him and grappled him, and in a moment

Cursorial insects must not be confounded with *saltatorial* ones: that is, those that are leapers or "jumpers," which can make their escape with equal facility, though not by running.

Some insects are most destructive to vegetation in their larva state, whilst others in their perfect or mature state are the most injurious; and therefore it often happens that the mature insects which beget the most destructive larvæ are entirely harmless themselves, and are consequently allowed to found their destructive colonies, without exciting the special observation of the floriculturist or gardener; simply because the parent insect may be beautiful and symmetrical in form and color to the eye, and banquets daintly on the perfumed nectar of flowering trees, plants, and shrubs. Take for instance the order *Lepidoptera*, which includes the various species of butterflies and moths, and we find there is not a single species belonging to the whole order that is not, in its larva state, destructive to vegetation or some other substance in which the human family has a common interest. A few of them prey upon wooden cloths and clothing, as well as any other articles manufactured out of wool, wherever they can come in contact with them; others upon the waxy cells of the beehive, and others again upon the solid woody substance of trees; but by far the larger number feed upon the leaves of trees and shrubs, and upon succulent vegetation, and therefore are among the greatest pests of the field, the orchard, and the garden. As the *females* of many of these butterflies and moths lay a large number of eggs during the season, therefore these parents of the mischievous broods ought to command the earliest attention of the gardener, because the destruction of these would prevent a vast amount of injury to vegetation, and save the cultivators of the soil a great deal of anxiety, vexation and labor.

For the sake of facilitating a more practical and ready recognition of these insects, they are usually divided into three great *sections*, based upon a few simple characteristics, which seem to pervade the whole of each of those divisions. The first section is called the *Diurnia* or "day-flyers," because the individuals belonging to it are usually found flying abroad during the day alone; and the warmer and more sunny the day is the more active and more numerous these insects are. These are the butter-

afterwards, without being able to see *how* it was done, the cockroach was a dead carcass.

Now, whether the remedy or the disease is the most desirable to be tolerated, must be determined by the judgment of those who suffer from the infestations of the "cockroach," and those whose feelings revolt against the presence of the "centipede."

flies of our earliest and perhaps most joyful youthful associations; but nevertheless in their larva state, they belong to the noxious kinds, and are to be dealt with accordingly. The second section is called the *Crepuscularia*, or "twilight-flyers," because the individuals belonging to this division are usually found flying abroad near the close of the day, or even at mid-day, or earlier when the weather is dark and cloudy. The third section is called the *Nocturnia* or "night-flyers," because these insects are partial to this period in their roamings abroad; notwithstanding, they are easily attracted by any artificial light, and usually collect around it in almost countless numbers.

[To be continued.]

Mr. Hibbert finds Whale-oil soap, applied in solution, with a syringe, an effectual destructive of red spider.

Mr. Satterthwait—One-half the labor of the agriculturist and horticulturist is caused by insects. But for them they could grow double their present crops. Predaceous insects are very valuable and should be protected, not destroyed indiscriminately as they are by most people. Ants are among the most valuable. One year his Cherry trees were nearly ruined by the black aphid; in a few weeks after their appearance millions of ants devoured the aphid and cleared the trees, which made a new growth and bore well. The same with pear trees.

Mr. Hibbert has observed that ants cover some plants with a kind of scale.

Mr. Graham—Ants destroy my Verbenas often in a day.

Mr. Fairbrother—Ants often attack and destroy the aphid on rose bushes.

Mr. Harrison. The onion maggot, it is stated in a communication to the *Country Gentleman*, is readily destroyed by the application, through a very small tube, of boiling water. Too much water kills the plant.

Mr. Hibbert—Whale-oil soap kills the thrip, the aphid, and the red spider.

Mr. Harrison—The Gishurst compound, so much in vogue in England, is said to be a specific for these pests. It leaves an unsightly stain upon the plants to which it is applied. Is of the opinion that it is composed of sulphur, lime, and Whale-oil soap.

Mr. Satterthwait—Has observed a new insect, this year, on peppers; it attacks the foliage and causes it to drop. Under the microscope it resembles an egg, and it does not appear to change its form.

Mr. Hibbert—Has found it on the pepper plant and also on the new *Cissus porphyrophyllus*.

Mr. Satterthwait—The second crop of caterpillars has been very destructive this year on all deciduous plants; it is apparently the same insect as the first, which appeared in July.

Mr. Eadie—There is a mottled caterpillar, with tufts on the head an inch long, which infests the leaves of the Cherry tree.

Mr. Satterthwait inquired as to the best treatment of the slug on the leaves of the Pear tree.

Mr. Harrison—Dusting with powdered lime, or even with dry powdered loam, will destroy them. The largest Pear orchardist in this country employs boys to remove them by hand.

Mr. Satterthwait—How far can birds be increased on our farms by the use of bird boxes placed in the trees? Has experimented some, and thinks much may be done. They are the only sure preventive of the curculio, which destroys one half of all the fruit grown. A friend has tried the colonizing of birds with entire success. The Blue-bird is especially valuable. Had a tree of the Green Gage near his house, and a Blue-birds nest adjacent. He always raised fine fruit from the trees, while the birds had their nests there.

[We do not usually give the discussional remarks until the essay upon which they are founded is completed; but as the latter will run through one or more numbers and the former contains several points of present practical importance, we suspend the rule in this instance.—ED.]

ALLEN RASPBERRY.

BY A. L. PENNOCK, UPPER DARBY, PA.

Among the varieties of raspberries recommended by different fruit-growers, I see almost every kind but the Allen; and as I consider them Number One, allow me to give my experience in their favor. Four years ago I set out a few hundred plants of the Allen Antwerp. The canes were cut to about six inches in length when planted, and the first year bore as full a crop as any other varieties, and fine berries. That year a great quantity of suckers were thrown up, and but few berries were produced the year following, except from one hill, in which I allowed but few suckers to grow, and which was on the side adjoining the Belle de Fontenay. The canes on that hill were loaded with magnificent fruit.

I was so much encouraged by this experiment, that on setting out two acres more with raspberries, I planted rather more than half with Allen Ant-

werp, alternating with Allen's Red Prolific, Orange, Improved Black Cap, Purple Cane, Hudson River Antwerp, and Belle de Fontenay,—in part of the field planting three rows of Allen Antwerp together. Where single rows alternated with Allen's Red Prolific, they did best, and where three rows were together, adjoining two rows of Orange, they bore the least. As none of the raspberries in that field were protected during winter, the Orange were very much killed, which may account for the want of fertility of the Allen. In another field, I have Orange, Hudson River Antwerp, Fastoff, Northumberland Fillbasket, and Hornet, all laid down and covered during winter, but none of them have proved with me as valuable as Allen's Antwerp and Allen's Red Prolific alternating, and but a few suckers allowed to grow in a hill. They require no winter protection, bear abundantly large beautifully colored berries, and are finer flavored, and command a higher price than any of the other varieties.

PLEASURES OF BULB CULTURE.

BY WALTER ELDER, PHILADELPHIA.

I am much pleased to observe in my travels an increasing taste for the culture of a finer variety of flowers, and particularly of early spring bulbs. Seedsmen and nurserymen have doubled their usual importations within the past five years, and still the demand exceeds the supply. The varieties are far superior to those of late years, and yet the prices are unchanged.

Purchasers should make their selections and get them as early as possible, having them planted at once: the earlier in October the better, as the soil is then warmer than the weather and will continue to be so until cooled by heavy frosts, which accelerates the growth of roots before winter fairly sets in, and gives a vigorous growth in spring. The plants are then stronger and their blooms larger and finer. It is now established that sea sand is very beneficial to the growth of Dutch bulbs, so those who cannot procure that will do well to sow salt thinly over their bulb beds immediately after planting: the rains will dissolve and carry it down to the roots by degrees, and the soil will be less easily affected by frost. The beds should be covered about the end of November, with tree leaves or straw manure, with Pea brush or prunings on top to keep them from being blown off; these coverings and the salt will enable the interior of the soil to retain its warmth for a longer time, and root growth will be greater.

I had occasion to visit the commercial Flower-

gardens of Messrs. H. A. Dreer, and R. Buist & Son, during last spring. At our first visit the Van Thol tulips and Crocus were fading, but Hyacinths, Crown Imperials, and the Narcissus family were in their splendor. Although Narcissus have fewer colors the variety of the bloom, and their delightful perfume will sustain their popularity. The large bells and heavy heads of Hyacinths, with their many colors and sweet odor, were charming. Crown Imperials were in full glory; many had their stems and leaves as finely stripped with green and yellow as the Ribbon-grass is striped with white and green; that, with their large crowns of bloom of clear buff and shining orange, make them very fascinating.

Our second visit found the Tulips in full blow; in the morning the selfs and parrots looked in their prime, but they began to wane under the noon-day sun. The real florists varieties were in height of perfection: the stalks were long and strong; the blooms large, and so finely marked that no art could imitate them. We would advise every lover of fine flowers to visit these gardens during the season of early bulb bloom, and see their matchless beauty and breathe their delightful perfumes.

It is hardly possible to look upon these vernal beauties, when grown in large beds and in their splendor of bloom, and resist the desire to purchase.

There is a cost to all our amusements; in some the cost far exceeds the pleasure derived. The cheapest and most healthful, and that which is the most enduring, is the beautifying ones homestead with garden embellishments: they will be always increasing in beauty and attractiveness, and with little care, no danger of disappointment.

As before remarked, now is the time to plant a great source of this ornament and pleasure—Spring-flowering Bulbs. Seedsmen and nurserymen are the principal importers, from whom they may be obtained in any quantity. Beware of auction bulbs, which only bring disappointment. For having planted, there should be no risk of our spreading sunshine and gladness around our door in early springtime.

PEACHES WITHOUT GLASS.

BY JAMES WEED, MUSCATINE, IOWA.

Our trees, embracing such varieties as Early York, Early Tillotson, etc., which were enclosed last winter, are now (Aug. 1st) swelling their fruit rapidly, and up to this time have given us no trouble since the frosts of spring were past, except once or twice spading the ground lightly under them. The season has been the driest on record; only one

moderate shower, which occurred the last of June, since the early part of May; and though they would have been greatly benefited by watering, their growth has been remarkably luxuriant, showing great promise of fruit next year.

The shutters, 12 x 12 feet square, composed of a double covering of rough boards, with a two-horse wagon load of damp sawdust, weighed, by estimate, about one ton each, and of course were not opened and closed with the greatest facility, even with the aid of an efficient windlass.

A rolling hinge has been adopted recently, by which the shutters are constantly balanced, in whatever position they may be turned, which not only obviates the above difficulty, but much simplifies and diminishes the cost of the structure. This mode of operating the shutters enables us to render the straw frames *perfectly efficient*, by closely packing the air spaces in their centres,—which on trial last winter could not be made *confined air spaces* by a simple straw thatch on each side,—with leaves, dry swamp moss, straw, hay or other similar material, the additional weight being no serious impediment.

[We are glad Mr. Weed has taken on himself the special mission of showing the results of slight protection on fruit trees. He is doing immense service to the fruit-grower,—even more we think than he claims credit for,—and we hope he will receive his reward.]

Few persons would believe how much a very little shelter will do,—shelter from either very hot sun, very cold winds, or extremes of temperature. On the Peach tree particularly, protection has surprising effects. We never see the yellows, or some other diseases, when a Peach tree is under glass, or when a chance one in a tub or pot is kept in the cellar through winter;—and when, in travelling for miles through the country, if we notice Peach trees in a village yard, or in a protected gully by a mountain side, or even by being surrounded,—even “smothered,” as some might say, by other trees, are they any thing but perfectly healthy.

We shall be glad to hear from Mr. Weed whenever he continues to record his observations.—Ed.]

NOTES ON SOME STRAWBERRIES.

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

I regret that I find it due to candor to here state the fact in regard to that splendid favorite, *La Constante*, that during this rainy summer the leaves have become parched up and the runners have mostly perished. *River's Eliza* has become

similarly parched, and is also too tender for our winters. *Honneur de Belgique* has been rejected for its demerits. *Prince Frederick William* is the smallest of the pines, and scarcely merits culture, although a New York vender of the plants extol it. *May Queen* (English) is small and inferior to all other English pines, and Nicholson disclaims it. *Reine Hortense* is good, but unproductive, tender and valueless. *La Sultana*, sent out by friend Hovey, through some casual inadvertance, and cultivated by others has proven to be identical with *La Constante*. The genuine, which I imported, is a magnificent berry, and often two seemingly united, and is well extolled by De Jonghe. *La Perle* is a shy bearer. *Trollope's Victoria* is only second quality and a poor bearer. *Wellington*, from Scotland, is only medium in size and quality. *Wizard of the North* has agreeably disappointed us, and has proven of large size, excellent flavor, and one of the most hardy of the pines.

And now, when speaking, I may say, that the following are all more robust and hardier than *Triomphe de Gand*, for which this character has been claimed as its particular merit, by those who knew of no other, as a set off for its poor crop and deficiency in sweet and flavor, when compared with other pines:—*Lorio*, *Boute de St. Julien*, *Bahadoor*, *Ornement des Tables*, *Jaminette* (hardest of all), *Princess Royal* (also hardy but not as high flavored as the others). All these are more suitable for field culture than any pines hitherto planted for market. *Delices du Palais* has very dark green foliage, which is never affected by summer heat, and will probably prove very hardy. *Frogmore Pine* is the most remarkable of all pines, for its very large, vigorous, and peculiar foliage, and monstrous fruit of the highest excellence. *Lucas*, a seedling grown by De Jonghe, from *La Constante*, has large broad dark green foliage, and very large bright scarlet and extra delicious berries, none surpassing them. *Duchesse de Beaumont*, *Imperatrice Eugenie*, *Emma* and *Eureka*, have proven themselves to be very large, beautiful, and of delicious flavor. *La Delicieuse* is a large orange-scarlet berry, of excellent flavor. *Abington Blush*, of Pennsylvania, proves to be a seedling of the *Wilson*, a red berry, with red flesh, and sour and insipid as its parent. *Orb*, (Nicholson), produces fine large berries, round, somewhat ovate, sweet, juicy, and of excellent flavor. The plant seems rather tender, and required winter covering of leaves and litter.

As I published an invitation to all amateurs to visit and examine my collection, which comprises all the important European and American varieties,

carefully labelled, and surpasses any other collection there or here; I had a most favorable opportunity to take note of their views as to the merits and demerits of each variety. This to me was a matter of much amusement, and as I give away (and never sell) all my surplus fruit, I find the the friendly amateurs very willing to partake and give me their opinions.

[The manifest haste with which Mr. Prince generally proceeds to give his opinion of novelties, detracts from the value of his communications. Then again, the dogmatic style in which he approves or condemns the opinions of others, might be allowed to his advanced age and extensive experience, if he were not so often caught in error, or forced to recant his own opinions.

In the present extract we give from an article with which he has favored us, we note several things on which, within another year, he would write differently, as he has done here now in regard to the past. It is well known how he passed "his veto" on Wizard of the North, before he could have had an opportunity to fairly test it; now, after trial, he praises it handsomely. Again, he writes of Abington Blush as a red berry and sour, which it is not. Haste is no excuse for such errors as these,—nor would it be any excuse to say "I received it as this kind," because the correct description has several times been given in this and other journals.

We regard Mr. Prince's faults more tenderly than some of our contemporaries, in view of the wonderful energy he exhibits in the desire to be useful in his old days; but it is due to our readers to warn them somewhat of his weaknesses.—ED.]

GRAPES, STRAWBERRIES, &c.

BY A. S. MILLER, ALTON, ILL.

The Concord continues to gain favor for its hardiness; the Hartford Prolific for its earliness. The Delaware is the grape for Southern Illinois, fully repaying all extra care bestowed upon it. Where the ground is trenched, drained, and manured well, the slow growth of the vine becomes a recommendation and not a fault; it stands heat and drouth well. Mead's Seedling is well thought of here, some considering it superior to the Catawba. My opinion is that they are the same. Rebecca and Clara do tolerably well; sunburn some.

Many of the Northern kinds will sunburn with us if not carefully protected by the more hardy sorts being trained over them upon horizontal trellisses.

Strawberries are extensively grown here for the Chicago market. Longworth's Prolific and Mc-Avoys are good staple varieties. Would prefer Wilson's Albany and Hovey's Seedling together, or even Triomphe de Gand, if well cared for, than these varieties.

Many of the new kinds burn out. Austin is gaining favor rapidly with our growers; it stands well our hot suns and drouth.

NOTES ON A FEW FAVORITE PLANTS.

BY J. P. NORRIS, WESTCHESTER, PA.

Every amateur has his favorites among his collection of plants. Some prefer such plants as produce handsome flowers without regard to the plants that bear them. Others prefer those whose variegated leaves are their chief beauty. I must confess that I belong to the latter class.

I will now proceed to describe in a brief manner their several charms or advantages. First on the list I place the

Gesneria Zebrina.—This beautiful little plant I first obtained about two years ago from Mr. Kift, the florist, of Westchester. It dies down to the root every year; which root consists of a kind of small bulb. Owing to this quality, it is best suited for summer cultivation, as in winter it dies down to the root. Its leaves have a very velvety appearance, and the color is a light green veined with an exquisite shade of purple. It never grows to a height of more than ten inches. It is best propagated from the root, but can be by cuttings; which latter should be put in silver sand, when it will be found that they will form a small bulb, very much in the manner of Gloxinias.

Next, I think the different varieties of *Caladium* are to be considered. There are numberless varieties of this plant, like *Begonia*, but many of them are so very expensive and hard to obtain, that they are seldom seen in any collection except those of the very wealthy. Those of which I propose to speak are within the reach of any amateur.

Caladium bicolor.—Very handsome, but would be prettier if the red in the centre was more prominent.

Caladium pictum.—Has the same defects as *bicolor*, but not so perceptible, as the red is somewhat brighter.

Caladium bicolor picturatum.—An altered variety of *C. bicolor*. In this *Caladium* the red is very narrow,—in fact there is just enough for to call it green veined with red.

Caladium magnificum.—This *Caladium* is much

larger leaved than either of three above mentioned. It is green, spotted all over with white; and it is rather coarse,—so much so that it has been called by some a “coarse imitation of *Caladium Belleyonii*.”

I must not forget to mention in these notes that magnificent plant *Cissus discolor*, which has been previously referred to by me, in a former number of the *Monthly*.

These notes have become more lengthened than intended, so I will close by giving a list of *Begonias* which I have tried and think worthy of general cultivation in the Greenhouse. Those marked with an *, however, succeed best when grown in a Hot-house:

Begonia Rex—Dark green, with white zone; the hardiest and best of all the *Begonias*, in my opinion.

**Begonia Madame Wagner*—Bright green, with a very broad silver green, nearly extending all over the leaf. It has the fault of damping off at the root; but it is so very attractive and showy that it deserves to be generally cultivated.

Begonia Madame Ahert—Dark green with a broad zone of silver; also has a border around the edge of silver.

**Begonia Marshalli*—Dark copper color,—odd looking.

Begonia Zanthina—Dark green above, red below.

**Begonia Von Richenhamii*—Silver color all over except the veins, which are green; rather delicate and apt to damp off.

Begonia Griffithii—Dark velvety green with a zone of lighter green; very handsome.

All the preceding *Begonias* have variegated leaves, the following are cultivated on account of their handsome flowers:

Begonia manicata, *B. Sandersii*, *B. punctata*.

[In addition to those named by our correspondent, *Begonia Wenderothii* may be named as one of the best. Its leaves are very large, and powdered over with numerous silvery spots.—Ed.]

LILIUM AURATUM.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

Several bulbs of this gigantic lily were left out last winter, covered with six inches of leaves. They are now (July 31st) in bloom, showing more vigor than those wintered in pots protected from frost. Thus it appears that this species is several weeks earlier than *L. lancifolium*. A flower open this morning measures about ten inches in diameter. The bloom lasts a week without withering, though the spots, after the first day or two, turn from purple to brown. In one case, four flowers appeared

on one stem; in most instances two. I have had eleven flowers in all.

FRUIT PROSPECTS IN VIRGINIA.

BY OLIVER TAYLOR, LOUDON, VA.

We have had it very wet here since the middle of June; before that time the most complete drought I ever knew, for six or eight weeks in the spring. Now it rains nearly every day, and mill-dams are washed out by the rise of water. There are no peaches worth naming here, and but few apples; some old-fashioned peach trees have some on, but very few of the superior varieties; yet there was no frost to injure them in the spring. Want of proper cultivation is evidently the cause. Grapes have rotted considerable so far; most of my Rogers are a failure except No. 34, and that variety fails on the old vines; I attribute it to my not having thinned them last year; and the army worm cut-off the leaves so that the vines overbore themselves, and they set but few this year, and they rot badly. I will try and send thee a full description this fall of all the varieties I have in bearing, in a condensed form.

[We shall be very glad to have it.—Ed.]

NOTE ON THE LAND TORTOISE.

BY E. C. M.

I was glad to see your pleasant notice of the toad, a good, though humble friend to gardeners, who does his work well, particularly before and after the sun makes it unpleasant for him to be abroad, as he usually avoids dry heat.

But my special favorite and fellow laborer in the *pest line*, is the useful and little known land Tortoise; his labors are not appreciated, because he keeps out of sight, but he works not the less diligently for that. Since I established a colony of about half a dozen of them in my garden, I have seldom seen a snail or a sly thief.

One word more. If your cellar or your milk house be infested by those disgusting creatures, slugs, or snails, set a couple of Land Tortoises to work, and they soon will disappear.

The pretty foreigners, with striped shells, are multiplying fast in this neighborhood. They were imported from England about 35 years ago, in the earth with the roots of plants, and by very mistaken kindness, allowed to live and multiply.

Epicureans say that, as a *bon bouche* they are quite as good as terrapins. But this is a treasonable whisper.

The Gardener's Monthly.

PHILADELPHIA, OCTOBER, 1863.

✉ All Communications for the Editor should be addressed, "THOMAS MEEHAN, Germantown, Philadelphia," and Business Letters directed to "W. G. P. BRINCKLOE, Box 406 Philadelphia."

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VINERIES.

Few branches of gardening have grown so rapidly popular as grape-houses. They are not confined to "men of means." They have in some sort become a necessity to the multitude. They abound around our large cities; and if we travel into the wilderness we find them there also. Vineries are everywhere.

All this has been brought about within the few past years through the efforts of a few,—a very few men who, by precept and by example, have taught the people how houses may be cheaply built; and that to have good grapes it is not necessary to have expensive borders or expensive treatment afterwards.

Of course houses can be, and often are too cheaply built; and the vines can be and are too often much neglected. That is the luck of all good ideas. The very men who have done most for cheap houses, have themselves in the enthusiasm inspired by the advocacy of a sound doctrine, built their houses too cheaply, and so far inflicted an injury on their own cause. But this is no reason for the opposite extreme; and the majority of grape-houses built by the wealthy, are much more expensively built than they need be.

In itself it does not much matter, perhaps. One who has too much of the good things of this life, may spend his money as best pleases him; but the influence of such examples have to be counteracted. Neighbors must be taught that such expenditures are not necessary to good grapes; and poor gardeners, who are doomed to have the management of very pretty houses, with poor adaptations to the real purposes of grape growing, must be protected from the charge that they do not know how to grow grapes.

We saw, recently a very pretty and expensive house,—cost perhaps \$1000. We believe it was in its third year. The Black Hamburgs were nearly ripe, and about as large as *peas*, and the whole

crop not worth *five dollars*. This was not an encouraging experiment for increasing grape-growing luxuries in that region. In another place, near West Chester, Pa., (Messrs. Hoopes & Bros. nursery), we saw the most luscious and rich looking grapes we have seen this year in an old rickety house, made for another purpose, and in which the vines were simply "stuck" for the purpose of giving shade to the plants beneath. The soil outside, where the roots were growing, was very good, on a high dry bank; but so far as pruning, thinning, airing, etc., was concerned, they (the vines) had pretty much their own way. By the size of the stems, the plants had been evidently some years in bearing, and they promised to last very many more.

We propose to point out a few errors often made in vineries, and their management.

Curvilinear houses are pretty, but they are the worst forms for growing grapes, and are much more expensive than straight line houses. A grape vine, in common with all other climbing vines, never flowers well until it reaches the top of the object to which it clings or to which it is trained. When it reaches the top of the tree, wall, or whatever the support may be, it sends out its flowering branches strongly and freely. So those who have sharp pitched houses know the difficulty of making the grape fruit equally all down the cane; while most attempts to fruit the vine on the upright side, or back walls of vineries fail altogether. But he who has a flat roofed house,—although he may have a complaint to make of "leakage" and "drip," at times,—always has grapes and plenty of them, and is not much troubled about stopping off the strong top shoots that rob the lower weak ones; and for the best of reasons, namely, his flat roof makes all his shoots comparatively "strong" ones. Only very good gardeners succeed with grapes in curve-lined houses, and these only by very hard labor,—"very much suffering," as an unfortunate German, we recently caught dreadfully sweating high up in the "attic" of one of them, expressed it.

To grow grapes easily and cheaply we would have a span-roofed house to run North and South, not very high, as wide, and as flat as we could get it in all reason. We would of course have the roof "fixed," that is no sash—ventilators being fixed in the apex of the roof. The space to be occupied as ventilators we should not care much about. When a house is newly planted, and there is no foliage to keep the air moist inside the house, every one is apt to feel the "great want of ventilation." When they cover the whole under surface with a thick screen of foliage, this want is not felt. Instead of

going to great expense therefore in providing "ventilation," we should rather shade the glass for a few seasons with sugar of lead, whitewash, Rye flour, or any other substance in such cases receipted for.

And now we come to that great tail of controversy—the border. We would not go to the expense of an inside border in any case. Experience shows that where vines are planted in a border entirely inside, they do no good. Where the border is made so that it is both an inside and an outside one, the roots all go outside. No bribe induces them to stay inside. They go out for the fresh air, and the rains, and the dews of heaven; the gases, and the thousand of other little notions which make life in the open air so romantic and agreeable, even to a grape vine. The inside divided border of Bright failed; not because it was a divided border, but because it was inside. There is no doubt of it. Pot trees may and do succeed. The continual waterings they must have, brings daily instalments fresh to them; but in a large deep border, watered but a few times a year, the soil sours and stinks, and the grape-vine fibres rot, and disease and disappointment is the end thereof.

And, as to great, deep, wide borders, with the thousand or more contrivances for aerating, gassifying, concreting, warming, cooling, irrigating, draining, carcassing, oiling, carbonating, tartarizing, mulching, and we wot not what, let them all alone. See that no stagnant water will lie in the border;—that what goes in will pass away readily,—that it is filled with say two or three feet of good rotten turfy soil, with a large proportion of good river sand, and a fair proportion of rotten hotbed dung, or any other *well-decayed* vegetable matter, and you have got hold of the alphabet of good grape culture. Never dig or fork your border, but throw over it annually a little river sand and some well-decayed vegetable matter; and you may consider yourself in a fair way to have a long life full of fair sized, healthy, and delicious grapes.

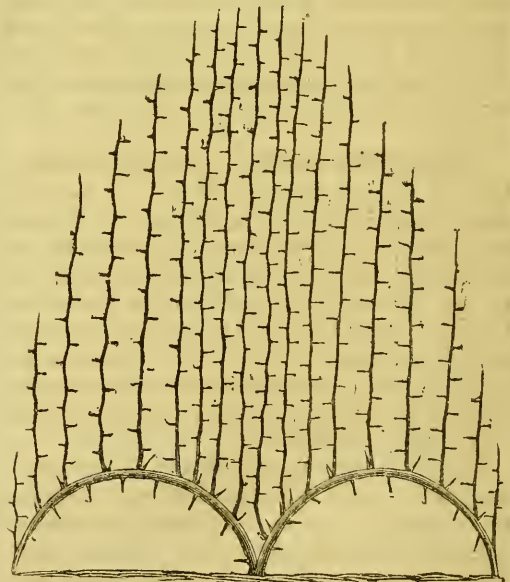
There is, of course, some learning to be mastered before one can be a perfect hand at grape growing. We cannot make a gardener by writing articles in the *Gardener's Monthly*. But, with good principles to begin upon, and attentive observation, one may learn more in a year or two, how to succeed, than some do in a lifetime without them.

MAKING HEDGE FENCES.

In a recent number of the *Country Gentleman*, a Kentucky correspondent gives a plan for managing Osage Orange hedges, that is worthy of prominent notice.

Every one knows that the chief difficulty is to get hedges rapidly thick below. The great art in their management consists in this; and almost everything in the planting and subsequent treatment has a reference to this object. They are usually planted in a double row, so that their stems may be as if they were six inches apart, and yet get more room to grow than if they were set actually six inches. In planting also, the sets are often placed slanting, so that as the buds break and grow erect, there may be many of them occupying all the upright space.

This writer accomplishes his object by bending down the tops and fixing them in the ground by the soil. In order to a better appreciation of this method, we have made a drawing of the idea as we understand it:



It represents how, we suppose, a cross section of the hedge would appear the year after bending down and trimmed into shape at the fall of the leaf. The following is the writer's own description of his plan:

"I began by plowing my field on the borders, six feet wide, and then pulverizing the ground as fine as it could be made with the harrow. In the middle of the six feet I set my plants. The ground

should be of uniform fertility, otherwise the plants will grow irregularly—some vigorously some poorly. If there is a difference in the soil, that which is poor must be enriched. The plants of the hedge row must be selected all of the same size, as near as possible. I set my plants 12 inches apart in the row—this is about the right distance. The plants should be grown from the seed in a nursery, and transplanted at a year old. It is immaterial whether you cut off the top of the plant now; some persons advise to cut it off the top of the plant now; some persons advise to cut it off about 3 inches above the ground when you plant them, and some advise double rows in alternate lines. This is useless, as the sequel of this paper will show. The plan herewith proposed will make the hedge barrier greatly more defensive. The whole of the 6 feet of ground thus prepared and planted must be kept free from weeds all the time, which can be easily done by the cultivator being often used, and occasional hoeing between the plants. The plants will grow from 2 to 4 feet high the first year, according to the soil.

In the spring following the first year's planting, plow the same 6 feet, and put in good order for the growth of the second year; pulverize and make fine the soil on each side of the hedge, throwing the soil slopingly up to the hedge; then with a spade throw out the soil from the hedge row to the outside border of the pulverized strip on each side of the hedge, about 2 feet from the hedge, with a slope from the hedge to the outer part of the strip, making it so that the soil will be 6 inches higher at the hedge plants than 2 feet from them, giving a regular slope from the plant outward; then cut off the plants to 2 feet; bend them down on the slope prepared for them, and cover the ends for a foot with the soil thrown back on them. All the buds on the upper surface of the plant thus bent over will throw up a stem, and the ends thus covered will take root. The bending down of the plants can be easily effected by taking a rail 8 or 9 feet long, bending down the plants and laying the rail on them till you cover them with earth; then take up the rail and continue the same process throughout. Tread down the soil, so as to hold the plants in their places, before removing the rail. Thus you will have a hedge with a commencing base of 3 or 4 feet. The second year you may form the hedge to your wish, and this is the most important part about it. Without a good base or bottom the hedge will be altogether worthless, and this must be effected during the first and second year's growth of the plant. This is paramount to all other direc-

tions, and only to be obtained by heading down the plant during the early periods of its growth. The plants should be cut so as to keep an even conical or pyramidal shape all over from sides to top. When fully grown trim twice a year. This is the whole philosophy of making a hedge of the Osage Orange that will give pleasure and satisfaction to the owner.

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.

APPEARANCE OF RUSHES ALONG A FOOT-PATH—*Curioso*, Philadelphia, asks:

"Along a foot-path, through one of my fields, there is an immense quantity of a small species of rush growing. Nowhere else can I find a patch. It has appeared entirely since the foot-path has been made by men taking the "short cut!" How is this to be accounted for? A neighboring farmer insists that this plant, like many others, he believes comes spontaneous,—that is, produced, I suppose, by some chemical or creative act, without seed. Of course this is nonsense,—but I should like to have your explanation of the phenomena. When soil has been newly turned up, I can understand how seeds long buried may be induced to germinate by exposure to the air. But in this case the ground has not been disturbed,—on the contrary, trod harder,—so much so as actually to make all other vegetation disappear entirely."

[We have never known this question raised, and have therefore to give but a theoretical explanation.

The Rush,—we suppose the different species of *Juncus* are referred to,—requires a large supply of what chemists call silica to enter into its formation. This can only be taken up by the plant in a soluble state, and the wetter or more marshy ground is rendered, the more of this acid (hydro-silicate) is generated. Without this in abundance, the rush cannot grow. Running over soil, often in one place, especially when wet, is just the thing to sour it, as gardeners would say; or, in the language of chemistry, generate Hydrated silicic acid, and the rush of course finds exactly the conditions suited to its existence. Of course the seeds are in the soil awaiting such chances. "Spontaneous generation" theories are not necessary to explain this fact. Seeds of almost every thing will remain in the

ground for ages, if the conditions of germination do not exactly "come along."

WEARING OUT OF VARIETIES OF FRUIT.—A "New Subscriber," Philadelphia, asks us for "our views" on this debated point. Do we "believe, with Mr. T. A. Knight, that fruits degenerate in time,"—or rather, that they may endure for generations. Our correspondent does not wait for our reply, but gives his own opinion that the "degeneracy of fruits is a nonsensical idea; as many fruits, currants for instance, have been in existence from cuttings for many hundreds of years, and yet show no more signs of degeneracy than many of the newer things."

Our reply is, that it is one of those questions on which we have as yet formed no decided opinion. We are waiting for more facts. Our correspondent's argument proves nothing. One man may live but thirty years, while another may live full three-score and ten. One individual currant, in like manner, may endure by cuttings for a thousand years; another, with a weaker constitution, has fulfilled its "allotted time" in half that period. The Autumn Bergamott Pear, which is as old as Julius Cæsar, and yet healthy, may still have but a set course to run, although the White Doyenne, not half as old, seems rapidly passing away.

There may be truth in the limitation theory. Experience teaches us that every thing, even the rocks have an infancy, an old age, and decay,—why should not even varieties or species have their time also?

STONES FOR CARRIAGE-ROADS.—P.—"What is the best size for stone to be broken for the surface of carriage-roads. I supposed that pieces about the size of walnuts was the best, as if broken smaller it will soon crush, and the size I have will be small enough in time; but it is so rough driving over it, I would like to know whether any covering can be put on without materially spoiling the stone. I have been to some expense to get a dry hard road, and would not like to have it spoiled now."

[You should have had the stones broken near where you want to use them, and then have them screened,—using three sizes. The first or coarsest putting at the bottom; the smallest size at the top. The stones do not crush as fast when the upper surface is filled with small stone; as when the wheels pass over the larger ones. It is the displacement which crushes stone, as much as the actual weight of the wheel. The small stones keep the large ones

in place, and a road lasts much longer than without this thin covering.

GRAPERIES.—A correspondent from Muscatine, Iowa, writes:

"I should like much to be "posted" by some of you who have had the benefit of personal experience on some points relating to the culture of the Foreign grape in cold houses, but fear my interrogations would be troublesome."

[We have numerous correspondents who think it a pleasure to communicate their views and experience on any subject within their knowledge, and only wait to be "troubled," as our correspondent hath it, with a request, in order to be sure their communications are valued. We are also only "too happy" to have such communications.

RULE FOR GROUPING TREES.—A correspondent calls our attention to the following "curiosity," attributed to the pen of J. J. Thomas:

"In the absence of any other guide, the novice may copy in his groupings, the irregular and scattered drops of rain on a flagstone, or the position of the stars in the sky."

Friend Thomas, no doubt, wrote without momentary reflection, as any one may do at times.

Some groups of "rain drops," or of stars, are very pretty, and others very ugly; and, "in the absence of any guide," stars or rain drops to choose from, he might as well copy from "groups of wild-woods" themselves; from groups of mouldings or figures on his village church doors, or from the prints on a fancy dressing gown.

Yet there is a good idea for all under Mr. Thomas' advice. One is more likely to produce a good effect in planting, by studying rain drops or stars, than he would be by using the line and square, in setting out his trees. Some such idea was, no doubt, intended to be conveyed.

GAS LIME.—S. B. M., Massillon, O.—Is there any value in lime from Gas works? My soil is clay loam. I have one mile to haul it, and the price is \$4 per 100 bushels at the works. Please state the best application on such soils.

[Gas lime, when it can be had pure, is of essential service to clay soils; but in most cases it contains Creosote, and many soils have become seriously injured by its use. It is so seldom free from this substance, and this again varies so much in proportion that no rule can be given for its use.

We can give no advice to our correspondent about its use that would be worth any thing to him, but

to say, unless pretty well assured of its purity, we should let it alone.]

CROPS IN INDIANA.—The following, from a correspondent at Richmond, Indiana, is a sample of many notes we have from the West:

"Crops of all kinds have suffered severely in this region, this season from a protracted drouth. Fruit is almost a failure. On the nights of the 30th and 31st of August, the frost destroyed a large portion of what the dry weather had left. Whole plantations of tobacco, sorghum, sweet potatoes, melons, etc., being entirely killed."

GENERAL McCLELLAN STRAWBERRY.—Mr. W. R. Prince writes, that this strawberry proves with him to be only Longworth's Prolific. In reference to the really little advance made in producing good strawberries, he says:

"Surely it is quite time we made some advance towards perfecting our lists, by adopting the large, beautiful, and highly perfumed Pine varieties, which Belgium and other countries present, as well as the new Pine varieties, recently produced in our own country."

WORKS ON FRUIT.—*J. C. B., Cleveland, O.*—Downing's "Fruits and Fruit Trees of America," is received as the authority on the nomenclature of fruits; and "Barry's Fruit Garden," as the authority on all matters of practice in fruit culture.

GRAVEL ROOFING.—*R. H. E., Baltimore, Md.*—Can any one of your readers furnish me any receipt for the composition of cement or gravel roofing, for which I will be greatly obliged.

RUSSELL'S PROLIFIC STRAWBERRY.—Mr. W. R. Prince writes:

"It has been several times exhibited at the American Institute rooms, without an encomium, the members being familiar with the superior varieties."

And he believes Mr. Todd, through being unacquainted with better varieties, has overrated the merits of this one.

CHEMICAL STATISTICS OF ORGANISED BEINGS.—A correspondent from Mitteneaque, Mass., suggests a republication of an article on this subject from *Loudon's Gardener's Magazine*, for 1845.

The whole article is too long for our space, but agreeing with him as to its value, we cheerfully reprint the last half, which is the part most interest-

ing to gardeners. We shall conclude the chapter in two more numbers:

"III. Let a seed be thrown into the earth, and be left to germinate and develop itself; let the new plant be watched until it has borne flowers and seeds in its turn, and we shall see, by suitable analyses, that the primitive seed, in producing the new being, has fixed carbon, hydrogen, oxygen, azote, and ashes.

Carbon.—The carbon originates essentially in carbonic acid, whether it be borrowed from the carbonic acid of the air, or proceed from that other portion of carbonic acid which the spontaneous decomposition of manures continually gives out in contact with the roots.

But it is from the air especially that plants most frequently derive their carbon. How could it be otherwise, when we see the enormous quantity of carbon which aged trees, for example, have appropriated to themselves, and yet the very limited space within which the roots can extend? Certainly, when a hundred years ago the acorn germinated, which has produced the oak that we now admire, the soil on which it fell did not contain the millionth part of the carbon that the oak itself now contains. It is the carbonic acid of the air which has supplied the rest, that is to say, nearly the whole.

But what can be clearer and more conclusive than the experiment of M. Boussingault, in which peas, sown in sand, watered with, distilled with, and having no aliment but air, have found in that air all the carbon necessary for development, flowering and fructification?

All plants fix carbon, all borrow it from carbonic acid; whether this be taken directly from the air by the leaves, whether the roots imbibe within the ground the rain water impregnated with carbonic acid, or whether the manures, whilst decomposing in the soil, supply carbonic acid, which the roots also take possession of to transmit it to the leaves.

All these results may be proved without difficulty. M. Boussingault observed that vine leaves which were enclosed in a globe, took all the carbonic acid from the air directed across the vessel, however rapid the current. M. Boucherie also observed enormous quantities of carbonic acid escape from the divided trunk of trees in full sap, evidently drawn by the roots from the soil.

But if the roots imbibe this carbonic acid within the earth, if this passes into the stalk and thence into the leaves, it ends by being exhaled into the atmosphere, without alteration, when no force intervenes.

Such is the case with plants vegetating in the shade or at night. The carbonic acid of the earth filters through their tissues, and diffuses itself in the air. We say that plants produce carbonic acid during the night; we should say, in such a case, that plants transmit the carbonic acid borrowed from the soil.

But let this carbonic acid, proceeding from the soil or taken from the atmosphere, come into contact with the leaves or the green parts, and let the solar light moreover intervene, then the scene all at once changes.

The carbonic acid disappears; bubbles of free oxygen arise on all the parts of the leaf, and the carbon fixes itself in the tissues of the plant.

It is a circumstance well worthy of interest, that these green parts of plants, the only ones which up to this time manifest this admirable phenomenon of the decomposition of carbonic acid, are also endowed with another property not less peculiar or less mysterious.

In fact, if their image were to be transferred into the apparatus of M. Daguerre, these green parts are not found to be reproduced there; as if all the chemical rays, essential to the Daguerrian phenomena, had disappeared in the leaf, absorbed and retained by it.

The chemical rays of light disappear, therefore, entirely in the green parts of plants; an extraordinary absorption doubtless, but which explains without difficulty the enormous expense of chemical force necessary for the decomposition of a body so stable as carbonic acid.

What, moreover, is the function of this fixed carbon in the plant? for what is it destined? For the greater part, without doubt, it combines with water or with its elements, thus giving birth to matters of the highest importance for the vegetable.

If twelve molecules of carbonic acid are decomposed and abandoned their oxygen, the result will be twelve molecules of water, may constitute either the cellular tissue of plants, or their ligneous tissue, or the starch and the dextrine which are produced from them.

Thus, in any plant whatever, nearly the entire mass of the structure (charpente), formed as it is of cellular tissue, of ligneous tissue, of starch, or of gummy matters, will be represented by twelve molecules of carbon united to ten molecules of water.

The ligneous part which is insoluble in water, the starch which gelatinises (*l'amidon, qui fait empois*) in boiling water, and the dextrine which dissolves so easily in water cold or hot, constitute

therefore, as M. Payen has so well proved, three bodies possessing exactly the same composition, but diversified by a different molecular arrangement.

Thus, with the same elements, in the same proportions, vegetable nature produces the insoluble walls of the cells of cellular tissue and of the vessels, or the starch which she accumulates as nourishment around buds and embryos, or the soluble dextrine which the sap can convey from one place to another for the wants of the plant.

How admirable is this fecundity, which out of the same body can make three different ones, and which allows of their being changed one into the other, with the slightest expense of force, every time occasion requires it!

It is also by means of carbon united with water, that the saccharine matters so frequently deposited in the organs of plants for peculiar purposes, which we shall shortly mention, are produced. Twelve molecules of carbon and eleven molecules of water form the cane sugar. Twelve molecules of carbon and fifteen molecules of water make the sugar of the grape.

These ligneous, amylaceous, gummy, and saccharine matters, which carbon, taken in its nascent state, can produce by uniting with water, play so large a part in the life of plants, that, when they are taken into consideration, it is no longer difficult to understand the important part that the decomposition of carbonic acid performs in plants.

Hydrogen.—In the same manner that plants decompose carbonic acid for the appropriation of its carbon, and in order to form together with it all the neutral bodies which compose nearly their entire mass; in the same way, and for certain products which they form in less abundance, plants decompose water and fix its hydrogen. This appears clearly from M. Boussingault's experiments on the vegetation of peas in closed vessels. It is still more evident from the production of fat or volatile oils so frequent in certain parts of plants, and always so rich in hydrogen. This can only come from water, for the plant receives no other hydrogenated product than the water itself.

These hydrogenated bodies, to which the fixation of the hydrogen borrowed from the water gives birth, are employed by plants for accessory uses. They form, indeed, the volatile oils which serve for defence against the ravages of insects; fat oils or fats, which surround the seed, and which serve to develop heat by oxidation (*en se brulent*) at the moment of germination; waxes with which leaves and fruits are covered so as to become impermeable to water.

But all these uses constitute some accidents only in the life of plants; thus the hydrogenated products are much less necessary, much less common, in the vegetable kingdom, than the neutral products formed of carbon and water.

Azote.—During its life, every plant fixes azote, whether it borrows the azote from the atmosphere, or takes it from the manure. In either case it is probable that the azote enters the plant, and acts its part there only under the form of ammonia or of nitric acid.

M. Boussingault's experiments have proved that certain plants, such as Jerusalem artichokes, borrow a great quantity of azote from the air; that others, such as wheat, are, on the contrary, obliged to derive all theirs from manure: a valuable distinction for agriculture; for it is evident that all cultivation should begin by producing vegetables which assimilate azote from air, to rear by their aid the cattle which will furnish manure, and employ this latter for the cultivation of certain plants which can take azote from the manures only.

One of the most interesting problems of agriculture consists, then, in the art of procuring azote at a cheap rate. As for carbon, no trouble need be taken about it; nature has provided for it; the air and rain water suffice for it; but the azote of the air, that which the water dissolves and brings with it, the ammoniacal salts which rain water itself contains, are not always sufficient. With regard to most plants the cultivation of which is important, their roots should also be surrounded with azotated manure, a permanent source of ammonia or of nitric acid, which the plant appropriates as they are produced. This, as we know, is one of the great expenses of agriculture, one of its great obstacles, for it possesses only the manure which is of its own production. But chemistry is so far advanced in this respect, that the problem of the production of a purely chemical azotated manure cannot be long in being resolved.

M. Schattenman, the skillful director of the manufactories of Bouxvilliers in Alsace, M. Boussingault, and M. Liebig have turned their attention to the functions of ammonia in azotated manures.—Recent trials show that the nitric acid of the nitrates also merit particular attention.

But for what purpose is this azote, of which plants seem to have such an imperious want? M. Payen's researches partly teach us; for they have proved that all the organs of the plant, without exception, begin by being formed of an azotated matter analogous to fibrine, with which at a later period are associated the cellular tissue, the ligneous tis-

sue, and the amylaceous tissue itself. This azotated matter, the real origin of all the parts of the plant, is never destroyed; it is always to be found, however abundant may be the non-azotated matter which has been interposed between its particles.

This azote, fixed by the plants, serves, therefore, to produce a concrete fibrinous substance, which constitutes the rudiment of all the organs of the vegetable.

It also serves to produce the liquid albumen which the coagulable juices of all plants contain; and the caseum, so often confounded with albumen, but so easy to recognise in many plants.

Fibrin, albumen, and caseum exist, then, in plants. These three products, identical in their composition, as M. Vogel has long since proved, offer a singular analogy with the ligneous matters, the amidon, and the dextrine.

Indeed, fibrin is, like the ligneous matter, insoluble; albumen, like starch, coagulates by heat; caseum, like dextrine, is soluble.

These azotated matters, moreover are neutral, as well as the three parallel non-azotated matters; and we shall see that by their abundance in the animal kingdom they act the same part that these latter exhibited to us in the vegetable kingdom.

Besides, in like manner as it suffices for the formation of non-azotated neutral matters, to unite carbon with water, or with its elements, so, also, for the formation of these azotated neutral matters, it suffices to unite carbon and ammonium with the elements of water; forty-eight molecules of carbon, six of ammonium, and seventeen of water, constitute, or may constitute, fibrin, albumen, and caseum.

Thus, in both cases, reduced bodies, carbon or ammonium, and water, suffice for the formation of the matters which we are considering, and their production enters quite naturally into the circle of reactions, which vegetable nature seems especially adapted to produce.

The function of azote in plants is therefore worthy of the most serious attention, since it is this which serves to form the fibrin which is found as the rudiment in all the organs; since it is this which serves for the production of the albumen and caseum, so largely diffused in so many plants, and which animals assimilate or modify according to the exigencies of their own nature.

It is in plants, then, that the true laboratory of organic chemistry resides. Thus, carbon, hydrogen, ammonium, and water are the principles which plants elaborate: ligneous matter, starch, gums, and sugars on the one part,—fibrin, albumen, ca-

seum on the other, are, then, the fundamental products of the two kingdoms; products formed in plants, and in plants alone, and transferred by digestion into animals.

[To be continued.]

NEW SEEDLING PEACHES—*O. T. H., Randolph, Pa.*—"I send you specimens of new Peaches from American Garden of Experiments, and hope they will reach you in good order.

From among 400 seedlings, I had two varieties which ripened on the 26th of July, which are included in those sent you, and which are about five days in advance of our earliest good peaches: Early York (Serrate), Fay's Early Anne, etc. The tree bearing the creamy white is truly a splendid sight, bending under its weight of fruit, which at a little distance looks almost transparent. The tree is of slow growth, and full bearing habit.

I regret that I cannot send you buds from 15 or 20 varieties of great excellence, having parted with my interest in all the seedling peaches of this plot and age. New grapes are ripening."

[The fruit was small, but of excellent quality.]

Books, Catalogues, &c.

FLOWERS FOR THE PARLOR AND GARDEN. By Edward Sprague Rand, jr. Published by J. E. Tilton & Co., Boston.

There are many persons throughout the Union just awakening to the pleasures of gardening, but who have no knowledge at all of the art. They have a few window flowers, a small garden yard, and perhaps a small greenhouse, conservatory, or but a Wardian case. A work like this of Mr. Rand's is almost essential to this class of horticulturists.

Of the treatment of the subject by the author, we may say that he has succeeded in the object of his work. The chapters treat of the management of Small Greenhouses, Window-Gardening, Balcony-Gardening, Wardian and Waltonian Cases, Aquariums and Water Plants,—besides special articles on the Culture of Bulbs, Tuberoses, Gladiolus, Specimen Plants, Hotbeds, Trees, Shrubs, Herbaceous Plants, Annuals, and many other things,—all discussed in a plain practical manner, easily understood by those to whom the work is addressed.

The publisher also has done full justice to the work. The illustrations are well executed and beautiful, and the whole "getting up" of the book admirable.

There are learners in every family, even of that of the most intelligent horticulturist; so that the book will be a beautiful and welcome addition to the garden library of every parlor.

New and Rare Fruits.

HOWELL GRAPE.—We recently received a bunch of this variety from Mr. Edward Tatnall, of the Wawaset Nursery, near Wilmington, Delaware.

We think very highly of it on account of its earliness and comparative good quality. It came to hand on the fourth of September, perfectly ripe, and of a dark jet black color. The berries are small, not much larger than a good sized Delaware, and the bunch is not much above medium. It is not near as good quality as Delaware or other grapes of a later season; but superior to Concord, Hartford Prolific, or others of its time.

Its faults are a thickish skin and too firm a pulp; but it is on the whole a much better grape than many that have been "let out" with a loud explosion.

DESERET CURRANTS.—The *Utah Farmer's Oracle*, says:

"At Santaquin, Abel Butterfield, Esq., has a garden very creditable, proving not only that the owner knows something of horticulture, but that he attends to his garden. We have specimens of some very fine "Deseret Currants" from his garden—a limb a foot long, weighing near half-a-pound, and containing 100 currants, averaging an inch and-a-half in circumference.

Speaking of these currants, reminds us that on the 4th inst. we visited the garden of Esquire Tenney, of Payson, and picked out, to our satisfaction, currants, ripe and delicious, many of which measured two inches in circumference—the largest we have seen this season, and the bushes the most prolific bearers.

Bro. Thos. Day, of Spanish Fork, has favored us with a case of "Deseret Currants," grown in his garden this season, and though not the largest, are as early and fine-flavored as any we have seen; they are of orange and light reddish purple color. Also several gooseberries three inches and over in circumference, and the best flavored we ever tried. This speaks well for our friends at Spanish Fork.

We do think this fruit entitled to more attention, and believe it may be improved to an inch in diameter, easily. Let us hear from the currant patches.

RUSSELL'S PROLIFIC STRAWBERRY.—A correspondent, under the cognomen of "Fair Play," writes us from Auburn, that the statement made by several persons that "Russell's Prolific Strawberry" sells for twice as much as Triomphe de Gand, in that city, is incorrect. We always had some doubts of the reliability of that statement, for we could see no reason why it should be so. The fruit is not larger, and we doubt if it is superior in quality. The fact that it is thought to be much more productive should not make the fruit higher priced. It is a rule which we cannot violate, to insist on the names of all correspondents who give us statements of facts. The names of correspondents may not be published, but we desire them as an evidence of good faith, and for future reference.—*R. N-Yorker.*

NEW PEARS.—222. BEURRE SIX. *Album de Pomologie*, Vol. III., p. 53.—The Beurré Six is a large and fine pear, which fruited for the first time in our collection last year.

In the Album above quoted, it is described as an "exquisite fruit," commencing to ripen in November, and keeping until the end of December; this corresponds with our own experience, showing it to be an early winter variety, maturing at a time when there is yet but a limited number of excellent pears.

This variety originated in Belgium, in the environs of Courtray, and was named after the cultivator, who raised it from seed. It was sent to M. Bivort by M. Reinaert Beenaert, a distinguished pomologist of Courtray, and pronounced a superb fruit.

Our trees are yet too young to decide upon its general characteristics. M. Bivort pronounces the tree vigorous and productive, forming naturally a fine pyramid. His trees were upon the pear stock, and he could not state whether it would it would succeed on the quince. Our own trees are upon the pear stock, and we are inclined to think it will not succeed well on the quince, though we have not tried it upon that stock.

Size, large, about four inches long, and three inches in diameter: Form, pyramidal, largest about the middle, rounding off at the crown, and tapering to the stem; Skin, slightly rough, deep green, becoming yellowish when mature, with some slight traces of russet; Stem, long, about one and a quarter inches in length, rather slender, thick at the base, and attached without any cavity; Eye rather large, open and moderately sunk in a small, rather contracted basin; segments of the calyx broad, round, stiff, projecting; Flesh, greenish white, fine, melting and juicy, sweet and good; Core, medium

size; Seeds, medium size, sharply pointed, brown. Ripe in November and December.

226. BEURRE BURNICQ. *Album de Pomologie*, Vol. III., pl. 3.—The Beurré Burnicq is another of the many seedlings raised by the late Major Esperen, who seems to have been very fortunate in the production of good pears, as a reference to the long list described in our Magazine will show.

This pear first fruited with Major Esperen in 1846, and was named in honor of M. Burnicq, curé of Lannes. It first fruited in our collection two or three years ago, but we thought it then only a fair pear. Last year the crop was large, and many of the specimens very fine, and it proved to be a delicious fruit, keeping for a long time, and in eating nearly all October and November. It is of good size, not large, but it has the beautiful cinnamon russet skin, so characteristic of many of our best pears. In this respect it approaches, both in color and form, the d'Albret.

The tree is a very vigorous grower, spreading and irregular in its habit, and produces abundantly. It is a very fine acquisition.

Size, medium, about three and a quarter inches long, and two and three-quarters in diameter; Form pyramidal, broad at the crown, contracted near the middle, and tapering to the stem, uneven in its outline and surface; Skin rough, dull green, nearly or quite covered with dull cinnamon russet, showing in patches the green ground; Stem, long, about one and a half inches in length, moderately stout, and obliquely attached by a fleshy junction, which appears a continuation of the fruit; Eye, small, open, and but slightly depressed, in a small, shallow basin; segments of the calyx, narrow, short; Flesh, yellowish white, little coarse melting, juicy, vinous, rich and pleasantly perfumed; Core, rather large; Seeds medium size, dark. Ripe in November.

227. HOMEWOOD.—Some three or four years ago, W. C. Wilson, Esq., of Baltimore, an amateur pomologist, presented us with specimens of a new pear, which originated in that city, and, if we recollect aright, upon, or near his grounds. He had in his collection all the best pears, but he thought the Homewood quite equal, if not superior to any that he had fruited, and he kindly offered to supply us with scions. Availing ourselves of his liberality, we grafted one or two old trees with it, and these came into bearing last year, producing several excellent specimens, which ripened up well, and justified the encomiums bestowed upon it by Mr. Wilson.

In general quality it is similar to the *Passé Colmar*, being very sugary, and high flavored. The tree appears to be of vigorous growth, rather straggling in its habit, and bears abundantly; the specimens smooth, and ripening up finely. It ripens at a good season, and keeps well.

Size, large, about three inches broad, and three deep; Form obovate, largest about the middle, rounding off to the eye, and narrowing little to the stem; Skin fair, slightly rough, dull yellow at maturity, more or less traced and obscured with russet, bronzed with red on the sunny side, and somewhat mottled with green and black spots; Stem, medium length, about three quarters of an inch long, rather slender, slightly curved, and obliquely inserted, with scarcely any cavity; Eye small, closed, and rather deeply sunk, in a small furrowed basin; segments of the calyx small; Flesh, yellowish white, little coarse, half melting, with a saccharine, slightly vinous, and aromatic juice; Core, rather large; Seeds large, rounded, plump, light brown. Ripe in November.—*Hovey's Mag.*

New or Rare Plants.

NEW FERNS.—Concluded from last month:

Lastrea opaca (Hooker).—This Fern produces tufts of firm opaque fronds, of a dark green color; the outline is almost pentangular from the development of the basal posterior pinnules, and the pinnæ and fronds are very gracefully acuminate; the fronds are bipinnately divided, the pinnules being narrow-oblong and more or less falcate and deeply lobed; the segments ovate, those on the hinder side of the lowest pinnæ being very much larger than those on the anterior side. The young immature fronds or more or less olive tinted. From Yokohama, Japan.

Lomaria crenulata (Moore).—A neat looking and hardy evergreen Fern, introduced from Chili, and a desirable plant for the out-door Fernery. The plant forms a close tuft about 6 inches high; the sterile fronds narrow lanceolate, almost pinnate, with small oblong acute crenulate divisions; the fertile fronds rather taller on reddish stalks, linear and crenulate. It is distinct in appearance from the many other fine hardy *Lomaria* already in cultivation.

Microlepia strigosa, (Presl).—This is a free-growing Fern of moderate size, from Nagasaki, in Japan. It has bright green hairy fronds of about a couple of feet in height; ovate acuminate in form: bipinnate or tripinnate with roundish ob-

long or somewhat trapeziform pinnules, more or less lobed or toothed on the margin. It is of creeping habit. Its moderate size and lively color will render it a most desirable hardy greenhouse Fern.

Polystichium flexum, (Remy).—A coriaceous and hardy Fern, from Chili, which has stood the two last winters exposed, without suffering injury. The plant has a creeping rhizome, from which grow up to the height of about a couple of feet the firm looking triangular fronds, which are tripinnate, with oblong toothed segments, and are remarkable for their thick leathery texture. It forms a bold Fern for out-door rockeries.

Polystichium setosum, (Schott).—A hardy evergreen Fern from Yokohama, in Japan. It is a tufted growing species of moderate size, with firm ovate-acuminate bipinnate fronds of 2 to 3 feet or more in height, the pinnules of which are trapezio-oblong, acute, auricled, and sometimes slightly toothed, but most remarkable for bearing a fringe setæ or stiff hairs, which stand up for the plane of the frond, and give it a bristly appearance on the surface.

Woodsia polystichoides, var. *Veitchi*, (Hooker).—Found in Yeddo by Mr. John G. Veitch. The narrow almost linear fronds grow 6 or 8 inches or more in height, and are pinnately divided, the pinnæ being about an inch in length, linear oblong, and distinctly auricled with a row of sori near each margin, the whole surface above and beneath being covered with short close hairs.

Woodwardia orientalis, (Swartz).—One of the finest of all hardy Ferns, gathered in Japan, by Mr. John G. Veitch. It forms a thick crown, from which the rather large spreading triangular fronds proceed; these fronds are pinnate-pinnatifid, with lanceolate acute serrated segments 1 or 2 inches in length, the larger ones somewhat crenately-lobed, and the whole frond bearing on the upper surface more or less profusely little bulbiform plants opposite the sori, the fronds sometimes being completely covered with these young plants.

Asplenium consimile.—A well marked coriaceous fronded hardy Fern, introduced by Mr. Pearce from Chili. It is a dwarf, tufted species, with pinnated deep green fronds, which rise from a dense crown of brownish semi-transparent scales, which are remarkable for their thick enduring texture. The plant can be recommended as a very useful hardy Fern.

JUGLANS PYRIFORMIS.—The *Revue Horticole* describes this as a variety raised, as it is supposed, by hybridization between *J. nigra* and *J. regia*.

CRYPTOMERIA ELEGANS.—Another of the many fine Coniferæ introduced by Mr. J. Veitch from Japan. It forms a tree of rapid growth, with a very elegant and dense habit, and most beautifully glaucous foliage. This plant has been frequently exhibited at the principal metropolitan exhibitions, and has invariably obtained the highest awards:

LOMARIA GIBBA.—This, which is one of the most beautiful of the Lomarias, was introduced from New Caledonia by Sir Daniel Cooper, Bart. It has been exhibited at the late exhibitions, and has been awarded a First Prize, by the Royal Horticultural Society, and a First Class Certificate by the Royal Botanic Society. The plant forms a stout erect elevated caudex, which is said to grow 2 or 3 feet high, and from the centre of which the head of erect gracefully-arching fronds, about 2 feet in length, spread out equally on all sides. The fertile fronds grow up in the centre, and differ chiefly in the narrow soriferous pinnæ and sigments.

HIBISCUS COOPERI.—A beautiful plant, introduced from New South Wales, by Sir Daniel Cooper, Bart., after whom it is named. It forms a shrub of dense habit, producing large scarlet flowers and tri-colored foliage of great beauty. The leaves are of a bright green color, distinctly striped and flaked with crimson and white; and the various shades of color produced by the foliage, as it assumes different stages of growth, gives it a very pleasing and attractive appearance. Its free growth and beautiful foliage render it a plant that can be strongly recommended for decorative purposes generally.

DEUTZIA CRENATA FLORE-PLENO.—A fine double-flowering Deutzia, producing beautiful rose-tinted white flowers.

AGLÆONEMA COMMUTATUM, (Schott). An Aroid found in the interior of Luzon, Phillippine Islands. It forms an ornamental shrub, growing about 2 feet in height, and producing large oblong ovate acuminate leaves, of a dark glossy green, flaked with creamy white and light green. A desirable addition to our collections of variegated-foliaged plants.

MICONIA PULVERULENTA.—This fine bold habited stove shrub, was introduced from Peru by Mr. Pearce. It attains a height of from 3 to 4 feet, being furnished with elliptic rugose of dark green leaves 12 to 15 inches long, marked by a broad central silvery bar, the terete stem and the surface of

the leaves being heavy. The flowers are white, succeeded by bunches of red berries. Both in a young state and as a specimen, this plant has been proved to be a most desirable addition to the class of ornamental foliaged plants.

ILEX FORTUNEL.—A hardy evergreen Japanese shrub, with dark glossy green foliage. The Japanese use this largely as a hedge plant, for which purpose its free growth and close compact habit render it well adapted.

LILIUM NEILGHERIENSE.—This is a fine species of the longiflorum section, flowering most freely on stems from 12 to 15 inches in height. When first open it is of a warm cream color, changing as the flower progresses to a pure white. It is, as the name intimates, from the Neilgherry Hills, where it grows at a very great elevation. It requires the same treatment as the Japan Lilies.

CALCEOLARIA PLANTAGINEA.—Another of Mr. Pearce's South American introductions. It was found growing near the line of perpetual snow on the Andes of Chili, and can be confidently recommended a perfectly hardy herbaceous plant. It is of very dwarf compact habit, with large glossy green foliage, and produces spikes of large globular bright yellow flowers. Having passed the last three winters in the open ground without the slightest protection, no doubt can be entertained of its being perfectly hardy.

DENDROBIUM LOWII, (Mr. Low's Dendrobium).—*Nat. Ord.* Orchidaceæ. *Lin.*, Gynandria Monandria.—Native of Borneo, at an elevation of 3000 feet. Flowers bright yellow, with red lines on the lip and crimson fringes. Blooms in November.—*Botanical Magazine*, t 5303.

ANGURIA WARCEWICZII, (Warcewicz's Anguria).—*Nat. Ord.*, Cucurbitaceæ. *Lin.*, Dœcia Dian-dria.—Native of Panama. Stove climber. Flowers brilliant scarlet, blooming in December.—*Il.* t 5304.

PHYSURUS MACULATUS, (Spotted Physurus).—*Nat. Ord.*, Orchideæ. *Lin.*, Gynandria Monandria.—Native of Ecuador, South America. It bloomed in November, at Mr. Osborne's, Fulham Nursey. Sir W. Hooker thinks the white spots on the leaves "may not be constant."—*Il.* t 5305.

THIBAUDIA MACRANTHA.—This very remarkable and beautiful shrub was introduced from Moulmein

by Mr. Thomas Lobb. It requires warm greenhouse treatment, producing in abundance its large bluish-colored drooping flask-shaped flowers marked with transverse wavy V-shaped red lines. The texture and marking of this striking flower give it a strong resemblance to some handsome piece of china or porcelain. The leaves are of dark green color, lanceolate and entire.

Domestic Intelligence.

ORCHARD-HOUSE FRUIT CULTURE.—The cultivation of fruit trees in pots and tubs has engaged the attention of many, and that more particularly in the last six or seven years; and it now has been proved without a doubt that in Canada fine peaches, apricots, nectarines and pears may be grown by the above system without any great amount of practical or scientific skill.

As to the best kind of house for the purpose:—they may be of any size, according to the mind or will of the owner. I would recommend that the building stand north and south, and span roofed, thereby admitting light and air on all sides.

With regard to the kind of trees to be grown, I would recommend that where the houses appropriated for that purpose are large, a portion of the trees be grafted on their own roots, placing them in tubs and plunging up to the rim. The sort I mean to be so treated are peaches and nectarines, thereby making pretty large trees that will bear a considerable quantity of fruit. Of course they will not come into bearing so soon as those that are grafted upon the plum, of which three parts of the whole ought to be, they fruit early, grow dwarf and bushy, and will not take up a great deal of space. Nurserymen using the plum ought to be very careful in choosing none but the most healthy and vigorous. If not healthy they will not be found to do, so well, as the stock does not grow so fast as the head. I think it commendable for parties that grow largely that they ought to have some young stock on hand, thereby replacing any sickly or exhausted tree which ought not to be permitted to remain in the house at all.

I will now make a few remarks on the system of potting, soil, watering, ripening of the wood, etc. I do not think it necessary to have them in large pots. The best peaches I had last year were grown in 9 and 10-inch pots, and that of excellent size and flavor. They may be shifted into a large size if you want large plants. But the purpose I take to be not to have the trees larger than can be placed on

the dining-room table without inconvenience. The soil I use is a good turf loam, rather approaching to clay and sand, a few crushed bones, charcoal and a little well rotted heated manure. This I pack in and around the plant very firmly, with a dull pointed stick; and this I think a good plan. Previous to starting the trees in spring, I procure a box or large tub, taking some sheep dung, and old hotbed or cow dung, and mix all up together with soft rain water, I then immerse the pot or tub in this mixture, leaving them until thoroughly soaked through, then put them in the place to grow, and again mulching the pot with some well-rotted manure to keep the sun from penetrating too far—the tree being now leafless. This will keep the soil moist for some time, the less water they get the better until they start, as it only tends to exhaust and wash out the mixture given previously. The thermometer may stand about 40° to 45° at night for some time, and as they begin to swell, that may rise to 50° or 55°. They ought to be mulched frequently during the growing season, but this should be discontinued entirely when the fruit approaches maturity, as it will only tend to vitiate the flavor. They ought to be pinched back two or three times during the season to make them bushy, and likewise concentrate the fruit buds for the next year.

When the fruit is pinched, the trees may be placed outside under the influence of the sun and air, when they will be found to mature much quicker—I mean the ripening of the wood. Syringing ought not to be neglected for a single night during the growing season, except when in *blossom*, as they are almost sure to get red spider, and if these once get numerous they are difficult to overcome. The peach is subject to the *borer* in the house, as well as in the garden or orchard. I examine frequently at the base of the stem, and if the borer is found, I clean and pare out the wound with a sharp pointed instrument, and stop with grafting wax.

The most commendable fruits for orchard-house culture are: first, the peach; second, the apricot; third, the nectarine. Pears I do not think are worth troubling with, except it be a few early sorts. Cherries are not adapted to the orchard-house, as they seldom set well in-doors, in this locality. The following sorts I have found to do well:

1 *Peaches*—Coolidge's Favorite, Early York, Crawford, Large York, Morris White, Noblesse, Barrenton, Royal George, Kensington, Mixon Freestone.

2 *Nectarines*—Stanwick, Downton.

3 *Apricots*—Moorpark, Early Golden, Red Masculine.—G. VAIR, in *Canadian Agriculturist*.

OUR TIMBER TREES.—At the rate oak trees are now being felled and converted into staves and ship timber, but few years will elapse before our receding forests will be shorn of every "brave old oak." The demand for lumber of every kind, has caused many farmers to devote the major portion of their time to its sawing and marketing. Even our unpretending little port sends eastward an incredible number of feet in the course of season, and the business is on the increase. So great is the demand that the mills of the country cannot slice up the trees fast enough to satisfy agents and dealers. If the demand continues, as there is no reason to doubt it will, Ashtabula county will in time be robbed of all her lumber material, with nothing left for home consumption. Whether it is wise to sell ourselves lumberless, is a question which should be seriously pondered. At the rate our forests are now dwindling, and choice timber disappearing, fifty years hence will find the soil of Ohio, Pennsylvania, and other lumber-producing States, almost as barren as the prairies of the West or the plains of California. We look upon the policy of a man selling all his timber, because it brings a reasonably remunerative price, as very much like selling off all his hay or wheat in the fall, and having to buy in the winter, paying double what he received for it. But it is useless to speculate upon the subject; people will sell any thing for money, without stopping to regard the future.—*Connecticut Reporter.*

CLIMATE OF BRITISH COLUMBIA.—From very careful observations, made in 1862, at New Westminster, by Corporals Leech and Conroy, R.E., under the direction of Captain Parsons, R.E., we obtain the following interesting facts:

Highest reading of Barometer, corrected for temperature	30,517 in.
Mean height of do, do	
at 9 30 A M,	20,983 in.
Lowest do do	20,071 in.
Maximum temperature in sun's rays (black bulb)	104,0°, 29th Aug.
Maximum temperature of air in shade	88,5° do
Do do 9 30 A M,	73,9°, 23 July.
Do do 3 30 P M,	86,0°, 28th Aug.
Mean temperature of air, in shade 9 30 A M,	49,8°
Minimum temperature of air, in shade 9 30 A M,	2,0°, bel. zero,
Greatest amount of humidity	1,000°
Mean do do 9 30 A M,	842°
Least do do	320°, 3d Jan.

There were slight frosts nearly every night in the month of April, and once in May (16th); they did not recommence until the 9th of October. The severe frosts of January and February have been unknown for many years. The total rainfall amounted to 47,466 inches, of which nearly 8 inches fell in December. The greatest fall of rain in 24 hours measured 2,260 inches on the 20th of March. The average fall for every day of the year, was 0,130 inches, and for each wet day it was 0,352. On the Fraser River at New Westminster, ice appeared on the 1st of January, 1862; the river was unnavigable on the 4th; it was completely frozen over on the 9th: and the ice attained a thickness of 13 inches in the channel opposite the R. E. Camp, on the 12th of February. Sleighs were running from Langley to several miles below New Westminster, and persons walked from Hope to the latter place, a distance of 80 miles, on the ice, at the end of January. Lake Harrison and the other lakes were frozen. Navigation from New Westminster was open to the mouth of the river on the 11th of March, and from Yale on the 12th of April. Again on the 5th December, there was ice in the river at New Westminster for one day. In January, 1861, there was ice at New Westminster, but the navigation to the mouth of the river was not impeded. In 1860 there was no ice.

Foreign Intelligence.

AMARANTHUS MELANCHOLICUS RUBER AS A BEDDING PLANT.—The experience of all parties agrees as to this plant. In favorable seasons, and under proper management, is a most valuable addition to the colored-foliaged plants. Nothing equals it in brilliancy of color when in a good light.

CROP OF AN ORCHARD-HOUSE.—a correspondent of the *London Journal of Horticulture* thus describes a friend's orchard-house:

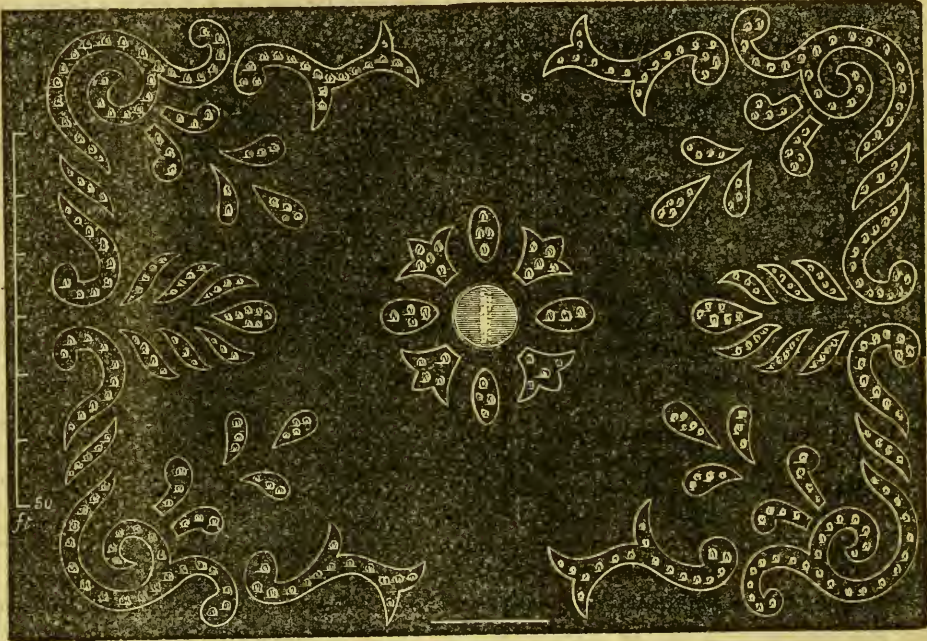
"The house is 55 feet by 15, a lean-to. It contains seventy trees, twelve of which are planted against the back wall; nine are standards planted out in a bed in the centre of the house; fifteen are dwarf trees planted in the front border, and thirty-four are in pots. There were on the wall 500 Peaches; on the standards upwards of 1100, and 130 Nectarines.

LOVE OF THE FRENCH FOR FLOWERS.—The passionate love of flowers is a marked characteristic of the Parisians, and the sale of flowers is in

Paris an extensive and lucrative branch of trade. It is computed that the various little patches of ground in the vicinity of the French capital, appropriated to floral cultivation, realize an annual income of 32,000,000*l.*, and give employment to 500,000 persons. In Paris alone there are no fewer than 284 florists, and on occasions of public festivity, their conjoint traffic not unfrequently amounts to 70,000*f.* At a *fete* given last season by one of

the foreign ambassadors, the cost of the flowers was 22,000*f.*

NEW VEGETABLE.—At the London Exhibition, the "Camote," a Lima Pole Bean, was exhibited by Mr. Kendall, of East Sheen. It is said to produce tuberous roots of large size, which are used as a table vegetable in Peru. From the plant shown, no opinion of its value as an esculent could be formed



DESIGN FOR A PARTERRE.—The design given above is composed almost entirely of scroll-pattern beds, from the talented hand of our old friend Mr. Thomas Rutger, and will serve to show the beautiful effect of curved lines, when judiciously blended in garden scenery.

The present design is equally adapted for being laid down on grass or gravel, according to taste or the requirements of the case. If surrounded by a shrubbery, and furnished with a few well-filled vases of plants, surrounding the central group, we can scarcely imagine any thing more charming.

Although curved forms for flower beds are always pleasing, they are more difficult to draw and lay down than straight-lined figures, which is the reason why we so seldom find complicated designs laid down. An acquaintance with the art of laying down full forms of beds is easily attainable however, and may be acquired from consulting articles on the subject, which we have published.

The scale annexed to the plan may be either en-

larged or diminished at pleasure.—*London Gardener's Weekly.*

GRAPES AT THE ROYAL GARDENS, FROGMORE.—The Vineries now of themselves well repay a visit, a statement which we think will receive credit when we mention that in two of them, each of which measures 101 feet in length and 16 feet in width, ripe grapes hang as thickly as it would be judicious to allow them—fine bunches, black as Sloes, and covered with a beautiful bloom. The rich appearance of these, spread out as they are over so large a surface, is only equalled by that of the great Grapery at Cumberland Lodge, where from one vine, covering a roof of 138 feet in length and 16 ft. in width, bunches of fruit just coloring, hang in equal profusion; and in this latter instance the only heating apparatus employed is an ordinary smoke flue.

In addition to the two Vineries at the Royal

Gardens just alluded to, there is also one containing Muscats, 50 feet in length and 14 feet in width. In this there is likewise a fine crop, which will probably be ripe some time in October. The borders of these houses are manured every year, both inside and out, with a good dressing of cow-dung before the vines are started into growth, a system which has been practised with the best results. Although now nearly 20 years of age, and with stems measuring on an average 9 inches in circumference, the spurs of these vines are at the most only 3 or 4 inches in length; the ugly snags usually found on old vines can therefore never exist here so long as the skillful mode of pruning hitherto practised continues to be followed. Vines are also grown well in pots, and a house is now being cleared out to be ready for their reception. From early vineries that were started in November last, and ripened their crop in March, the lights have been removed entirely, exactly as is done in the case of Peach houses. In one of the houses, among St. Peter's and Black Hamburg, is growing what is called the Strawberry Grape, a small black variety a smack of Strawberry flavor in it, which, though liked by some, cannot certainly be called good. On walls out of doors is also the Parsley-leaved Grape and Napoleon, the last a capital kind for open air culture.—*Gard. Chronicle.*

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

THE GREAT EXHIBITION.

Great expectations were indulged in respecting the success of this experiment, but they were more than realized. Yet there were immense obstacles in the way. In the first place, many warm friends of the society feared it would be impossible to succeed, and wished the society to be saved so great a loss. This was removed by the wealthy members raising among themselves a guarantee against loss. Then came a dread that disappointed exhibitors,—some with good reasons for disappointment, and some with none, as there are in all societies,—would have nursed their wrath so as to keep back a good display; but public good prevailed over private feeling, and except in perhaps one or two instances, the whole horticultural community turned out their products in full force. Then came the Hall question. Only one in the city large enough, and that unfitted without immense alterations for the purpose; but that was secured, and over \$1000 spent

on securing and putting it in order for one week's use. This was not all. Patriotism stepped in with its objections. "Our sons, brothers and husbands are fighting. Many of us are mourning for our friends. Shall we enjoy ourselves in the midst of these sorrows?" This was removed by a vote of the society to bestow the proceed on the Sanitary and Christian Commissions, for the soldier's benefit.

These few matters will afford but a faint idea of the many difficulties in the way. The ladies and gentlemen who managed the affair may well be proud of the result. On the whole, no such exhibition was ever held in America. Its popularity was surprising. 14,042 persons, independent of members of the society, visited the exhibition,—the enormous expenses will be fully covered by the receipts; and if the managers of the Opera House are not too persistent in their strict interpretation of the terms of the lease,—asking a large sum of money on a technical meaning, which afforded no loss to the Opera House, nor any gain to the society,—there will be a handsome surplus for the United States Sanitary Commission.

The good influence, on the community, of this exhibition, will last for many years. Thousands have the foundations of future horticultural taste laid now here for the first time, that will become a glorious monument to the usefulness of the society. Nurserymen who so freely spend their time, and endure inseparable annoyances, find their customers increased by this expansion of taste; and amateurs, who suffer somewhat by the time occupied by their gardeners preparing for and attending these exhibitions, reap a rich reward in the increase of horticultural spirit in their employees, who are stimulated to do their utmost to excel in knowledge and skill.

In view of the magnitude of this exhibition, we have thought it just to all to publish the premium lists in full. Noting, however, that the reports have to receive the sanction of the society the third Tuesday in October, before they become "law." Next month we will give the report of Committee on Bouquets, with our own notes of winning things.

COMMITTEE ON PLANTS AND FLOWERS.

The Committee award the following premiums: For Collection of 12 plants, all different, in not over 16 inch pots, at least one-half in bloom, open to private collection only. First Premium to James Eadie, gardener to Dr. Rush. Collection same as above, open to all. First Premium to Adam Graham, gardener to ex-President General Patterson.

- Second Premium to E. R. Hibbert, gardener to Professor Fairman Rogers.
- Specimen plant, in pot or tub. First Premium to James Eadie, gardener to Dr. Rush.
- Second Premium to Francis O'Keefe, gardener to Joseph Harrison, Esq.
- Third Premium to A. Graham, gardener to General Patterson.
- Collection of Six plants, not over 10-inch pots. First Premium to E. R. Hibbert, gard. to Prof. Fairman Rogers.
- Second Premium to John Fairbrother, gardener to D. R. King, Esq.
- Third Premium to Jas. Eadie, gar. to Dr. Rush.
- Collection of Twelve Ornamental Foliage plants, not over 12-inch pots. First Premium to Wm. Joyce, gardener to ex-President M. W. Baldwin.
- Second Premium to J. Fairbrother, gardener to D. R. King, Esq.
- Third Premium to Jas. Eadie, gar. to Dr. Rush.
- Specimen Ornamental Foliage plant. First Premium to E. R. Hibbert, gardener to F. Rogers.
- Second Premium to J. Eadie, gar. to Dr. Rush.
- Collection Six Variegated Foliage plants, not over 12-inch pots. First Premium to James Eadie, gardener to Dr. Rush.
- Second Premium to John Fairbrother, gardener to D. R. King, Esq.
- Third Premium to Wm. Joyce, gardener to M. W. Baldwin.
- Specimen Variegated Foliage plant. First Premium to James Eadie, gardener to Dr. Rush.
- Collection of Twelve Ferns, not over 12-inch pots. First Premium to Wm. Joyce, gardener to M. W. Baldwin.
- Second Premium to E. R. Hibbert, gardener to Professor Fairman Rogers.
- Collection of Native Ferns. First Premium to T. Meehan, Nurseryman, Germantown.
- Caladium, Twelve plants. First Premium to Jas. Eadie, gardener to Dr. Rush.
- Second Premium to Adam Graham, gardener to General Patterson.
- Marantas, Six plants. First Premium to E. R. Hibbert, gardener to Prof. Fairman Rogers.
- Second Premium to J. Eadie, gar. to Dr. Rush.
- Dracenas, Six plants, First Premium to J. Fairbrother, gardener to D. R. King, Esq.
- Second Premium to J. Eadie, gar. to Dr. Rush.
- Orchids, Six plants, one half in bloom, First Premium to James Eadie, gardener to Dr. Rush.
- Collection of Lycopodiums and Selaginellas, Twelve plants, First Premium to John Fairbrother, gardener to D. R. King, Esq.
- Second Premium to Adam Graham gardener to General Patterson.
- Fuchsias, Six plants, Second Premium to J. Cook, gardener to Rev. J. M. Richards.
- Anæctochilus, Six Plants, First Premium to E. R. Hibbert, gardener to Professor Fairman Rogers.
- China Asters, Twelve Plants, First Premium to Aubry & Souchet, Nurserymen, Carpenter's Landing, New Jersey.

Special Premiums.

- For General Collection, a Premium of \$3, to P. Mackenzie & Son, Florists, Philadelphia.
- For Plants of Commerce, a Premium of \$5 to John Quin, gardener to Dr. Wood.
- For General Collection, including Ferns and Selaginellas, a Premium of \$5 to Remi Herisse, gardener to Lewis Taws, Esq.
- For General Collection, a Premium of \$2 to John Joyce, gardener to James A. Wright, Esq.
- For Twelve Evergreens, a Premium \$3 to William Bright, Nurseryman, Rising Sun, Pa.
- For General Collections, the following Premiums: \$3 to James Eadie, gardener to Dr. Rush; \$5 to Wm. Joyce, gardener to M. W. Baldwin; \$3 to E. R. Hibbert, gardener to Fairman Rogers; \$5 to Thomas Meehan, Nurseryman, Germantown; \$5 to Francis O'Keefe, gar. to Joseph Harrison; \$3 to Henry A. Dreer, Florist, Philadelphia; \$3 to Samuel Mason; \$3 to David Ferguson, Nurseryman, Laurel-Hill; including Grotto, \$15, to John Fairbrother, gardener to D. R. King; including a plant of *Alocasia metallica*, \$10 to Mrs. Andrew J. Catherwood; including Seedling *Lantanas*, \$3 to David W. White, Esq.
- For Plants in Small pots, a Premium of \$2, to J. Sherwood, Nurseryman, Bristol, Pa.
- For Collection of Plants, Premiums of \$1: to John Williams, gardener to S. Welsh, Esq.; to T. Reilly, gardener to Estate of late G. W. Carpenter, Esq.; —, gardener to Joshua Longstreth, Esq.; John Cook, gardener to Rev. J. M. Richards; for 2 *Cyanophyllums*, —, gardener to George H. Stuart, Esq.; for 1 Cotton Plant, to Dr. John Goddard.
- Mr. Southwood deserves much credit for the taste displayed by him in the arrangement of the Grotto.

Respectfully submitted,

FAIRMAN ROGERS,
PETER MACKENZIE,
STEPHEN S. PRICE,
ROBERT SCOTT,

Committee.

The Gardener's Monthly.

COMMITTEE ON FRUITS.

The Committee congratulate the society on the success of the present exhibition. The display being particularly fine, so that it has been in many cases difficult for the committee to discriminate among so many competitors whose contributions have been so nearly equal. They award the following premiums:

Foreign Grapes.

- Best Black Hamburg, 3 bunches, to President J. E. Mitchell.
 Second Best, Do. do., to H. Fricke, Esq.
 Best any other dark variety, Lady Downs Seedling, to Benjamin Leedom, Esq., Germantown.
 Second Best, Do., do., Purple Damascus, to J. Joyce, gardener to J. A. Wright, Esq.
 Best Muscat, any variety, Canon Hall Muscat, to Robert Ramsey, gardener to J. L. Erringer.
 Second Best, Do., do., Muscat of Alexandria, to Estate of late F. Lennig, Esq.
 Best any other white variety, 3 bunches, Deccan's Superb, to same.
 Second Best, Do, do, White Frontignan, to President J. E. Mitchell.
 Best any new variety, shown first time, Buckland's Sweetwater, to Dr. Geo. Thomas, West White-land, Pa.
 Second Best, Do, do, Golden Hamburg, to same.

Native Grapes.

- Best Collection, grown in the open air, for a collection of 34 kinds, to Hoopes & Bros., Nurserymen, Westchester, Pa.
 Second Best, Do, do, for collection of 18 varieties, to Joseph Kift, Florist, Westchester, Pa.
 Best Delaware, 6 bunches, to A. L. Rowand.
 Second Best, Do, to S. W. Abbott.
 Best Concord, 6 bunches, to R. Thatcher, Darby.
 Second Best, Do, to John B. Kern.
 Best Diana, 6 bunch., to F. F. Merceron, Catawissa.
 Second Best, Do, to S. W. Abbott.
 Best Catawba, 6 bunches, to J. M. Laughlin, gardener to I. B. Baxter.
 Best Isabella, 6 bunches, to A. L. Felten, Esq.
 Second Best, Do, to P. H. Burroughs.
 Best any other variety, for Elsinboro, to P. Raabe, Florist, Philadelphia.
 Best any new variety, 6 bunches, for Rogers Hybrid No. 19, to A. L. Rowand.

Pears.

- Best Collection named varieties, 3 specimens each, for 179 varieties, to Ellwanger & Barry, Nurserymen, Rochester, N. Y.
 Second Best Collection named, 3 specimens each

for 120 varieties, to W. Parry, Nurseryman, Cinnaminson, N. J.

- Best Bartlett, 12 specimens, to John Perkins, Nurserymen, Moorestown, N. J.
 Best Seckel, 12 specimens, to C. L. Willits, Esq.
 Best Flemish Beauty, 12 specimens, to E. Satterthwait, Jenkintown, Pa.
 Best Duchesse d'Angouleme, 12 specimens, to J. Perkins, Nurserymen, Moorestown, N. J.
 Best Louise Bonne de Jersey, 12 specimens, to E. Satterthwait, Jenkintown, Pa.
 Best Beurre d'Anjou, 12 specimens, to same.
 Best Washington, 12 specimens, to J. McLaughlin, gardener to I. B. Baxter.
 Best Lawrence, 12 specimens, to Richard Thatcher, Darby, Pa.
 Best Ornamental dish or basket, assorted varieties, to E. Satterthwait, Jenkintown, Pa.

Apples.

- Best Collection, named varieties, 3 specimens, for a collection of 105 varieties, to Ellwanger & Barry, Rochester, N. Y.
 Second Best, Do. do, for 43 varieties, to J. Perkins, Nurseryman, Moorestown, N. J.
 Best Bushel, any variety, for Maiden's Blush, to W. Parry, Nurseryman, Cinnaminson, N. J.

Peaches.

- Best 1 peck, for Pettit's Imperial, to C. P. Hayes.
 Second Best, Do, do, for Pound Royal, to Thos. E. Hunt.

Quinces—Best one peck, to George Huster, gardener to Jefferson Stowell, Esq.

Figs—Best 12 specimens, to James Eadie, gardener to Dr. Rush.

Nectarines—Best 12 specimens to S. J. Lenoir.

Plums—Best 24 specimens, for Coe's Golden Drop, to Miss Mary C. Price.

Melons—Best 3 specimens California, to George M. Kohl, Jenkintown, Pa.

Raspberries—Best 1 quart, to A. L. Felten, Esq.

They have also agreed to recommend the following

Special Premiums:

Grapes—\$3 for a very fine collection of Foreign grapes, 9 varieties, to B. Leedom, Germantown; \$2 for a fine collection, to Joshua Bradley, Esq.; \$1 for a fine bunch of Bowood Muscat, to Dr. G. Thomas, West Whiteland, Pa.; \$1 for a fine collection of Native varieties; \$2 for a collection of Natives, including Maxatawney, to Peter Raabe; \$1 for a collection of 13 Native varieties, to C. P. Hayes, Esq.

Pears—\$5 for a collection of 75 varieties, to Edw. Satterthwait; \$3 for Do, do, 52 varieties, to Hoopes & Bros., Westchester; \$2 for Do, do, to

The Gardener's Monthly.

Richard Thatcher, Darby; \$1 for Do, do, to C. W. Griffith; \$5 for Do, do, 96 varieties, to C. M. Hovey & Co, Boston; \$1 for a splendid White Doyenne, to Mrs. Robert Churchman; \$3 for a fine collection of 47 varieties, to J. McLaughlin, garden to I. B. Baxter; \$2 for very fine Louise Bonne de Jersey and Duchesse d'Angouleme, to W. Walker, Dover, Delaware. \$2 for a fine collection of Apples, to S. W. Noble, Nurseryman, Jenkintown, Pa. \$3 for Do, do, Plums, to Ellwanger & Barry, Rochester, N. Y. \$1 for Do, do, to J. McLaughlin, gar. to I. Baxter. \$5 for Fruit Jars and Preserved Fruits, to Hartell & Letchworth, Philadelphia. \$1 for very fine Delaware grapes, arrived to late for competition, to —

\$2 for a large collection of Foreign Grape-vines in pots, well grown, to William Bright.

They would also mention as worthy of special notice the following:

A fine collection of Grapes, from Hon. Isaac Newton, Commissioner of Agriculture, Washington. Superior Delaware grapes, from Richard Thatcher. A fine Collection of Foreign grapes from Dr. G. H. Bute, Nazareth, Pa.

A fine Collection of Native grapes, from Charles P. Hayes, Esq.

A Dish of White Doyenne pears, from Mrs. Leggett.

A good Collection of Native grapes, deposited by Mr. McMinn.

A good Collection of Native grapes from President J. E. Mitchell.

Also fine Crevelings, maintaining its reputation as one of the best early grapes.

Two very fine bunches of Palestine grape, from different contributors.

Very fine Black Hamburg, from John Fisher, Esq, Batavia, N. Y.

A new variety of Native grape, called Christine, from Robert Kilvington, Florist, Philadelphia.

The Telegraph Grape, from P. R. Freas, Esq.

A fine plant of the Yeddo Grape, from the collection of John Sherwood.

A very fine collection of Foreign grapes, from C. H. Rogers, Esq.

A collection of 12 varieties of Roger's Seedling Grapes, of which Nos. 33 and 43 are the best.

St. Ghislain and Kingessing Pears, from Dr. J. K. Eshleman, Downingtown, Pa.

A fine collection of Pears, from Pres. J. E. Mitchell. Also one from Geo. Huster, gar. to J. Stowell.

A fine collection of Pears and Apples, to Chas. W. Griffith.

Fine White Doyenne Pears, from Isaac C. Price, and J. F. Hughes, Esqs.

A fine collection of various fruits A. L. Felten.

A Pear, said to be a seedling, called Neff, of good quality.

A handsome Globe of Fruit, deposited by A. M. Spangler, Esq.

A very fine Collection of Native grapes, from Rev. J. Knox, Pittsburgh, consisting of 14 varieties, all excellent, but came too late for competition.

Flora Grape, maintaining its former good reputation, from A. M. Spangler, Esq.

Bartram Pears, first quality, from C. Harmar, Esq.

A Dish of very superior Pears, name unknown deposited by C. Mack, gar. to F. Lennig's Estate.

The committee also notice in the Fruit room a very handsome collection of Ornamental Hanging Vases, and also of Horticultural Implements, from Henry A. Dreer.

SAMUEL W. NOBLE,
W. L. SCHAFFER,
EDWIN SATTERTHWAIT,
Committee.

COMMITTEE ON VEGETABLES.

The Committee respectfully report, that they have awarded the following premiums:

General Display by a Market Gard., to A. L. Felten.

Do, do, another gardener, to Thos. Meghran, gardener to Girard College.

Do, do, an amateur, to Thomas McCready.

Potatoes, 1 bushel, (Andes) to Edw. Satterthwait.

Do, do, (Mercer) A. L. Felten.

Beets, 1 dozen, to same.

Carrots, do, to Thomas Meghran.

Salsify, do, to same.

Onions, 2 dozen, to same.

Lettuce, 6 heads, to same.

Cabbage, Drumhead, 6 heads, to E. Satterthwait.

Tomatoes, 1 peck, to same.

Celery, 6 stalks, best, to A. L. Felten.

Do, do, second best, W. R. Williams, gardener to Dr. Evans.

Egg Plants, six fruit, to John Joyce, gardener to J. A. Wright.

Pumpkins, 1 specimen, best, Frederick Hoeger.

Do, do, second best, A. L. Felten.

Sweet Corn, to same.

And they further recommend a special premium of \$1 for 6 heads Drumhead Cabbage, to same.

CHARLES V. HAGNER,
ISAAC C. PRICE,
WILLIAM HACKER,
JOHN MCGOWAN,
Committee.

THE GARDENER'S MONTHLY.

DEVOTED TO

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THOMAS MEEHAN, EDITOR.
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Hints for November.



FLOWER-GARDEN AND PLEASURE-GROUND.

One of the last thought of things, too frequently, is to apply manure to flower-beds. But it is scarcely less essential to a fine summer display, than it is to the production of fine vegetables; and certainly as necessary as to trees, or the lawn. Still it should be applied with caution. While a poor soil will only grow plants to a diminutive miniature size, which, though clothed with a profusion of small, starved looking blossoms, make no show; a soil over rich will cause too great a luxuriance of foliage, which is always opposed to an abundance of bloom. In most cases we prefer half-decayed leaves—where these could not be had we would use stable manure. The former spread over the soil two inches thick, or the latter one inch—would form a dressing which, in ordinary cases, should last two or three years. It is difficult to get flowers to do well in even the most favorable soil, if it is liable to hold water to stagnation in winter. Where flower-gardens or beds exist under such circumstances, advantage should be taken of the present season to have it thoroughly underdrained. It will be more beneficial in the end than the most judicious manuring; it is indeed in itself a powerful means of fertilizing the soil. Where circumstances render the draining of such places inconvenient, a temporary advantage can be gained by digging up the soil at this season very roughly, so as to expose as much as possible to the action of the frost. This is at best but putting a patch on an old garment—an apology for the want of means to do better.

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.

HOT AND GREENHOUSE.

We have very few remarks to offer under this head in addition to what we made last month. Watering, airing, and preserving from insects, occupying most of a gardener's spare time at this season. Growth should not be much encouraged at this season; plants will consequently not require much air, the main object for its admission being to keep

down the temperature in sunny weather, and to guard against damp. Those plants which will grow, as Pelargoniums, Cinerarias, Heliotrope, Chinese Primroses, and many plants required for winter or spring blooming, should have all the light possible, and would be benefited by the application of manure water once a week. Guano water is as good as any thing; a half pint to about 10 gallons of water. The sweepings of the fowl or poultry house is nearly as good, in about the same proportions.

Correas, Epacrises, Pimelias, and a host of ornamental plants will now be coming into blossom, cheering their possessors during many an otherwise dreary hour during the wintry season, and rewarding a thousand fold by their freshness and beauty the outlay they may have occasioned, or the trouble they have given to those who have loved and protected them.

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, Cestrums, Begonias, Pentas, Plumbagos, 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. Orchidæ: 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 too; 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.

VEGETABLE GARDEN.

As in the Flower-Garden, so here the season calls attention to the improvement of the soil. Draining and trenching are two of the most important

operations. In performing the latter the soil need be only *loosened* to the depth of two or three feet, with manure mixed well through it. Fine gardens are frequently rendered barren for years by the sterile clayey subsoil being brought to the surface. Asparagus beds, as soon as the stalks are cleared off, may have a good portion of the soil on them raked off into alleys, and its place supplied with three or four inches of rotten manure. If the ground is of a light or sandy nature, salt may be applied before the manure. In wet soils it is injurious. Where the root crops are unhoused, the remarks in last month's hints will still be applicable.

It is a nice point to preserve celery well through the winter to the spring. The main things are to keep it cool, just above freezing point, and just moist enough to keep it from withering. Many take it up, and put it in a cellar, where the above mentioned conditions can be obtained, packed in sand. The usual plan is to take it up and pack them pretty close together side by side in some sheltered spot, putting a thick coating of dry straw on them on the approach of severe frost; keeping it dry by laying old shutters over all.

FRUIT GARDEN.

[The following seasonable chapter was written some years ago by Mr. W. Saunders. We give it a place this month in preference to remarks of our own.]

Gathering and storing fruit. The preservation of winter fruit is a matter deserving more attention and care than is generally bestowed upon it. It is not now as formerly, when fruit eaters and growers were content with a few months' supply. Nothing less should satisfy the cultivator than a dish of fresh, ripe fruit every day in the year. Of course, very much depends upon a judicious selection of trees, that ripen fruit in rotation; but the dependance for a winter supply lies mainly in the mode of keeping the late sorts through the winter and spring. The *time* of gathering requires particular attention; if allowed to remain too long on the tree, the fruit becomes deteriorated. It should be picked just as the seeds commence changing color. The sacrifice of a few fruit in ascertaining this period is of no importance compared with the advantages of having them stored in proper season. Choosing a fine dry day, pick every fruit carefully by hand, guard against bruising them in the slightest degree.

The smallest bruise lays the foundation for putrefaction. The object now is to preserve the juices of the fruit without subjecting them to decay. The way to insure this is to place them in a temperature

which will neither drain them of their juices by evaporation, nor promote decay through damp. Light also should be excluded. The difficulty of keeping the finer fruits in cellars arises from either moisture or heat in these apartments. It has been found in the preservation of ice, that houses constructed above ground, secured from external influences, keep it much better than the best constructed well. The same principles occur in the preservation of fruit. An exclusive artificial temperature must be maintained, as uniform as possible. A minimum temperature of 34° and a maximum of 40° may be considered the greatest fluctuation desirable. The principal difficulty lies in keeping a proper hygrometrical state in the atmosphere; should any symptoms of damp or mildew appear, it should be removed by ventilation. Care should be taken in the admission of external air whenever its temperature is much above that of the room. When this is the case a deposition of dew will take place and the evil be increased rather than lessened.

Frequent and careful examination will be necessary to remove all that show symptoms of decay, such should be promptly removed and every thing kept as sweet and clean as possible. The late keeping pears, as *Easter Beurré*, require to be removed into a warmer temperature, say about 65° for a week or ten days before eating. This has a tendency to remove all grittiness, and heightens the flavor of many varieties. So much depends upon the keeping and ripening of winter fruit, that many kinds of the highest repute in Europe have been considered here unworthy of notice, simply from want of proper treatment in this respect.

Planting trees should be proceeded with without delay, the past month has been peculiarly favorable for trenching and preparing soil. The advantages of preparing soil when in a dry state are very great, as it crumbles and mixes better, lays open and permeable to the atmosphere, and retains more heat. It is very hurtful to clayey soils to work them in a wet state. The effects may be traced in years afterwards in the hard cemented lumps which nothing but lengthened exposure to rain and frost can pulverize. Where trees are to be permanently planted, they should be put in the best condition, and left as light and friable as possible, since it cannot afterwards be remedied without injuring the roots. Should the weather continue favorable, planting may be continued until the end of the month, after that, except on very dry soil, and elevated locations, it will perhaps be as well to defer it until spring. We must again urge the advantages of autumn

planting; not only on account of there being more leisure to attend to it at this time, and the soil in the best possible condition for its performance, but principally of the additional certainty that the trees will make a good growth the following season, consequent upon the increase and establishment of roots during winter, and the diminished risk of losing them should a dry summer occur.

Grapes—both in and out doors, should be winter pruned towards the end of the month. Whatever mode of pruning is practised should be strictly carried out. A continued change of systems will be unsatisfactory. Nor, indeed, is this the proper season to commence a change, even should one be contemplated. The management of the plant during summer must be conducted with reference to the winter pruning, so that the present will only be the completion of the years labor so far as pruning is concerned. The borders should be slightly forked over, adding a topdressing of woodashes, which supply ingredients largely used by the grape; refuse charcoal is very effective in preserving a proper degree of porosity. A covering of six or eight inches of half rotted manure may then be spread on the surface, which will enrich the soil, and prevent frost from injuring the roots.

Orange and Lemon trees should receive very little water from this until spring, when the wood is properly ripened, and the soil kept comparatively dry, a few degrees of frost will do them no harm. If kept in a cellar no water will be required, unless, as we have observed, in some cases they are placed near a furnace in order to keep them warm. This kindness, however, is entirely misplaced. A close cellar is sufficient. Fire heat is more injurious than beneficial, but where the plants are unavoidably set near heat, an occasional watering will be required, to supply the evaporation from the leaves.

Communications.

THE ANNUAL EXHIBITION OF THE MASS. HORTICULTURAL SOCIETY.

BY MR. W. C. STRONG, BRIGHTON, MASS.

The exhibition was held in the halls of the society, on the 22d of September and for three days following. The most prominent features may be of interest. Pears must be first mentioned. The tables showed a great variety, and yet less than in previous years. Cultivators are endeavoring to drop the second quality kinds, and retain only the best. Of these there were many specimens of

most excellent quality; although many exhibition kinds—such as Beurré Diel and Flemish Beauty—have cracked badly, owing, as most suppose, to the wetness of the season. The Clapp Seedling, fine specimens of which were exhibited a fortnight previous, did not appear at the annual show. No noticeable new kind was brought forward. The entire absence of Peaches was in marked contrast with former years. From different causes the Plum is also becoming almost unknown. Grapes, on the other hand, have made a decided advance to the front. A long table was filled with at least fifty varieties of all degrees of excellence. The aroma which filled the air was very suggestive of the tangled wild woods, and the clustering vine, and the foxes, &c. It was really a fine show, probably the best, and certainly the most interesting we have ever had. Our President, who had just returned from the fairs in Philadelphia and New York, pronounced our display to be much the most extensive and decidedly superior; indeed, he went so far as to call it the finest display of grapes ever seen in America; but knowing his partiality for his native State, we are disposed to make a grain of allowance. Apropos of the President, after a hearty horticultural dinner he was observed to make away with a large bunch of Hartford Grapes, in preference to other fruits. Query: does this fact invalidate his testimony upon the Grape question? But to return to the exhibition. The most prominent in size and beauty of appearance were the Union Village, Winchester, Concord, Hartford, and Rogers No. 4. The best in quality were Allen's white, Delaware and Creveling. Iona was also of excellent quality, not quite ripe, but of high Catawba aroma. Winchester much resembled Union Village, with about the same degree of unripeness, though Mr. Blackett thinks his position unfavorable. Rogers, Concord, Dianas and Isabellas were not generally ripe. Creveling was thoroughly ripe, with little pulp, juicy, leaving a clean, smooth taste, and is agreeable to all. Allen's Hybrid has quite exceeded expectations. Large bunches were shown which, if not perfectly ripe, were yet in quite good condition. It seems too much to expect that this will be to us what the Chasselas is to France; yet it is quite equal, if not superior, to the Chasselas in quality; is hardy, thrifty, healthy, productive, and appears likely to mature its fruit in all ordinary seasons, in this vicinity. The little Delaware was, of course, promptly present, pink, and prim, and plump, and blushing. She is too fair and good for earth. I fear she will never rough it in the marts of trade. If you ask

me, I will give my experience in this respect; but at present I will confine myself to the exhibition.— [Please do.—ED.]

Apples were not equal to some previous seasons, though there were noble specimens of some kinds, such as the Washington, Northern Spy, King, and others. Scattering dishes of Nectarines, Figs, Plums and Raspberries completed the list of fruits, and rather proved the rule that Apples, Pears and Grapes are our only autumn fruits.

The various collections of variegated plants were creditable, and some of the specimens remarkably fine. Some of the most noticeable were a fine plant of *Croton nobilis*, about six feet in height and of good form; *Pandanus variegata*; *Maranta regalis*; and a remarkably well-grown specimen of the old but beautiful *Cissus discolor*. This last stood about ten feet in height, including the pot, and was a perfect mass of foliage on all sides, every leaf being of high color and perfect. *Caladiums* and Ferns were most striking, of which there were many good specimens. Quite a large collection of the newer kinds of Conifers, including some of the recent evergreens from Japan, was an object of interest to many gentlemen who are on the watch for anything that promises to be hardy in this class of trees.

Flowers come last, and I regret to say that, with the exception of a few stands and some fine bouquets, they were the least satisfactory part of the show.

CULTURE OF *CISSUS DISCOLOR*.

BY "SWIFT," BRANDYWINE, DEL.

The following is a good way to grow a "speciman" *Cissus discolor* :—

In the spring, say April, take three one-year-old plants, cut back to two or three eyes, plant in a twelve or fourteen inch pot, in soil composed of four parts well-rotted manure, two parts loam and one of sand. Take four strong stakes, four feet four inches long, insert in pot at equal distances, so they gradually converge to each other, tie them together at top with strong cord or wire, and you have a frame that will answer every purpose. Train the shoots as they grow, from right to left, or, with the motion of the sun, spirally from base to apex. Give it a warm, shady place in the hot-house, where the temperature will not be likely to fall lower than 60°, as this plant requires warmth when growing. By the end of July you will have a plant the admiration of all who see it, forming, with its rich parti-colored leaves, a perfect gem of beauty.

The remembrance of such a plant will recall pleasant thoughts, and define clearly the meaning, in its truest sense, of the poet's words:—

"A thing of beauty is a joy for ever."

GRAPE GROWING AND APPLE CULTURE.

BY DR. GEORGE THOMAS.

From the Fruit Growers' Report of Eastern Pa.

When the following report was presented to the society, many of the members urged on us its value for publication in our journal. Communications furnished directly to us have kept it in the back ground until now, and not that we had not in common with the society a high appreciation of its value:—

Thine of the 16th inst. has just come to hand, and I do not see how I can reply in answer to thy request better than to give thee a full account of my Grape-growing and Apple-culture from the beginning. In 1841 I settled in the old family mansion, after a slight remodeling, it not having been occupied by any of the family for many years previous, and, of course, being much dilapidated, with no pleasure-ground, or garden, or orchard, or, in fact, any large trees, except four, two of which (willows), riding-switches, stuck in by my grandmother, after a ride in the year 1772 or '73. I commenced planting immediately, as I wished to enjoy the fruits, (and, at my age, had not much time to spare,) and did not confine myself to any particular variety. Notwithstanding my neighbors urged upon me the folly of even thinking of raising Cherries, Plums, Peaches, or hardly Apples, in the "Valley," as they had "run out," "soil don't suit," &c., however, I concluded to try, and took the more pains in planting. As I was a tyro in pomology and horticulture, I depended on Landreth and Samuel Rhodes, two leading nurserymen, to select thirty-five Apple, twelve Pear, six Plum, and a number of ornamental trees and shrubs, and of the former firm I got the following Grapes:—Isabella, Catawba, Elsinboro', Lenoir, Bland, and Cigar-box.

The Apple trees were planted on the site of an old orchard, the stumps not then decayed, it being the only ground near the house suitable. I took the precaution to set them in the centre of the old rows, and digging holes eight feet in diameter and two feet deep, throwing the old soil on the surrounding space, and carting in the washings from the turnpike and sods from the roadside, filling the hole at least eight inches higher than the average level, to allow for settling, top-dressing the whole

with ashes from a lime-kiln, which had a good deal of lime mixed with it, at the rate of 120 bushels to the acre. For the first four or five years it was cropped with potatoes, corn, sugar beets, &c. Since then, for fifteen or sixteen years, it has been in grass, and has had one good heavy coat of coarse barnyard manure spread on the surface. It is mowed once or twice during the season, and much of the grass allowed to decay on the ground. Now, as to the results. The trees have all grown finely. Trunks, one foot over; tops, eighteen to twenty-five feet in diameter; branches of many of them touching the ground, and have, the past season, yielded, on an average, over twenty bushels of fair fruit to the tree. They commenced bearing the third year after planting, and since the fifth year, have afforded us a full family supply, bearing more or less every year. The trunks and larger branches were yearly washed with soft soap, and the ground kept loose and clean a foot or more around the trunk, exposing the main roots. The varieties of this planting were: Pennock, Smith's Cider, Smokehouse, Early Harvest, Knowles, Bellefleur, Pearmain, Queen, Bough, Codlin, Reinette, Maiden's Blush, Carthouse, and Laquier for cider, and Newtown Pippin, the latter bearing this year in any quantity, for the first time giving eight or ten bushels of as fair fruit as I ever saw. I think I can truly say, the fruit of these old varieties have been as good and perfect, and yielded as good crops as the same varieties did on the same ground, as I can recollect them forty years ago. My love for planting increased with my years, so that I now have quite an extensive collection, and most of the newer kinds; but none have supplanted, in my estimation, the Newtown Pippin, Bellefleur, Maiden's Blush, Pennock, Pearmain, Carthouse, Early Harvest, and, for clear, sparkling cider and great yield, the little Laquier. I must say, in this connection, that my small beginning of thirty-five now reaches one hundred or more around the dwelling, among which the Baldwin, Northern Spy, Jefferis, Red Astrachan, Hubbardston's Nonsuch, Gravenstein, Tewkesbury Winter, and a large reddish apple, and a great and certain bearer every year, and super-excellent for the kitchen, which I got of Prince for Alexander, cannot be dispensed with in the smallest collection in this district, soil and climate being particularly adapted to the first two, and especially the Northern Spy, being as large and perfect, and, to my taste, better flavored than those from a more northern latitude.

As regards pruning, I have done very little of it, never having had occasion to cut out limbs over

one inch in diameter, nor did I confine myself to any particular season; but from frequent examinations, took out any small branch that I thought might be superfluous, being careful that they should not cross each other, so as to rub. In other respects letting nature take her course. Caterpillars had not much peace, and birds were encouraged at the expense, some seasons, of the greater part of the cherry crop. The only Apple that has failed entirely is the Lady Apple, which I can only raise in perfection on Dwarfs.

Risk on the subject of Apples I must, at the risk of being tedious, give the result of another experiment. Having cleared a piece of timber land on the north valley hill, the ground being rough and stony, but producing good corn, one crop of which we had taken from it in the spring of 1850, I think, I got Morris & Stokes, nurserymen at West Chester, to order for me, of one of the Rochester firms, a lot of trees, comprising, among others, six Newtown Pippin, six Northern Spy, six Baldwin, six Swaar, six Spitzenburg, six Greenings, and six Roxbury Russet, wishing to test those fine Northern Apples in Chester County, and in ground just reclaimed from the forest. They arrived in good condition, though small, and were carefully planted, very shallow; indeed, we had to cart in dirt to cover the roots—the ground being so stony, we could not get soil on the spot free from stones, and well mulched. They all lived and were doing well; but when in their second year we were visited by the locusts, injuring them so much I feared a total loss; but recovering the next year, they seemed to thrive and grow faster than ever. For two or three years after planting we tried to grow potatoes and corn, but without much success, the ground being so strong and stumpy. Finally, (nine years ago last spring), I sowed it with clover and timothy, mowing it every year since, until the green grass took possession. They have now been bearing, more or less, the last six years, paying a good interest on the value of land, fencing, and cost, and this fall they averaged at least ten bushels of picked Apples to the tree. Finer sized fruit I never saw, the Newtown Pippin not excepted, though the yield was not so great as the others, getting only about a barrel and a half to the tree. The Spy is an extraordinary Apple, far superior to any I have ever raised or seen; tree good grower, and bearing enormous crops of fruit as large as the Pennock, and exquisite flavor. I must except from the above the Swaar, which does not do well, the trees not having a healthy look, the extremities of the last year's wood

being winter-killed, and the fruit, though sufficient in quantity, poor and very defective. It does the same in our low valley land.

Now, what I wish to call thy attention to particularly is the yield and quality of the Newtown Pippin, an Apple which has hardly its equal in quality and reputation, doing so well on both high and low ground the past season, and on the new ground for several years past. The variety does not seem to have run out, nor has the proper nutriment been exhausted from the soil, in this instance. It is not that our climate has changed, and may we not in future look for good fruit?

Now, about cultivation. They tell us we must drain and plough, and keep the ground loose—work it like a garden. Thee sees I have done neither, and I have fine crops, and I will venture it will be hard to find more healthy, thriving trees. Our friend Meehan, in the *Gardener's Monthly*, recommended to lay orchards in grass, or suggested the idea that we could plough and cut the roots too much; and Major Freas, in the last *Telegraph* (December 18th), tells us to let the grass grow; it keeps the soil moist and of a uniform temperature, protecting the roots both in summer and winter. He also gives twenty feet in quincunx as the proper distance, and says truly, that an "orchard should be an orchard only." I am, from past experience, inclined to be of their opinion. I have observed in many parts of our country little orchards of thriving trees and well laden with fruit in their season, that have been planted on both high and low ground, without any previous draining or subsoiling, or that have received much, if any, subsequent tillage, except what has been done by the swine; and judge their would be less frequent complaints of failure, if more care was taken to protect them against the farmer's own cattle and sheep, which break down, bark, and injure more trees than the borer or negligent culture.

In Pear culture I have been moderately successful; but having only some twenty-five kinds grown here and these about the house and through the lawn, not in a separate orchard, and have had no special treatment or manuring, except to wash the trunks loosen the soil immediately in contact with the tree occasionally. Among the varieties we esteem most, are the Early Catharine, on account of its earliness, its certain and enormous bearing; the perfection of its fruit and general utility for family use, and large surplus for the pigs; Madeleine, Julienne, Bartlett, Washington, Seckel, Brandywine, and, for early and late winter, Beurré Langelier, Vicar and Lawrence.

Of many of the standard kinds I have bearing I cannot say much; some seasons they are good, others indifferent. The Dwarfs have not done well, perhaps for want of the proper kind of treatment and not enough of it. Though I had good samples of Buffum, Kirtland, &c., the past season. I have tried various plans for keeping and ripening the late varieties, and have had no trouble with the Vicar and Winter Nelis, which we think the best. Have not had the Lawrence long in bearing. Our plan is, to let them hang as long as possible, or till there is danger of freezing, when they are gathered. The finest specimens wrapped separately in paper (old Newspaper) and packed in boxes and laid on shelves in a cool, airy cellar. As soon as they begin to ripen, they are brought up and kept in a closet adjoining the living room. This year had none to shrivel or rot, and have been eating them since the middle of last month. The smaller and defective ones, or cullings, are boxed without wrapping; boxed and treated the same way, and sometimes are equally good. The Beurré Langelier were fine this year, as good, and some thought a little better, than other more popular kinds. They ripen from first to last of December. I find my Pears vary much. Varieties that are good some seasons are indifferent others.

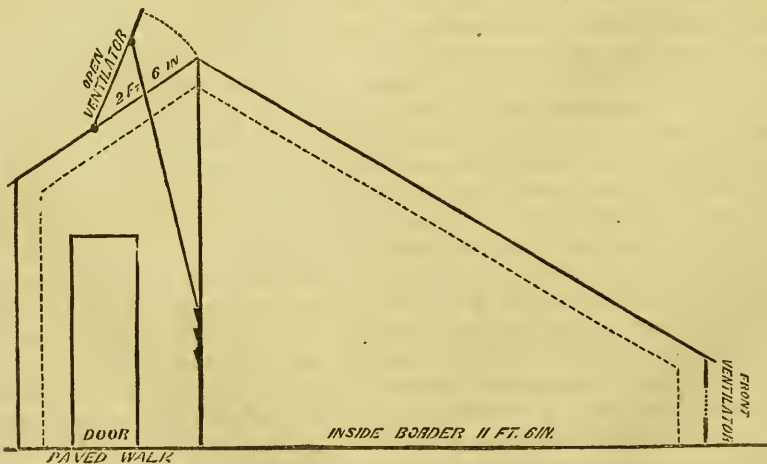
I am almost afraid of touching on the subject of Grapes. So much has been written, and there is such a diversity of opinion on the best mode of culture, and the best varieties to cultivate, that a beginner who reads all that has been written on the subject, would be likely to give it up in despair. I commenced, as I said before, twenty years ago, with the kinds enumerated. After digging out a border, seventy-five yards long and eight feet wide, with the slope of the lawn, I filled in all the bones, skeleton horse-heads, &c., I could gather in the woods, and filled to the depth of near a foot, covering eighteen inches to two feet with cleanings from the wood pile, manure and rich dirt, sand, &c., and erected a wire trellis, eight feet high, to which I trained the vines on the renewal system, as I understood it—that is, allowing two buds to grow, and bending them down horizontally, stopping them eight feet each way, the vines being planted sixteen feet apart. Then next season, or as soon as they had acquired sufficient strength, I trained the shoots, fifteen inches or so apart, up the trellis, and, the second or third year, I had a beautiful set of vines, as regular as you see them in the books. Every thing went on swimmingly. My vines were the admiration of all visitors, many neighbors stopping to see them—everybody wishing to

grow Grapes. "My! what wine you can make! Barrels! you can't possibly use them all!" I was proud of my Grape-vines, that is certain. Well, this was the third fall after planting. Not wishing to crop too soon, or before the roots were well established, I cut back all the first season's growth. I had now got fairly started, cutting every alternate cane to one bud, leaving the others the height of the trellis for bearing. The following spring the buds burst finely, and set many fine bunches, about half of which came to perfection, the others dropping or not ripening. The only drawback was in the cut-back canes, the bud starting and growing weakly for a foot or so—some longer, but none as strong as the former year's growth, or as some from the bearing canes. Although I pinched considerably, I had grapes—some very good ones—but not as many as I expected; and when I came to trim that fall, my difficulties commenced. The intention was to cut away the canes that had borne entirely; but to do that, I was left with wood not sufficient for the coming year. So I had, in many instances, to leave the old canes, spur-pruning them, and cutting back the new wood to one eye again. Thus the beauty and symmetry of my vines were gone. But I did not give it up. I found also that the Bland and Lenoir were too tender to stand our winters; and the former, when it got through, mildewed badly and did not ripen. So they were taken up, and their places supplied with Isabellas and Catawbas. In the course of a few years more the vine lost all kind of shape, and system was given up. Well, I worked on with them, year after year, for fifteen years, the whole lot not producing more than sufficient for family use and an occasional basket to a friend; and as for wine, what was wanted had to come from Maderia or France. A fatality seemed to attend them. The eyes that I wished did not grow, and just as I was looking for a fine crop, either mildew, rot, or some other disease or accident would happen to them. Two Isabellas were planted, and allowed to shade a small yard at the north-east end of the house, which bore and did well without any training or pruning; and many vines I had given to my tenants and neighbors, which were stuck in some corner, or out-of-the-way place, and no attention given them, have borne and still bear bountiful crops. Finally, I dug them up altogether, and commenced anew, with the same and many of new kinds, giving the ground no more preparation than I would for a crop of corn or potatoes, with good success, as thee can judge from what thee saw last fall, not following any special system of training, but al-

lowing to grow three or four canes from near the ground, and tying them fan-fashion, cutting out old wood or new wood, as seemed best, and not having the trellis more than seven feet in height, or within easy reaching distance. Such I believe to be the true plan. My trellis is made by planting eight inch round chestnut posts eight feet apart, to which is stretched wire fourteen inches apart, and held to its place by driving in eight-penny wrought nails, and bending them over the wire—a very cheap, simple, and durable method. Among the kinds that pleased me most were Delaware, Concord, Catawissa, Hartford Prolific, and the Grape thee did not know, resembling the Marion, got for Union Village, ripening nearly with Hartford Prolific, and hanging good longer than any Grape in my collection. Many of the other new kinds bore well, ripening their fruit; but we cared very little for them, or, in fact, for any other, so long as the Delaware held out.

Having been so unsuccessful with out-door culture, six years ago I put up a small lean-to graperly, twenty-four feet long by eleven feet wide, two feet high in front and ten feet back, with sliding sash; fixed roofs not having been introduced much at that time, having doors to let down in the front, in which I planted eight vines, viz: one Syrian, one Black Prince, one Frontignae, and five Black Hamburgs, one foot inside of the front, and as many of other kinds along the back, which, however, were all taken out after the second year. The space covered by the house, as well as six feet in front, was taken out three feet six inches deep, the bottom sloping to the centre, where was dug

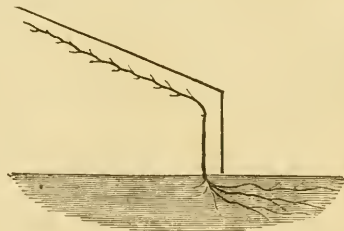
a well three feet deeper to limestone rock, upon which was spread one foot of bats, &c., insuring complete drainage. It was filled with a compost, composed of sods, manure, broken bones and bonedust, charcoal-ashes and sand, in the most approved plan, as recommended by Chorlton and others. For two years, taking Chorlton as my text book, I followed it to the letter (and, as far as I know, it is still the best guide; and the beginner, who has time and leisure to carry out his instructions, will not be misled and is certain of success); but for the past three years, having less time to spare, I have pursued a somewhat different course. Not having room for all the varieties I wished, I added, two years after, sixteen feet to the house, similarly constructed, but without preparing any border, either inside or out, merely giving the common garden soil on which it was placed a thorough digging, and putting a few cart-loads of road sand to bring it to a level. In this I planted Muscat Hamburg, Golden Hamburg, Bowwood Muscat, and Zinfindal. Not liking the manner of ventilating, on account of the rain falling on and running down the vines, which often occurred when the sash was down eighteen inches or two feet, and not having sufficient length of rafter, I took off the back boards, increasing the width of the house four feet, making a back pitch, sections of the roof of which form the ventilators, which, when fully open, gives two feet six inches, the whole length. It is so constructed that, by means of a stick or rod, the vent can be regulated from one inch to two and a half feet, and when partly up, little or no rain or wind can enter, and what does, runs down the back wall. See diagram.



The first season one shoot was allowed to grow. Two-year-old vines being planted, and cut back to one or two buds, which, by fall, reached to the top of the house, which, at pruning time, was cut back to five feet, disbudding all but seven eyes, leaving three at the top and two pairs equi-distant below. The next spring the buds burst and grew finely, the topmost one being trained up as the first season. At the second pruning I left two feet on the main cane, and cut back arms to one bud. The same course has been pursued to the present time, the main cane being sixteen feet long, with arms fourteen inches apart from within one foot of the ground. At each pruning I cut to the first eye, and sometimes got one from the original base, few of the old spurs being more than six inches from the main stock, many not three inches. I cut back to the first bud in new wood, let it be good or bad; for if I find it starting weak, I do not crop it, and thus get a good one for next year; and whenever I get a growth from the base, I encourage it as much as I can. These sees I make the bearing cane produce the bud for next year's bearing, so as to have fewer canes to fill the house; and if there is not so much foliage, it is longer, many leaves measuring eight inches or more. I have no rule as to pinching, but stop the bearing branches from eighteen inches to two or three feet, and the laterals above the second or third leaf, but never taking them out entirely. If the foliage gets too dense, I take out shoots here and there at all periods of their growth, without any disadvantage. At times, after two or three weeks of neglect, entering the house only a few moments a day, I have made such wholesale slaughter among the leaves and branches, that I apprehended evil consequences, but none have, as yet, followed, which makes me think Grapes are not such delicate, tender things as some writers would make us believe. The plan I have pursued, as regards ventilation, is rather novel, and suits a lazy man, or one having a good many things to occupy his time and attention. When I begin to open ventilators, I rarely, if ever, close them again in rain or storms—that is, after all danger of frost is passed. After the leaves are well expanded (say toward the middle of May), I open about two inches, the whole length, not closing at night, and as the season progresses and gets warmer, the space is increased by degrees, until the maximum (two feet six inches) is attained, where they remain stationary till hard frosts in autumn. Much labor is thus saved, and I find everything works better than when I closed at nights and during rains and storms, and having lit-

tle or no rot, cracking, and few bunches of "Red Hamburgs." The front ventilators I never open until after the Grapes are ripe, or nearly so, and I do not know that they are of much or any use. Syringing was resorted to frequently in the early stages of growth, but only occasionally afterward, and at no set times, but as leisure afforded. After they began to color, it was discontinued entirely. The four vines planted in the extension, and where there was no prepared border, have steadily gained on the others, until now they are as large, and the past season fruited as great, if not greater, weight of Grapes, as thee witnessed.

My expectations were, that the roots would, of course, take possession and occupy the inside border which was so elaborately prepared; but to my astonishment, when I came to examine, after four years' growth, (and each year it had been mulched and forked, and watered with liquid manure, &c.), I failed to discover any roots at all; and what had the first season started and grown to some size, had decayed, leaving only a foot or two in length from the collar, some as large as the finger. I have since taken out one foot in depth of the inside border, without finding any roots, which, at the time of planting, were spread in all directions, and which, the first and second summers, grew vigorously, but afterward dwindled away, and finally died, the whole nourishment of the vine coming from and through those roots which struck outside, which now measures from one to two inches in diameter. They do not stop and spread in the good, rich border outside but push straight through, and I have found them thirty feet from the house, cruising about among the beets and onions, and in the grass borders, in which they seem to delight.



As to the yield annually in pounds, I cannot give a definite answer, as I never weighed them; but from estimates made by myself, and others who were capable of judging, I set down the average product of each vine for the last four years at ten pounds, which is, I am satisfied, below the average yield, throwing out all defective and partially ripe bunches. This year the crop would average eigh-

teen pounds, giving me quite over two hundred pounds in the house.

Thus my yearly crops, for four years, amount to one hundred and twenty pounds of superior Grapes, ripening from the first of August to the middle of December, without any fire-heat, and with less labor and not more attention than I bestowed on my old seventy-five yard trellis of Isabellas, Catawas, and Elsinboro's, which never yielded, annually, half the quantity. After the first expense of building and planting, and the first two years of growing, during which it is necessary to keep a pretty close watch as to ventilating and syringing, &c., to preserve a suitable temperature, as the heat is very great until the house is full of foliage, very little labor is required, and the time many people spend in smoking their after-breakfast cigar would be sufficient for all the want of your twelve or fourteen vines.

From the experience of five years, I find the necessity of rich-made borders, extra drainage, and constant watching to be worse than useless, as better flavored, richer colored, good sized bunches can be grown without them:

Were I to erect a graperly, I should select a spot where the water does not lay, or where it freely passes off, and if such a location cannot be had, lay a drain all around it, dig up the ordinary garden soil, and if inclined to clay, incorporate a few cart-loads of road sand, and where it can be had, a little of the surface from a woods. This is all the border I would make.

After planting, mulch the ground six inches deep, with manure from the horse-stable in the fall. Cover the borders with the same, and the following spring rake off the strawy portions, and fork in the fine manure, and as the season advances, mulch pretty thickly with grass, the first mowings of the lawns. This practice or routine to be continued from year to year, without fear of exhaustion, the object being, among farmers, to get good, well colored, high flavored grapes, and plenty of them, without regard to getting prize bunches of great weight, and I do not think there is any reason why every farmer and lot owner in the country and about towns and villages should not have their small graperies, and enjoy their pleasant and most healthy fruit; and what might be a labor, at first, to attend to them, would soon become a relaxation and pleasure, and the farmer or mechanic would soon find that it need not rob their business or occupation of any of its time. I have, for several years past, found the graperly a very suitable place to raise early spring chickens, having had them

half grown and fit for market or table almost before most people think of setting their hens.

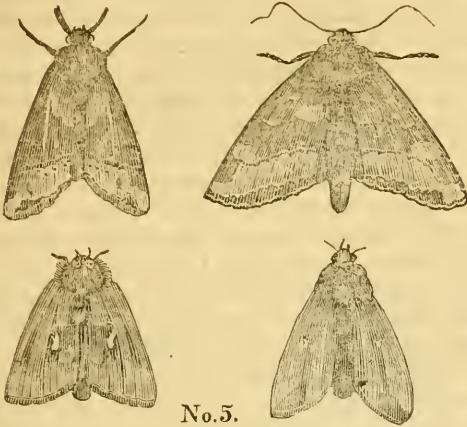
I have never been troubled with mildew or insects, and the only precaution I take, is to wash with a mixture of lime and sulphur every part of the house early in the spring, and throw sulphur on the front plate, and wherever the sun can shine on it. There is one point in Grape-culture of great and paramount importance, and that is, to thin out the berries sufficiently, which can be only done, properly, after some experience. All beginners will, most likely, err in not taking out enough berries. At least two-thirds should be cut away, and I have thought it may be owing to that, and defective and insufficient night ventilation that we see so many badly colored Grapes; for I have noticed that where bunches were left thick and compact, they were the last to color, and frequently are red or reddish green, and watery and insipid. I cannot tell thee why "my Grapes are so black," unless it be from that cause and free night ventilation and plenty of foliage, as I have never yet seen it yet too dense or dark to ripen the fruit well.

The Black Prince is not identical with Black Hamburg, though there is little difference in some respects. Still I like it, and cannot say I prefer, but would not like to be without it. Rot is measurably prevented by free ventilation, both day and night, even during wet and stormy weather. Avoid a close, moist atmosphere. If the house is shut up, even for an hour or two, during a warm rain, the air inside becomes stifling and misty, and the bunches are covered with a heavy dew, which causes decay. Thee asks what kinds to plant. I should say, Hamburgs principally, but certainly a limited number of the Bowood Muscat, Muscat Hamburg, Golden Hamburg, and especially Black Barbarossa. If the intention is to introduce fire heat occasionally in the early part of the season, I would add some others; but I have yet to find a better Grape than the Bowood Muscat (and I have fruited the Muscat of Alexandria and many others grown in pots in the greenhouse), which, with me, is, in every respect, as hardy and certain as the Hamburg.

To conclude, ventilate freely, day and night (top-ventilation); avoid drafts; do not overbear; cut off many bunches, and cut out a *great* many berries on those left. Instead of deep, rich borders, top-dress, yearly, the soil thee has, and I think, with the kinds above enumerated, thee need not fear of success.

PENNSYLVANIA HORTICULTURAL SOCIETY
 DISCUSSIONAL MEETING, AUGUST 25, 1863.
**THE DESTRUCTION OF INSECTS IN GAR-
 DENS AND PLANT-HOUSES.**

[Continued from page 298.]



No. 5.

No. 5 is a group of "Cutworm" moths, very injurious, in their larva state, to vegetation in general.

To the *Nocturnia* belong the great body of those insects which, in their larvæ state, are usually denominated "Cut-worms," and "Caterpillars," and therefore any means that is calculated to destroy these *moths*, as they fly abroad during the night, will be an effectual remedy against the depredations of their destructive progeny, at a later period of the season. As many of these worms bury themselves in the earth and there survive the winter, only to appear and cut off the early vegetation of the succeeding spring, the destruction of the parent moths the previous season should be attended to; and this vigilance should be continued simultaneously, from early spring to late autumn. The cut-worm and caterpillar moths are preyed upon at night by bats, and at twilight by nighthawks and other animals; but these natural remedies are not sufficient for their extermination, where there is a great redundancy of the insects, and a scarcity of these counteracting means. Unfortunately for us, too, we do not allow the full force of the natural remedies which exist among us, for the destruction of noxious insects, to exercise their powers in this direction, for the bats we mercilessly destroy or wantonly persecute; the nighthawks and other birds are treated with as little consideration by many persons, and the predaceous beetles, also, are intentionally or unintentionally destroyed. Artificial remedies must therefore be resorted to, to destroy these moths. Some recommend fires to be kindled,

and to be kept burning during the night, in such gardens and inclosures are seriously infested. Others recommend a bright light, surrounded by a glass globe, or gauze, or fine wire screen, and a tub of water standing under it, into which the insects fall in great numbers, by flying precipitately against the globe or screen. However effectual these remedies may be in the main, they are still open to some objection, for the reason that they not only destroy the noxious insects attracted by them, but also the carnivorous or predaceous kinds that are pell-mell in pursuit of them; and thus they, both friend and foe, find a common grave. There is, however, this consoling consideration connected with these remedies: If *all* the noxious insects are destroyed by means of them, we can well afford to lose the predaceous ones, whose "occupation" will of course then have been "gone." Still, some discrimination, if possible, should be made in the destruction of insects, for few of us can realize the immense numbers that daily fall a prey to their natural enemies in the animal kingdom.*

A very important auxiliary aid, as a natural remedy for the destruction of noxious insects, is furnished by the Spider tribes, who feed exclusively upon insect food. Without tolerable close observation we never know any thing about the great numbers of spiders that inhabit the houses, the gardens, the fields and the forests of our country, and the world at large. Some of these spiders are very prolific, and during the year produce a very numerous progeny, all of whom are provided for from the great storehouse of nature,—all of whom demand animal food, and are persevering in their demands.

If we take a stroll into the country at this season of the year, early in the morning, before the dew of the preceding evening and night has been absorbed by the heat of the rising sun, we will discover by the wayside in the grassy fields, and through the woodlands, as far as the eye can scan in every direction, a vast number of spider's webs low down on the earth, of a concave form,—made concave by the superabundance of dew, which like a shower of minute peare, has fallen upon them, all seeming to have been constructed the previous night. In the centre, or at one side of these canopied webs, is a funnel-shaped aperture, down at the narrow end of which will be found a spider, the picture of perseverance and of patience, inviting the artless denizens of the insect world into his fatal "parlor." We may walk or drive for miles upon miles through the country, on dewy mornings or misty days, without finding the number of these insect traps growing any the less, and when we contemplate the number of victims that must daily fall into them, we may congratulate ourselves upon the bountiful provision that the realm of nature furnishes, to continue its own equilibrium.

Last year, when the "Oat Aphis" (*Aphis avænni*) was so abundant in all the oat-fields of Pennsylvania, reducing the oats in weight from its standard of 33 pounds to the the bushel down to 16 and 17. I observed a more than usual number of spider's webs woven between the fence rails, in which millions and millions of these aphids were captured and destroyed, in their attempts to pass by flight from one field to another, or perhaps blown thither by the prevailing winds. The present season we hear nothing about this insect, notwithstanding the many apprehensions entertained that it might appear even in greater numbers, and would consequently be more injurious than it was a year ago.

All the matured Lepidopterous insects that feed at all, feed upon the nectar of flowers,—indeed, their mouths are so organized, and of such a form, as to preclude the possibility of their partaking of any food except it be in a fluid state. If, therefore, vessels containing sweetened liquid poison were set in gardens and fruit orchards, these moths and butterflies, in many cases, might be entrapped and destroyed; at least this remedy has been effectually tried for the destruction of the Bee moth.

But, I confess I have more faith in the localization of birds, toads, and bats, in and about gardens and orchards, than I have in the best of artificial remedies, for I have, on more than one occasion, experienced that the former are efficient and constant assistants in keeping in check the hordes of insects with which we are sometimes infested. To encourage these, boxes for Wrens, Bluebirds, Robins, and Martins, in convenient and appropriate places, should be plentifully supplied.

The colonization of some of the larger and more conspicuous of the predaceous insects ought also to be attempted. We have several species of *Cuclosoma* and *Carabus*, that I think might be introduced into gardens and plant-houses with advantage,—at least, species of insects belonging to these genera have performed this use extensively in gardens on the continent of Europe, according to their entomological records, where they have been colonized.

This colonization of insects is not altogether a new thing even in this country, for Mr. George Hensel, an amateur entomologist of Lancaster city, reared for two or three years in succession, the common "Camel Cricket," (*Mantis Carolina*), from



No. 8.

No. 8 is a "Camel Cricket" a species of "raptorial" *Othoptera*. Feeds on other insects and insect larva.

eggs of that insect obtained in the vicinity of the City of Baltimore. He placed the eggs on some shrubbery in Lancaster Cemetery, and succeeded in capturing some of the matured insects for two or three seasons in nearly the same place where he had deposited the eggs. This would seem to indicate that this insect could not only be colonized,

but also localized, which is also a matter of great importance in connection with this subject, especially with those who desire the application of a natural remedy in small gardens and plant-houses.

The third season, on account of the cold weather setting in earlier than usual, these insects did not mature sufficiently to deposit their eggs, and of course the colony became extinct. But, it must be remembered that their locality was a large open cemetery, much exposed to the north-west winds, with little or none of that succulent vegetation that attracts the insect upon which the *Mantis* feeds. In a protected garden, or other enclosure, it might have been far otherwise. These insects might also be introduced into plant houses, but perhaps the greatest difficulty in successfully rearing them there would be the insufficiency of animal food; but this want might be easily supplied, if it was found that the presence of the insect was an advantage in other respects. According to the account given by Mr. Glover, in one of his reports to the Agricultural department of the Patent Office, the Mantis may be trained to receive food from a person's hands: a lady in the City of Washington having been in the habit of feeding them with her own hands in her gardens.

The *Mantis* walks slow, stealthily, and cat-like, over the surface of vegetation in pursuit of its prey; and when it discovers it, it assumes a posture as if in prayer,—hence in Europe they have received the common name of "praying Mantis," (*Mantis religiosa*). In this manner they sometimes remain, as it were transfixed for a long time, intently watching for the approach of any luckless denizen of the insect world that may come within reach of their anterior feet, when they immediately extend those long dentated raptorial appendages, seize it, and convey it to their mouths, and leisurely devour it.

So far as I know, this is the only purely carnivorous species belonging to the Order *Orthoptera*. The "Cockroaches," as before remarked, are omnivorous, and some of the crickets will feed on animal food, when vegetation becomes too much dried or ripened for easy mastication, or when it becomes entirely exhausted. I have on various occasions found the common little "Field Cricket," (*Acheta vittata*), in great numbers, greedily feeding upon the carcass of a recently slain animal, and so intently were they occupied in these carnivorous banquetings, that it required a persevering effort to drive them away. Some of the crickets also secrete themselves in burrows from whence they sally forth to seize and destroy other insects that may happen to be passing by.

Among the insects belonging to the Order *Hemiptera* are also a number of predaceous species that might be introduced into gardens and plant-houses with advantage, although this order includes none that are *mandibulated*,—that is, having mascatory organs,—but on the contrary, only those that are *haustillated*, or provided with a sucking apparatus, with which they have also the power of perforating piercing the substances upon which they feed. These predaceous Hemiptera belong pretty much all to the family *Reduvius*, to which also the common "Bedbug" is allied.



No. 6.

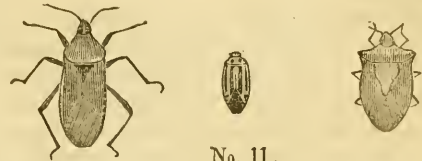
[*Prinotus novenarius*.]

[*Reduvius raptator*.]

No. 6 is a group of "raptorial" *Hemiptera*. Insects that are carnivorous in their habits, capturing and destroying other insects.

A very common and conspicuous species of these insects is found in almost any locality south of Middle Pennsylvania, and is quite abundant some seasons in and about Philadelphia and Lancaster. I allude to the *Prinotus novenarius* of entomologists, which I have often observed, together with kindred species, engaged, during the months of July, August and September, in the capture and destruction of other species of insects. A much commoner species, however, the *Reduvius raptator*, is often found in gardens, especially in those that are bordered by forest lands, or in the vicinity of wild shrubbery. Recently I have found this insect in my own little garden in the city of Lancaster, where nothing is cultivated but a few flowering plants. I consider this insect a valuable aid in destroying aphids, although its aid may not be quite so important as that of some "Lady-birds" or "Lace-wings." Last season I observed an individual of this species (*Reduvius*) located upon a China Aster, which was growing only a few feet from my kitchen door, where it kept the plant entirely clean of all other insects, not even allowing a common fly to intrude upon its domain with impunity. Occasionally as I passed, and finding him on the keen look-out, I would place an insect within the range of his vision, just to observe how effectually he would steal up to it, pounce upon it, and devour it. There are a

number of other species of these *Reduvius* that prey upon insects, one of which is a common, slender, greenish insect the *Mydocha viridis* of entomologists, which I have often observed capturing moths and beetles, especially a common red wood-boring beetle (*Tetraopes tomator*). These insects must, however, not be confounded with some very destructive species of the same order, among which, conspicuously, is the common and offensive "Squash bug," or *Coreus tristis*.



No. 11.

No. 11 is a group of exceedingly noxious *Hemiptera*, including the famous "Squash-bug."

The *Pentatomians*,—the family of *Hemiptera* to which the universally detested Squash-bug belongs,—as well as their suctorial relatives the *Aphids* and the *Cocci*, bear a near enough organic relation to the Reduvians, to be confounded with them, by those who have paid no attention to the peculiarities of their structure respectively. The anterior feet of all the predaceous *Hemiptera* are more or less enlarged, and in many cases also conspicuously toothed or spined. This development of the anterior feet is in accommodation to their carnivorous proclivities, by which they are enabled to seize and hold a proportionately large insect, whilst they occupy themselves in sucking out the juices of its body. Wherever these raptorial appendages are found in an insect, we may safely infer that they are intended for some special purpose in its economy and habits.



No. 7.

No. 7 is a "Mole Cricket," an insect that burrows into the earth and is destructive to the roots of plants.

There is, however, another, form or developed feet in insects, which must not be confounded with the raptorial, namely: those having the anterior feet "palmated," as in our common "Mole Cricket," (*Gryllotalpa brevipennis*), which uses them for the purpose of burrowing into the earth. These Mole Crickets, by-the-bye, I may as well remark

in this place, are great enemies of vegetation: not only by burrowing into the earth and disturbing the roots of plants, but also by cutting off and destroying them with their sharp mandibles. If they were an open and exposed enemy, we should be the better able, perhaps, to apply an artificial remedy for their destruction or extinction; but this is not the case, and therefore they are sometimes allowed to continue their depredations with comparative impunity.

The same insects that would be beneficial when colonized in a vegetable or flower garden, would also be equally so, in many instances, in a plant-house, although it might be more difficult to keep them from perishing from the want of food, inasmuch as their range would be more circumscribed in an enclosure of the latter kind, than it would be in the former. Among the colonists to be introduced into the plant-house, I would recommend both the larva and the mature insect of the various species of *Coccinella*, commonly called "Lady-birds."



No. 9.

No. 9 is a group of noxious "Lady-birds." Both the larva and the mature insect destroy vegetation, especially melon, squash and cucumber vines.



No. 10.

No. 10 is a group of "Lady-birds" that are beneficial to vegetation, inasmuch as both the larva and mature insect feed upon the aphids (1 larva, 2 pupa, 3 imago.)

Some of the insects, however, usually called Lady-birds, are destructive to vegetation, both in their larvæ and mature forms; but those properly restricted to the genus *Coccinella* are also aphidiphagus, so far as I have been able to discover, although in the total absence of aphids, I have observed some of them under circumstances which led me to suppose that they were feeding upon the pollen of early spring wild-flowers. A large yellow, black-spotted species of Lady-bird found on pumpkin, cucumber and melon vines, I know now to be certainly destructive to vegetation, both in its larvæ and imago states, although it had been long considered and classed with the *aphidiphagus*. This is the *Epilachna borealis* of entomologists, but commonly called the "Northern Lady-bird." Many

years before I paid any attention to the subject of Entomology as a Natural Science, I had observed the marked depredations of the insects belonging to this species, to the cucumber and melon vines; and yet books on entomology continued to class them among the beneficial insects, and so, from a deference to the testimony of these books, I had begun to regard all the results of my early experiences in the matter as a mere hallucination or a myth, until subsequent ocular demonstrations confirmed my earlier observations. It will be a part of the cultivators duty to learn to distinguish between these insects; and the large size and conspicuous markings of the destructive individual above named, will enable him very readily to detect it when he sees it. The larva also differs sufficiently from the larva of the *Coccinellans* to enable any one to recognize it at a glance. As I have not a specimen of this larva to exhibit, it may be necessary to say that its color is yellow, and that the whole body of it is covered with short, stiff, erect bristles or hairs.

The predominating color of the larva of the genus *Coccinella* is a black, or brownish black, with yellowish or reddish spots, and their bodies are more narrowed and flattened, the abdomen tapering to a point. On one occasion, many years ago, I observed this insect, (*E. borealis*), in tens of thousands, destroying melon vines down to their roots, after which they disappeared, and I never, since that period, have even observed a thousandth part of them, anywhere or at any time.

[To be continued.]

WALKS.

BY MR. A. S. MILLER, ALTON, ILL.

In the construction of walks, three things should be kept in view: freedom from grass, dryness and durability. In order to effect this, the walk should be excavated to the depth of at least 14 inches. If the cost is not to be taken into consideration, tile may be laid; afterwards the trench may be filled up with fine Macadamized material; top off with good river sand, making the surface as level as possible, to prevent the wash of rains, or, what is much better, lay bricks.

A walk should approach the house in easy curves, avoiding right angles and straight lines wherever practicable. Near the margin of the curves, upon the concave side, should be planted irregular groups of shrubs or beds of flowers, thus expressing the idea that the walk is compelled to circumvent the groups, &c.

On places of moderate size, the gateway should

be in that part of the enclosure nearest town. The reasons for this are obvious: it saves the time of the proprietor in going to and from business; again it saves visitors the inconvenience of going the length of the premises in order to reach the gate.

In large places every walk should have some object in view: as, for instance, a summer house, or an observatory; or else they may lead to the various points of scenery that the proprietor may wish to exhibit, again returning to the house from the opposite direction in which they started.

CULTIVATION OF THE AURICULA.

BY POLYANTHUS.

Almost all I have seen in the *Gardener's Monthly* in reference to this beautiful spring flower, has, I think, been derived from foreign journals; perhaps a few notes on actual treatment here may be acceptable to your readers. I do this with more pleasure first because I am tolerably successful with them; secondly, because I love them, and, thirdly, because I think our climate requires a different treatment to any thing they receive in foreign climates.

The Auricula is a native of alpine summits in Europe, and can endure any amount of cold, provided it is a *moist* cold. So also will it endure any degree of our summer heat, provided it is not a *dry* heat. If they can get under snow in winter they live admirably in the open ground; or, if not snow, dry leaves, with a piece of board on the top to keep them from blowing away, does nearly as well.

The great trouble is our dry hot summers. I formerly tried every way out of doors,—under the shade of trees, under walls and fences on the north side,—but could not succeed in keeping them alive. They seemed to dwindle and rot away. I now keep them all summer under a hotbed frame, and they do admirably. The glass is whitewashed to keep out the direct sun's rays, and by being kept nearly always closed, there seems to be the necessary moisture in the air to make them feel content away from their mountain home.

Kept in this way, mine begin to show signs of growth in October, when I repot them. I grow mine in four and five inch pots; and they have been in the same pots for a great number of years; but not in the same soil, for I repot them annually. I shake the soil entirely away from the plants, and repot again in the same pots, putting in only new earth. The soil is the rotted surface soil of an old woodland: I do not use the leaf-mould exactly, as it would perhaps be called; but the grassy sod, which we find along the borders or in the open

places in the woods. If possible I like to have it one year old, with the sod decayed before using. I do not put any manure with this soil, finding it rich enough without.

The Auricula crowns are like old strawberry plants, and the young roots every year come out only near the base of the leaves; and as the stems supporting these leaves gradually lengthen, it is necessary at every repotting to set the crowns about a quarter of an inch lower in the earth than they were the year before. As soon as the plants are repotted they are set back again in the cold frame under the sash, and remain during the winter. All the care they require in winter is to be protected from hard frost, not that the plant needs it, but to keep the pots from being frozen by frost. In March and April, if there is any thing sweeter or prettier than my Auricula frame, may I be there to see.

I have had excellent success in raising plants from seed, and if you think it worth while to have it for your readers will do so, if you think you can get some of them to give me their experience with some of their favorite flowers in return for mine.

[No very hard condition,—we are sure some of our friends will respond. In the meantime get ready the article and oblige us.—Ed.]

ORIGIN OF THE CLINTON GRAPE.

BY J. W. C.

I have never seen any account of the origin of this well-known variety in the Horticultural journals, and send it to you, thinking you might perhaps think it worthy of a place in your columns. It is from the *Elimra Advertiser*:

“The well-known ‘Clinton Grape,’ which is described in the fruit books with no accounts of its history, originated in the horticultural amusements of a student of Hamilton College. The original Clinton Grape vine is now growing over a tall elm tree on the east side of Dr. Curtis's house, formerly the residence of Dr. Noyes, on College Hill. It was planted there in 1821, by Hon. Hugh White, of Cohoes, who was then a Junior in College. He had planted a quantity of grape seed, two years before, in his father's garden in Whitesboro. Out of the hundreds that came up from this planting, Mr. White selected one that looked promising, and planted it east of Dr. Noyes' house, with whom he then boarded. This seedling vine proved to be a rampant grower and wonderfully productive. Since his graduation Mr. White has been a worthy member of Congress, yet there is no act of his public career ever brought him more satisfaction than the planting of that seedling grape-vine.

The Gardener's Monthly.

PHILADELPHIA, NOVEMBER, 1863.

✉ 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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OUR MAGAZINE FOR 1864.

Again we approach another volume. When in October, 1858, we issued our first number as a specimen of what we should produce the first of January following, Horticulture was prosperous with an united country. When the rebellion broke out, and so many magazines sunk beneath the storm, we did not expect to survive it. But we underrated the success of our own efforts. We started to supply, as we thought, an *existing want*. We did not wish to compete with the excellent Horticultural journals already afloat. Our object was to furnish knowledge, at a cheap rate, to those whose limited means prevented them from subscribing to more expensive journals. But we were destined for a better field of usefulness. Our journal not only became an essential to every horticulturist, but we have been the means of increasing the taste for horticulture to so great an extent as to be able to maintain a respectable appearance, in spite of the enormous advance in the price of material and the loss of so many subscribers, North and South, that we had at the start. We sowed the seeds of horticultural taste, and the crop of new subscribers have supported us in our season of adversity.

We trust we shall not be suspected of a desire to detract from the merits of any of our excellent contemporaries when we say, that Horticulture has never been so popular as since the establishment of our magazine. In one single idea our influence is apparent all over the Union—in the universal employment of fixed roofs for graperies and green-houses. Although the idea was a very old one, being described in Loudon's Encyclopædia; and although it had been employed in a few instances in this country in curvilinear vineries, it was the *Gardener's Monthly* that brought it into universal appreciation with us for all sorts of glass houses.

We refer to this, as we said, as a single instance. Most of our readers will be able to add to the list

of items bearing on the advancement of the art of gardening.

At the present time Horticulture is more popular than it ever was with us. Every exhibition of fruits or flowers, that we have so far heard of, proved a success far greater than the projectors anticipated; and what is more singular, at our agricultural fairs, where fat stock and fast horses once held the post of honor, the glories of the past are being eclipsed by the modern floral departments. In all the fairs we have attended, fruits and flowers, formerly but a poor "show" at such places, have been magnificent, and not unworthy of grand Horticultural exhibitions in times past.

No pecuniary consideration keeps the Editor at his post. His business is his nursery, and the time he spends on the *Monthly*, and the information he is alway ready to give through its pages, would be far more profitably spent in his regular business. He refers with pride to the fact, that for the whole period of the existence of the magazine, he has never once, directly or indirectly, referred to his business in its pages; and even in the advertising columns, where all is common ground, he has not sought for or received any advantage over other advertisers from the publisher.

We shall persevere, as heretofore, to help on the good cause; and, as heretofore, expect the assistance of all Horticulturists, both in gaining new subscribers for us and communicating their experience and observations for our pages.

The publisher depends almost exclusively on Horticulturists to make the paper known. He believes he could extend its circulation in a slight degree by the generally employed system of extra inducements, in the shape of washing machines, new fruits; or perhaps a fiddle or a bugle-horn to subscribers; but he prefers, as heretofore, to rest the magazine on its merits alone, and trust his friends will send us soon as many new subscribers for volume six as seemeth good unto them.

THE TUBEROSE.

In reading through Mr. Rand's new book on flowers, noticed last month, we notice that he wrote of the Tuberose as the "Tube Rose." Other authors of Mr. Rand's intelligence have previously used the same term; and as botanists are also as evidently wrong in their account of the derivation of its scientific name—*Polianthes tuberosa*—a few remarks on the whole subject may interest our readers.

Long before the days of Linnæus there were at-

tempts at scientific arrangements of plants, and many very fine collections made in gardens, particularly in Germany, where gardening was in a high stage of estimation long before it was in England. Loudon gives late in the century between 1600 and 1700 as the date of the introduction of the Tuberosa into England, but it was known in Germany long before. There is a description of it in Linschoten's voyage, by Paludanus, who says Simon de Torva introduced it to Europe from the East Indies prior to 1594.

One of the finest European gardens about this period was that of Heister, at Helmstadt, in the Duchy of Brunswick. Heister published a little book on his collection entitled "Index Plantarum Horti Helmstadt," and in this he describes his plant as the "Tuberosa," for in those days plants had no need of more than one name. That the name was derived from the Latin—*tuberosa*, a throwing out of bulbs—we think more probable than that it should be derived from *tubes*, a tube, as Tube rose would imply. There is no evident application of such a name to this plant; and it may be urged against the first supposition that there were other Tuberosa plants in cultivation, probably, that would render such a name no distinction from any other plant; but an examination of the list of popular flowers grown at that time seems to show that no one suckered out so much as this one, and gives to the supposition that its name originated in that way, an air of great probability. We now come to the generic name *Polyanthes*. When Linnæus arranged the vegetable kingdom into genera and species, he applied this name to the Tuberosa, retaining Heister's name of "Tuberosa" as its specific name. In his "Genera Plantarum," he does not account for his names, and in this instance many authors seem to suppose that the great father of botany did not know what he was doing, and correct him by spelling the name *Polyanthes*. Wood, for instance, in his "Class Book of Botany," writes it this way, and then says it is derived from the Greek $\Pi\alpha\lambda\gamma$, many, and $\nu\ \acute{\alpha}\theta\eta\varsigma$, flowers; but in spite of the fact that this is not Linnæus's orthography, there is nothing in the nature of "many flowered" that could be applied specially to the Tuberosa. It is not Wood alone (indeed, his work is made up principally from the writings of others) who makes this error. Loudon, in his "Encyclopedia of Plants," though he spells the name correctly, gives the same derivation as adopted by Professor Wood.

There is no doubt Linnæus meant it to be as he

wrote it, and it is interesting to know what he really did mean by the name.

We gave a few years ago a very interesting chapter, from a German correspondent, on the appearance of light in plants, which it seems was early known to Linnæus, and that the Tuberosa was one of the plants he noticed as emitting light under some circumstances; and it is quite possible he had in his mind the plant described by Pliny the younger as *Polion*, which was one of the curiosities of his celebrated garden near Rome. This plant had pale, gray leaves, when first seen in the morning; at noon they changed to a purple color, and at sunset was of a pretty blue. What plant precisely Pliny meant by *Polion* we believe has never been definitely ascertained. It could not have been our Tuberosa, if it is a native of the West Indies or South America, (for indeed even its native place is a disputed point,) as plants from these countries were, of course, unknown to the Romans; but as the Tuberosa flowers open of a beautiful waxy-white, and fade away with a slight rosy-purple tinge—this, in connection with the light-emitting property noticed at sunset, may have decided Linnæus to make of this his "Polion" flower.

But, after all, it is most probable that the name was derived from $\Pi\alpha\lambda\gamma$, grayish-white, and $\nu\ \acute{\alpha}\theta\eta\varsigma$, flowers; for the grayish waxy-white flowers form a peculiarity that particularly fixes itself on the Tuberosa of all the flowers in the garden. Sweet, in his "Horticultural Botany," supposes it to be derived from $\Pi\alpha\lambda\gamma$, a town, and imagine the reason to be, that it was such a great favorite for cultivation in towns and cities; but this, we think, is a labored and far-fetched explanation.

We have said that its history, like the origin of its name, seems sunk in obscurity. English authors give the *East Indies* as its habitat; some particularizing Ceylon as the place where it is found abundantly. The "Botanical Register" gives the *West Indies* as its locale, while the authors of "Flora Peruviana" assert that it is a genuine wild plant of Peru. Ruiz and Pavon refer to it as a South American plant; while a note in Dr. Pickering's account of Capt. Wilkes's explorations, makes it very common in cultivation in Egypt for a long series of years. As the Egyptians have not been famous as plant hunters in distant lands, and we should judge from what we read that it was common in that benighted country before it was common in Northern Europe; we have strong doubts about its origin on the Western continent. We strongly suspect that if proper research were devoted to the subject, the Tuberosa—the pride of

modern beaus and beauties—would be found to have had its place also in very ancient civilization.

LESSONS FROM THE PAST.

We are interested in noticing how difficult it is to get parties to reason calmly on Horticultural questions that happen to run counter to cherished convictions. People do not take time to understand one another's arguments, but feeling at the outset the other must be wrong, they seize on some minor point or obscure expression, and, by giving it prominent importance, demolish, as they think, the "opposition" views.

When we undertook, in the very first number of the *Monthly* published, to recommend orchards, as a rule, to be kept in grass, we did so from long experience of its being conducive to the general health, productiveness, and profit of the orchard. There are many excellent Horticulturists who differ from us; but we have invariably found that they do not understand our views. Many bring up some facts which we would deny no more than they. That they will all ultimately agree with us we have no doubt, and so leave the result to time.

Time has done more than argument for us in many preceding cases. The history of the Delaware Grape is a recent example. It was debated whether this had the foreign Grape for an ancestor, or one of our aboriginal varieties—the question assuming an unusual importance, because of the doubt which former experience had cast upon the value of any foreign variety for our climate. We took the view that it was a native Grape, and because of our own knowledge, as we had seen, in botanical excursions in the region of country where the Delaware originated to modern cultivators, wild varieties of Grape, with the form, color, and foliage of the Delaware—of course, in a general sense, and without any of the Delaware's peculiar quality or excellence; but immediately our contemporaries gave it that we had asserted to having "found the Delaware wild;" and, of course, triumphantly refuted us. We left the question at last to time—and now where is there any one who believes the Delaware to be a Grape of foreign stock? Indeed, some of those who opposed us for considering the Delaware a native Grape, now when Dr. Lindley is reviling American natives, are asking him if he ever ate a Delaware!

Going back beyond this time, who of the past dozen years does not remember the "Strawberry controversy?" Mr. Meehan, then gardener at

Springbrook, exhibited some fine strawberries from the open ground, and the committee of the Pennsylvania Horticultural Society gave them a premium as "a handsome dish of Hovey's Seedlings." Subsequently the same exhibitor presented a number of runners raised from these very plants, which by peculiar conditions of heat and moisture had produced perfect anthers. Some were exhibited in bloom, others in fruit—all with no fertilization but their own anthers—but the same committee pronounced them "not Hovey Seedlings." It became a question of veracity about the identity of the plants. Mr. Meehan himself was not present, but his friends took up the matter warmly in his behalf, and the result was, the Pennsylvania Horticultural Society came being nearly destroyed, its usefulness was for a long time crippled, many useful members retired from its councils, and others made ill friends for life—all of this arising from a pre conceived idea that such change was "absolutely impossible." It did not rest with the Pennsylvania Horticultural Society. Mr. Longworth, Dr. Warder, the Cincinnati Horticultural Society as a body, and many others, entered warmly into the opposition; and we do not remember a single journal but Dr. Kennicott's *Prairie Farmer*, Mr. Hanson's *Philadelphia Florist*, and Paschall Morris' *Pennsylvania Farm Journal*, that gave Mr. Meehan any encouragement against the abuse in some quarters, and strong opposition in others, that we received. Here, as in other cases, views that he did not hold were imputed to him, and, of course, easily answered; till at length he retired from the unequal contest, to leave the result to time. He (Mr. M.) contended "that the so-called pistillate and staminate characters were utterly worthless as an *infallible character* to distinguish varieties," and he was charged with asserting, that the distinction, when it did exist, was worthless in practice, and, of course, condemned accordingly. But who now believes Hovey's Seedling may not at times so perfect its anthers as of itself to produce fruit? Possibly a few—but very few. The following from the pen of J. J. Thomas, in the *Country Gentleman*, is now the commonly received view:—

"The half abortive stamens of the Hovey are, commonly, quite insufficient for fertilization; but in some localities, and under peculiar circumstances, the anthers appear to have furnished pollen enough for this purpose. The question arises, do these few pistillate sorts of European origin, which bear better in this country when fertilized than when planted alone, require the same fertili-

zation in their native localities? Or do the altered circumstances of soil, climate and treatment, effect an improvement of the imperfect anthers, sufficient to supersede entirely the use of fertilizers?"

We refer to these pieces of history for no mere personal object. We are not of those easily offended by either a perversion of their arguments, or the most vigorous opposition to any of their views. We expect them, and look for them as the inevitable attendants on all struggles for truth. But we do ask our readers to profit by the lessons they teach; and when they read an essay which seems to oppose some cherished theory of theirs, first be sure they understand the author's position, and then, if they still disagree with him, believe there *may* be a little in it for all.

So will they oftentimes find "something to their advantage" in the most unpromising productions; and the unlucky authors, who toil for other people's benefit, instead of retiring with fear and trembling from kicks and curses, will at last find their profit in the endeavor to be useful, and that where they failed to effect much, the indulgent public took the will for the deed.

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.

WEEDS ON LAWNS.—The following extract from a note of Mr. H. W. Sargent, brings up again a very important question, to which we early called attention. It is in reference to the Crab-grass, (*Digitaria sanguinalis*):

"The oftener I cut the lawn, the worse it seems to be. The frequent cuttings with a machine have the effect of making it ramify in every direction. A single stool will often cover the circumference of a dinner plate; and pulling up three or four of them in proximity, will leave a bare space in the lawn a yard square.

Do you suppose I can get rid of it by letting the lawn grow up into *long grass*, and then, perhaps, choking it out?

I observe that in those places where the lawn is only cut two or three times in a summer, and never very short, that there is little of it; while on the other hand, where a lawn is kept as close as the English grade, it seems to take exclusive possession and run every thing else out, lasting for five or six

weeks, and then gradually disappearing, and the White Clover and Red-top coming back again."

One cannot think of doing without lawn mowers. Not only as labor savers are they essential, but the great beauty of a lawn when under their use, for all the spring and early summer months, compensates for a little annoyance in the fall. It is better to have the Crab-grass with the machine, than the old scythe system without.

Our efforts must be to remedy the evil which follows the mower, and so improve till we reach perfection; and we shall be very glad to receive the suggestions of any of our correspondents who may have had experience in the matter.

When we saw the evil coming some years ago, and cautioned our readers to prepare for it, we expected the trouble would be with the weaker growths, which would receive encouragement in proportion as the stronger were checked. Suffering the grass to grow would smother this out, but seed enough would probably remain in the ground to produce a new crop when we return to the close mowing system. The same would be the effect with the Crab-grass. We think smothering by encouraging stronger growths, and hand-weeding should go together. At all events, those who have tolerably clean lawns, should take to hand-weeding in time.

SEEDLINGS—C.—"Are your remarks in the last *Monthly*, quite orthodox, as applied to new seedlings of all kinds? and would you not make an exception in regard to "grape" seedlings? So far as my experience goes, the first, and often the *second* bearing of a seedling grape, is so insignificant and inferior to its subsequent performances, as to afford hardly an index of its future character. Both observation and experience teach me that grape seedlings improve for a series of years after they commence bearing; and that it usually requires a considerable length of time before a new grape is really developed. I think the Concord grape is better than it was upon its first introduction; and I have been informed by gentlemen who have experimented largely in raising seedling grapes, that this rule of gradual improvement is nearly universal.

My own opinion is that all young fruits require some years after first bearing for *perfect* development. Afterward, they often decline; but I have supposed this was in consequence of improper treatment, uncongenial soil, grafting upon unhealthy stocks, or other kindred causes.

I have as hearty and inveterate a dislike for "humbugs" of all kinds as you *can* have; and of

the general justice and applicability of your remarks I have no word to say. And if your experience leads you to a belief contrary to mine, I am perhaps more likely to be mistaken than you."

[The above remark, from one of our most intelligent correspondents, is exactly in accordance with what we ourselves have taught. Fruits frequently get better, and as frequently get worse on a few year's trial from their first bearing.

True, in our article we confined ourselves to alluding to the cases where they get worse; and this we did because we were advising those who thought they had a good fruit, to wait and see if it would stand the test of time, before sending it out. The chance of a man, who has a seedling that is worthless, sending it out on the theory that it may get better, is a small one. It did not enter our heads to advise him to wait before selling.

We were not, probably, clear enough in our former article,—at any rate we cordially endorse all our friend says to us.]

CELLARS—"Old Subscriber," *Jamaica, L. I.*—The following note we print in full:

"In the last number of the *Monthly* you say, 'if I had but one choice between a greenhouse and cellar, I should choose a cellar,' and I fully agree with you in the choice. Now, I have two greenhouses, and no cellar, and to make things worse, I do not know precisely how to build one, nor do any of the mechanics in this vicinity. Could you not give a short article in the November number? it would still be in time to build one this fall.

I have many large plants of Oranges, Neriums, Brugmansias, Abutilons, Figs, etc., etc., that take up too much room in the house, and a good cellar would be just the place for them. I should like a fair sized one, say thirty feet long, and wide in proportion. Please give a plan in November number.

[In almost all gardens, there is some out-building or workshop erected for store rooms, tool sheds or some such purpose. We should make our plant cellar under some such structure. This should be seven or eight feet deep, beneath the floor of the building, and which also forms the roof the cellar. There should be an entrance from the shed floor to the cellar by trap door and ladder, and another entrance from the outside so as to let down the plants by rope to the cellar. This outside entrance should have a sloping door, set at the same angle as a hot-bed sash to throw off the rain,—beneath this it should have another made of glass. When the weather is not very cold, the outer door may be left open, and some light let into the pit. Plants, how-

ever, when kept just above freezing, do not grow, and require little light. The walls of the cellar should be of stone or brick, whichever is most convenient. It forms the foundation of the building above. We have a cellar of this class that never "freezes." In it we keep Oranges, Lemons, Oleanders, Rhododendrons, Fuchsias, Dahlias, and many others']

ÆNOTHERA LAMARCKIANA.—In a former number a correspondent made an enquiry respecting this plant, complaining at the same time that with him it had proved no better than *Æ. biennis*. We stated that it was larger and bushier than the common form of Evening Primrose: but so much like the common one that we did not expect it to be very popular. Our opinion was based on the writer's knowledge of the plant in a wild state. It is familiar to most North American botanists as the *Ænothera biennis*, var. *grandiflora* of Gray's Manual, and in Pennsylvania it is not unfrequent in the district of country from Philadelphia to Reading.

Since we wrote that notice, plants from English seed have flowered in the Editor's garden, and it is certainly much improved by cultivation, and is a very desirable border plant.

It is worth bearing in mind, however, that *Ænothera biennis* is one of the most variable of North American plants; so much so, that many botanical authors have made more than half a dozen species out of it, of which one is this *Æ. Lamarekiana*. This variety will therefore, probably vary from seed, and we may expect to hear of just as much disappointment as was expressed by our correspondent. Seed-growers should be careful to save seed from the dwarfiest and largest flowering plants, as the best security against the degeneracy of what in its best state will be a valuable addition to the flower-garden.

This note is due as well to the facts, as to a review of our former opinion by the *R. New-Yorker*.

HYBRIDIZATION—A. M., jr., *Cleveland, O.*—"Wishing to become well informed on the subject of 'Hybridization of plants,' I would like to obtain one or two good works on the subject, but do not know where to find them, nor could I tell which were the best if found. If you could inform me of any good work or works on this subject, that would give me a thorough knowledge of the art, I would be very much obliged to you."

[The Rev. Mr. Herbert's work on "Amyrillidæ," will give you much valuable information on the subject of hybridization generally. There is no work treating especially on it. The late Mr. T.

A. Knight, of England, wrote many valuable papers on the subject, but they are scattered through many volumes of the transactions of the Horticultural Society of London. Mr. Herbert's work can be had by ordering of any book importer, or of any large Book concern that has connection with such importer. For one who wishes to study the matter very scientifically, much will be found to interest in Darwin's recent work "On the Fertilization of Orchids."]

LAWN MOWERS.—*R. H., Waddington, St. Lawrence Co., N. S.*, makes the following inquiry:

"Can you inform me, through your valuable journal, if I can obtain a lawn mowing machine in this country, and if so, where they are to be had and the price? To keep grass in neat order with a scythe requires an experienced mower and takes a good deal of time. I should think a small machine, if it could be had at a reasonable price, would meet with ready sales,

"I enclose a circular I recently received from England in answer to some inquiries I made as to the price of the English machines; but the price, including all the expenses of importation, would place them out of the reach of ordinary purchasers in this country."

[Lawn mowers, of American manufacture, are in common use. We have seen them for sale at Landreth's, in Philadelphia, and suppose they can be had through any of the large horticultural stores of Philadelphia, Boston, New York, or Cincinnati.]

OVER-BEARING OF GRAPE VINES.—*G. W. C., Cincinnati, Ohio*, writes:

"Would you please give the explanation of the fact that Grapes suffered to over-bear do not ripen their fruit. My Catawbas promised remarkably well in the early part of the season, but few on a bunch mature. My gardener says if I had allowed him to cut off half the bunches the rest would have been perfect; but this does not seem according to philosophy."

[There is some philosophy in it, for all. Grapes, as usually grown, are "well enriched" and continually dug or hoed around. The effect of this is to destroy surface roots, and the whole force of roots being in the rich sub-soil, away from the natural supply of air, strong succulent growth—excellent if you want to grow cabbages—is the consequence. Such growth will not mature a large crop of fruit, and your gardener is so far right in insisting on the necessity of thinning. When, how-

ever, vines are perfectly healthy—which under our barbarous systems of cultivation they seldom are—they never over-bear. Wild Grapes always mature their full crop.

ORCHARD GROWTH.—*P. R., Hamilton, Ohio*, asks whether his fruit trees will "grow as well in a hay-field as in a well-cultivated garden?" We guess not. If his object be excessive growth, he had better dig plenty of manure deep into the ground, then keep cutting away into the surface roots with plough, spade, or cultivator, so that all the roots shall be forced to seek their only nutriment from the nice, cool, and moist subsoil, and he will have as luxuriant shoots as any bed of asparagus would bear under the same treatment. The leaves would be also large, glossy, and handsome, and the fruit equal in size and quality to small pumpkins. In a "hay-field," as many slovenly farmers have them, our correspondent would not get two inches growth a year. We do not recommend either plan—but this is not answering our correspondent's question.

ORIGIN OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.—In 1824, Dr. Mease, a wealthy Philadelphian and enthusiastic horticulturist, and to whom Philadelphians are indebted for their public squares, received from abroad a package of valuable seeds, addressed to the "Philadelphia Horticultural Society." There was none then in existence. The Doctor thought it best to make one, and then distribute his seeds. A meeting of his friends was held, and the result was the present influential organization.

GRAND EXHIBITION OF GRAPES AND WINES.—The Grape-growers' Association of Cleveland were to hold a grand exhibition in Cleveland on 30th of September, and 1st and 2d of October. One hundred and seventy-six dollars in premiums were offered. We are sorry not to have had notice early enough to call attention to it in our columns.

HONEY LOCUST AS A HEDGE PLANT.—A correspondent asks our opinion of its merits. We think it in most cases equal to the Osage Orange, and in many cases superior. In most soils around Philadelphia the Honey Locust will make a hedge in three years as good as an Osage Orange in six. We have no doubt this is the case in many other places. At Elizabethtown, the late Mr. Reid, whose knowledge of hedge management was very

superior, and who had experimented with every thing, gave the preference over all to the Honey Locust.

CHEMICAL STATISTICS OF ORGANISED BEINGS.
[Continued from page 310.]

Ashes.—An immense quantity of water passes through the vegetable during the period of its existence. This water evaporates at the surface of the leaves, and necessarily leaves, as residue, in the plant the salts which it contained in solution. These salts compose the ashes, products evidently borrowed from the earth, to which, after their death, vegetables give it back again.

As to the form in which these mineral products deposit themselves in the vegetable tissue, nothing can be more variable. We may remark, however, that among the products of this nature, one of the most frequent and most abundant is that pectinate of lime discovered by M. Jacquelin in the ligneous tissue of most plants.

IV. If, in the dark, plants act as simple filters which water and gas pass through; if, under the influence of solar light, they act as reducing apparatus which decomposes water, carbonic acid, and oxide of ammonium, there are certain epochs and certain organs in which the plant assumes another, and altogether opposite part.

Thus, if an embryo is to be made to germinate, a bud to be unfolded, a flower to be fecundated, the plant which absorbed the solar heat, which decomposed carbonic acid and water, all at once changes its course. It burns carbon and hydrogen; it produces heat—that is to say, it takes to itself the principal characters of animal life.

But here a remarkable circumstance reveals itself. If barley or wheat is made to germinate, much heat, carbonic acid, and water are produced. The starch of these grains first changes into gum, then into sugar, and which at last produces carbonic acid and heat. Sugar, therefore, seems the agent by means of which plants develop heat as they need it.

How is it possible not to be struck from this with the coincidence of the following facts? Fecundation is always accompanied by heat. Flowers as they breathe produce carbonic acid: they therefore produce carbon; and if we ask whence this carbon comes, we see, in the sugar cane for example, that the sugar accumulated in the stalk has entirely disappeared when the flowering and fructification are accomplished. In the beet root, the sugar continues increasing in the roots until it flowers; the seed-bearing beet contains no trace of

sugar in its root. In the parsnip, the turnip, and the carrot, the same phenomena take place.

Thus, at certain epochs, in certain organs, the plant turns into an animal; it becomes, like it, an apparatus of combustion; it burns carbon and hydrogen; it gives out heat.

But, at these same periods, it destroys in abundance the saccharine matters which it had slowly accumulated and stored up. Sugar, or starch turned into sugar, are, then, the primary substances by means of which plants develop heat as required for the accomplishment of some of their functions.

And if we remark with what instinct animals, and men too, choose for their food just that part of the vegetable in which it has accumulated the sugar and starch which serve it to develop heat, is it not probable, that, in the animal economy, sugar and starch are also destined to act the same part, that is to say, to be burned for the purpose of developing the heat which accompanies the phenomenon of respiration?

To sum up, as long as the vegetable preserves its most habitual character, it draws from the sun heat, light, and chemical rays; from the air it receives carbon; from the water it takes hydrogen, azote from the oxide of ammonium, and different salts from the earth. With these mineral or elementary substances, it composes the organized substances which accumulate in its tissues.

They are ternary substances, ligneous matter, starch, gums, and sugars.

They are quaternary substances, fibrin, albumen, caseum, and gluten.

So far, then, the vegetable is an unceasing producer; but if at times, if to satisfy certain wants, the vegetable becomes a consumer, it realizes exactly the same phenomena which the animal now sets before us.

V. An animal, in fact, constitutes an apparatus of combustion from which carbonic acid gas is continually disengaged, in which, consequently, carbon undergoes combustion.

You know that we were not stopped by the expression *cold-blooded animals*, which would seem to designate some animals destitute of the property of producing heat. Iron which burns vividly in oxygen produces a heat which no one would deny; but reflection and some science are necessary in order to perceive that iron which rusts slowly in the air disengages quite as much, although its temperature does not sensibly vary. No one doubts that lighted phosphorus in burning produces a great quantity of heat. Unkindled phosphorus

also burns in the air, and yet the heat which it develops in this state was for a long time disputed.

So as to animals, those which are called warm-blooded burn much carbon in a given time, and preserve a sensible excess of heat above the surrounding bodies; those which are termed cold-blooded burn much less carbon, and consequently retain so slight an excess of heat, that it becomes difficult or impossible to observe it.

But, nevertheless, reflection shows us that the most constant character of animal existence resides in this combustion of carbon, and in the development of carbonic acid which is the result of it; beginning, also, in the production of heat, which every combustion of carbon occasions.

Whether the question be of superior or inferior animals; whether this carbonic acid be exhaled from the lungs or from the skin, does not signify; it is always the same phenomenon, the same function.

At the same time that animals burn carbon, they also burn hydrogen; this is a point proved by the constant disappearance of hydrogen which takes place in their respiration.

Besides, they continually exhale azote. I insist upon this point, and principally in order to banish an illusion which I cannot but believe to be one of the most prejudicial to your studies. Some observers have admitted that there is an absorption of azote in respiration, but which never appears unaccompanied by circumstances that render it more than doubtful. The constant phenomenon is the exhalation of gas.

We must therefore conclude with certainty, that we never borrow azote from the air; that the air is never an aliment to us; and that we merely take from it the oxygen necessary to form carbonic acid with our carbon, and water with our hydrogen.

The azote exhaled proceeds, then, from the aliments, and it originates in them entirely. This, in the general economy of nature, may in thousands of centuries be absorbed by plants which, like Jerusalem artichokes, draw their azote directly from the air.

But this is not all the azote which animals exhale. Every one gives out by the urine, on an average, as M. Lecanu has proved, 230 grains of azote a day, of azote evidently drawn from our food, like the carbon and hydrogen which are oxidized within us (*que nous brûlons*).

In what form does this azote escape? In the form of ammonia. Here, indeed, one of those observations presents itself which never fail to fill us

with admiration for the simplicity of the means which nature puts in operation.

If in the general order of things we return to the air the azote which certain vegetables may sometimes directly make use of, it ought to happen that we should also be bound to return ammonia, a product so necessary to the existence and development of most vegetables.

Such is the principal result of the urinary secretion. It is an emission of ammonia, which returns to the soil or to the air.

But is there any need to remark here, that the urinary organs would be changed in their functions and in their vitality by the contact of ammonia? The contact of the carbonate of ammonia would even effect this; and so nature causes us to excrete urea.

Urea is carbonate of ammonia, that is to say, carbonic acid like that which we expire, and ammonia such as plants require. But this carbonate of ammonia has lost of hydrogen and oxygen so much as is wanting to constitute two molecules of water.

Deprived of this water the carbonate of ammonia becomes urea; then it is neutral, not acting upon the animal membranes; then it passes through the kidneys, the ureters, and the bladder, without inflaming them: but having reached the air, it undergoes a true fermentation, which restores to it these two molecules of water, and which makes of this same urea true carbonate of ammonia; volatile, capable of exhaling in the air; soluble, so that it may be taken up again by rain; and consequently destined thus to travel from the earth to the air, and from the air to the earth, until, pumped up by the roots of a plant and elaborated by it, it is converted anew into an organic matter.

Let us add another feature to this picture. In the urine, along with urea, nature has placed some traces of albuminous or mucous animal matter, traces which are barely sensible to analysis. This, however, when it has reached the air, is there modified, and becomes one of those ferments of which we find so many in organic nature; it is this which determines the conversion of urea into carbonate of ammonia.

These ferments, which have so powerfully attracted our attention, and which preside over the most remarkable metamorphoses of organic chemistry, I reserve for the next year, when I shall give you a still more particular and full account of them.

Thus we discharge urea accompanied by this ferment, by this artifice, which acting at a given moment, turns this urea into carbonate of ammonia.

If we restore to the general phenomenon of ani-

mal combustion that carbonic acid of the carbonate of ammonia which of right belongs to it, there remains ammonia as the characteristic product of urine.

Thus, by the lungs and the skin, carbonic acid, water, azote.

By the urine, ammonia.

Such are the constant and necessary products which exhale from the animal.

These are precisely those which vegetation demands and makes use of, just as the vegetable in its turn gives back to the air the oxygen which the animal has consumed.

Books, Catalogues, &c.

Our table is covered with catalogues, indicating activity and business in the nursery trade. We are very much obliged to all our friends for their favors, as they afford us a fair idea of the progress of gardening in the localities they emanate from.

DESCRIPTIVE CATALOGUES.

J. A. Nelson & Son, Mercer, Pa. Mostly fruit, and a fine collection.

Bronson, Merrill & Hammond, Geneva, N. Y.

Ellwanger & Barry, Rochester, N. Y. No. 2. Trees and Shrubs. 75 pages; beautifully illustrated.

Prince & Co. Trees and Shrubs. 28 pages.

Ellwanger & Barry. No. 1. Fruits. 60 pages.

E. J. Evans & Co., York, Pa. Trees and Fruits. 35 pages.

Do do Native Apples. 16 pages.

Andrew Bridgeman, New York. Bulbous Catalogue.

Buist & Son, Philadelphia. Bulbous Roots.

H. A. Dreer, Philadelphia. Bulbous Roots.

G. W. Campbell, Delaware, O. Grape-vines. 15 pages.

A. S. Fuller, Brooklyn, N. Y. Strawberries.

James Vick, Rochester, N. Y. Hardy Bulbs.

Lindley & Hinks, Bridgeport, Conn. Select list of Fruit and Ornamental Trees.

J. A. Bruce & Co., Hamilton, Canada West. Bulbs.

Prince & Co., Flushing, L. I., N. Y. Strawberries.

D. D. Buchanan, Reid's Nursery, Elizabethtown, N. J.

M. P. Wilder & Baker, Dorchester, Mass. Circular of Clapp's favorite Pear.

Stephen Hoyt & Sons, New Caanan, Conn. Fruit and Ornamental trees.

Francis Brill, Newark, N. J. Circular of Green Prolific Strawberry.

Do do Fruit and Ornamental Trees.

Sheppard, Seward & Co., N. Y. Bulbs, &c.

S. L. Allen, Cinnamiuson, N. J. Strawberries.

Strong & Spooner, Brighton, Mass. Trees, Fruits, &c.

Fleming & Davidson, N. Y. Dutch Bulbs.

J. M. Bailey, Plattsburg, N. Y. Circular of Adirondack Grape.

O. W. Hoff, Augusta, Ill. Sheet Catalogue.

Puschall Morris, Philada. Rural Advertiser.

WHOLESALE LISTS.

Mahlon Moon, Morrisville, Pa.

D. Brinckerhoff, Fishkill Landing, N. Y.

D. Engle, Marietta, Pa.

J. L. Darlington & Co., West Chester, Pa.

Hoopes & Bro., West Chester, Pa.

Dingee, Conard & Co., West Grove, Pa.

E. Moody & Son, Lockport, N. Y.

John C. Williams & Co., Dansville, N. Y.

H. Southwick & Sons, Dansville, N. Y.

T. C. Maxwell & Bro., Geneva, N. Y.

H. A. Dreer, Philadelphia. Circular of Philadelphia Raspberry and French's Strawberry.

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

Frost & Co., Rochester, N. Y.

WEED'S TREE AND PLANT PROTECTOR. Pamphlet explaining Mr. Weed's plan in full.

We have had oft-repeated experience of the great value of a very slight protection to fruit trees; and though we have never seen Mr. Weed's plan exactly in use, we think very highly of it, and hope our Northwestern readers will give it a fair trial.

PROCEEDINGS OF THE FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.

On another page we give an extract from this interesting report, which is, after all, but a sample of the numerous other excellent chapters. It is surprising to what an extent fruit-growers will go for other's benefit; and it is, after all, never appreciated at a title of its worth. Here is a volume of 72 pages, prepared for the press by the unpaid services of Mr. Hacker, the Secretary, and the also unpaid efforts of a score or so of other gentlemen who give their time to write, or go a hundred miles to tell what they know of fruit and fruit-growing. It is surprising to us that every fruit-grower in the region "patronised" by the society do not become members, and thus secure the reports for themselves. We see by the list that there are 111 active members of this society.

New or Rare Plants.

CALCEOLARIA, CLOTH OF GOLD.—A dwarf, narrow-foiled plant, a most profuse bloomer, a most clear and decided yellow, is certainly as yet the best Calceolaria of its style. Calceolarias, even *Aurea floribunda*, generally make two seasons of blooming, therefore between each there is a rest period of no bloom, which frequently converts a floral design into an inharmonious and incongruous picture. Now, Cloth of Gold has a perpetual succession of flower and stalks rising, therefore there is no time when there is not any bloom on the plants at all.

ANEMONE JAPONICA "HONORINE JOBERT."—A beautiful, new, hardy, herbaceous plant, being a pure white-flowered variety of *Anemone japonica*, having the free blooming habit of *A. japonica hybrida*, but not derived from it. A vigorous growing plant, and valuable for summer effect in beds.

ROBINIA PSEUDO-ACACIA DECAISNEANA.—This is a beautiful rose-colored variety of our common yellow Locust, that has been accidentally raised from seed by a florist at Manosque, in the lower Alps. It is to be regretted that here in America the Locust-tree borer is so destructive as to render these otherwise beautiful trees unsightly objects. In France, where the Locust Tree thrives much better than here in its native country, they think in this variety they have one of the finest additions to their ornamental plants they have known for a long time.

NEW SHOW GERANIUM.—*Virginie Miellez Improved.*—This charming variety originated by a branch sprouting off from the well known *Virginie Miellez* of the continental collections, a flower that has perhaps been a greater favorite, and more sought after, than any other in its section.

SCARLET-FLOWERED GASTRONEMA.—*Gastronema sanguinea (Lindley).*—Introduced from South Africa. The flowers are borne on single stems, rising from six to twelve inches high from the bulbous root, and are from three to four inches across, resembling the expanded blossom of a large-flowered Crocus, but of a clear Apricot scarlet, varying to pure scarlet or orange-red; and with the addition of a broad, pale (sometimes white) Amaryllis-like tube. Being a native of the same country as *Gla-diolus psittacinus*, it will no doubt prove hardy.

Dr. Lindley, who first named and described it, says, "It is a very handsome plant, deserving general cultivation, even in the most select collections."

DEUTZIA CRENATA FL. PLENO.—*Japan.*—There were a few very interesting new hardy plants shown, first a *Deutzia crenata flore pleno*, one of Fortune's novelties, flowered by Mr. Standish. This looked like a fine addition to hardy shrubs; it has opposite shortly stalked fine serrated leaves and copious terminal racemes of deflexed double flowers deeply tinged externally with rose.—*Royal Hort. Society Report.*

PITCAIRNIA TABULEFORMIS.—Certainly one of the most interesting and by its habit one of the most distinct of this elegant genus. The flowers are large, and of a brisk reddish orange. A plant worthy of figuring in every collection.—*L' Illustration Horticole*, p. 344.

AGAPANTHUS UMBELLATUS ALBIFLORUS.—A very interesting and beautiful greenhouse species, of a neat habit of growth, quite distinct from the variety generally known in gardens as the white-flowered *Agapanthus*, with dirty bluish-white flowers. The present one is much smaller, with narrow strap-shaped leaves, and terminal clusters of snow-white blossoms in the summer months. The plant will shortly be figured in the *Illustrated Bouquet*.

CUPRESSUS LAWSONII, FOL. VAR.—The *Cupressus Lawsoni*, or *Lawsoniana*, was originally obtained from California, from whence it has been recently introduced into England and on the continent. In its native wilds it attains to more than a hundred feet in height; its branches are tufted, very much ramified, and present the appearance of ostrich feathers. The plant at present under consideration is a variety of the preceding, obtained from seeds received direct from California by Mr. John Waterer, of Bagshot, who has ceded part of the stock to M. Verschaffelt. This variety has the same sombre green of the other, but the tips of the ramifications are of a brilliant yellow, and therefore this tree will have, whether it be isolated or grouped in a park or in a garden, a very magnificent effect. Thus Mr. Waterer says of the largest individual in his possession, that it is of a very striking aspect and of rare elegance. It has nothing to fear from the weather, as it does not suffer in our intemperate winters, for it has passed without injury the disastrous winter of 1860-61.

Rare and New Fruits.

RUSSELL'S PROLIFIC STRAWBERRY.—Persons professing to give the natural size of this variety, represent it as being of an oblong oval form, and 2½ inches wide by 3 in length.

ROGERS' NO. 15 GRAPE.—We referred in our last year's volume to some very superior fruit sent us by Mr. Rogers of his new hybrid grapes, but an accident prevented us having engravings made of the best of them at that time. We now, however, do the next best thing to having engravings made of the fruit from the original vine, and give an engraving of a bunch raised by Messrs. Lindley & Hinks, Bridgeport, Connecticut, who have been raising plants largely from wood furnished directly by Mr. Rogers to them.

This one we think the most promising. No. 19, however, was exhibited in beautiful condition lately before the Pennsylvania Horticultural Society, and a special premium was awarded it as the best new one exhibited,—and we may give an engraving of this one also.

HALE'S EARLY PEACH.—We have received a beautiful colored lithograph of this new fruit from Mr. Isaac Pullen, of Hightstown, N. J. It is a size larger, and of a brighter red tinge than the specimen recently referred to as coming from Cleveland.

THE PHILADELPHIA RASPBERRY is a native variety; a single plant was originally found growing wild in a wood, within the present limits of the City of Philadelphia.

Mr. Wm. Parry, who has been extensively engaged for over twenty years in growing a great variety of Raspberries, is very much pleased with this variety. It is perfectly hardy, requiring, so far, no protection during winter, nor any extra care or culture, but will grow on any land that will raise corn, producing immense crops, and sells at high prices. The fruit in market sold readily last season at twenty cents per quart.

The fruit is large, of a purplish red, rather darker than the Antwerp, rich and firm, bearing carriage well. Canes purple, very strong, with but few spines, smooth, thick and stout, standing upright, without stakes or railing; it is propagated by suckers and not from the tops.

[We are indebted to a correspondent for these particulars.—Ed.]

FRENCH'S STRAWBERRY.—The original plant of this new Strawberry was found a few years since by Mr. Lewis French, near Moorestown, N. J., growing wild in his meadow, and although crowded with the meadow-grass, it bore, up high and clear a fine cluster of large, bright scarlet berries.

There was an extensive plantation of Hovey's Seedling and the Large Early Scarlet, growing near by, from which it appears to have descended, being perhaps a cross between them, combining the good qualities of both those standard varieties. It has gained a high position in the estimation of all who know it. It commences early and continues through the season to yield abundantly. The Triomphe d'Gand succeeds it. It is uniformly large and well shaped, a brilliant scarlet, excellent quality, sweet and luscious, the blossoms are all perfect in both organs, and do not require the presence of any other variety to insure full crops of fruit.

[As in the case of the Philadelphia Raspberry, we are here also indebted to a friend for this account,—we may add, of our own observation, that we regard both of them as very promising candidates for public favor.—Ed.]

TRIUMPH OF HOLLAND ALPINE STRAWBERRY.—Among Strawberries, the Alpine varieties are specially valuable and interesting on account of yielding a long-continued crop after all others are past bearing, and a second great advantage attending their culture in medium sized gardens, is their adaptation for edgings, or single margin rows in narrow borders, by their compact growth and freedom from runners.

The present fine variety has been obtained by an eminent grower of the Alpine section, after twenty years' experimental culture. The varieties previously known, though valuable in themselves for autumnal desserts, have been too small for general adoption, but the one now offered is far superior to all kinds hitherto grown in English gardens for productiveness, size, and flavor. The habit of growth is vigorous and compact, the yield four times the quantity of others grown upon the same bed, the fruit about equal in size to a medium size Keen's Seedling, of a bright red crimson tint, and a rich piquant flavor, between the the Old Scarlet and the Hautbois.

Its average value as garden produce may be estimated by its great and continuous crop throughout the late autumn season, as a table fruit by the most desirable properties above mentioned. It is one of the most important acquisitions of the year,



[ROGERS' HYBRID NO. 15.]

and will eventually supersede the kinds hitherto comprised in the Alpine section.—*London Gardener's Weekly*.

PEACH MONSTRUEUSE DE DOUE.—A noble fruit, 9½ inches in diameter, round, and with a suture that passes round the whole surface of the fruit. Skin pale green, mottled all over with thick dottings of a red check where fully exposed to the sun. Flesh green, very deep red round the stone, from which it separates. It is rather firm, solid, and heavy. Juice very abundant, very sprightly, piquant, and racy. A splendid Peach. As a fine market variety this will be invaluable.—*Cottage Gardener*.

THE IONA GRAPE.—This new grape is described in a late number of the *Horticulturist*:

“The Iona was grown from seed of the Diana, a number of years ago, and selected from several thousand seedlings on account of its hardiness, earliness, and general good qualities.

The Iona is a good grower, with short-jointed, firm wood. The foliage is of good size and much firmness. It blossoms late. The bunch is large, moderately loose, and usually double-shouldered. The berries are large, transparent, and of a beautiful wine color. The flesh is melting to the centre, tender, juicy, sweet, and vinous. The seeds are small. It is an early bearer, very productive, and ripens about ten days before the Isabella.

The Iona has a rare combination of the sweet and acid properties of the grape.

Foreign Intelligence.

COTTON IN THE FEJEE ISLANDS.—Dr. Seemann was sent by the English government to the Fejee Islands, and has published his travels. A reviewer says:

“The most important part of Dr. Seeman's mission was that connected with the cultivation of the Cotton plant. He thinks that in suitability of soil, in climate, in the sea air and gentle breezes ever blowing, in the excellent water carriage afforded by above 200 islands, each protected by the winds and waves by the natural breakwater of coral reefs, nothing better could be imagined or desired. He took out a supply of Sea Island and New Orleans Cotton seeds; the former had lost their germinating power, the latter grew readily. Sown on the 9th of June, the plants begin to yield ripe pods within three months, and thus he was enabled to carry

home a crop from the very seeds he had brought out, though his absence from England only amounted to 13 months altogether. On the 18th of October, Dr. S. found his plants from 4 to 7 feet high, full of ripe pods and flowers; and the chief, who had promised to look after the plantation, said the field had only required one weeding; after which, the Cotton-plants had grown so rapidly, that they had kept down the weeds. The rapidity of this profitable return is a very important feature. Of six kinds of naturalized cotton, Dr. S. found that four were, for practical purposes, identical, though botanically distinct. In July, he found that each plant on an average yielded 700 pods, and 20 pods of cleaned cotton weighed 1 ounce; thus each plant yielded 2 lb. 3 oz. Now there were 222 plants to an acre, so that 1 acre would produce 485 lb. 10 oz., and this at 6*d.* per pound gives upwards of 12*l.* Double or treble may be calculated upon as the annual crop. It must further be remembered, that in the Fijian islands the plants will continue to yield for several years, if merely kept free from weeds, creepers, and periodically pruned. The value of the cotton was decided by the Executive Committee of the Manchester Cotton Supply Association in 1859, who resolved, ‘That these samples are of qualities most desirable for British manufacture, that such a range of excellent cotton is scarcely now received from any cotton-growing country.’

The only difference of opinion seems to be as to the supply of labor. Dr. S. maintains that the Christianized natives have already begun to go round the districts longest frequented by whites, asking for employment (of the whole population 67,000 are nominally Christian). Difficulties might in time occur, when land has become scarce, but the nature of the land-tenure is not hampered by ill-defined tribal claims. On the contrary, all the land is private property, the ownership resting in families or individuals. A small portion of it only is under cultivation at one time, sufficient to supply the wants of a Fijian household, and the custom is to break up new ground frequently and abandon the old.

NEW ROSES.—The first prizes were awarded to Mr. W. Paul for the following:—Maurice Bernhardin; Robert Fortune, very globular; Prince Camille de Rohan, very dark and fine; Charles Lefebvre, good; Professor Koch, dark and double; Louise Darzins; Louise Margottin (1863), pretty and good; Beauty of Waltham, good; Turenne; Gloire de Chatillon, like Madame Masson; Vicomte Vigier, good; La Brilliante, very fine; Mademo-

iselle Emain; François Lacharme, excellent; John Hopper, good; Madame Ernest Dreol; and Madame Charles Wood.—*Lond. Gard. Chronicle.*

BLUE AZALEA.—Sir R. Alcock, in his "Capital of the Tycoon," makes mention of a Blue Azalea, a variety I did not know existed. He says (vol. ii. p. 71): "In the hedges, the Honcysuckle and the Thistle remind us of home, while the Azaleas, pink, blue, and white, in all their delicacy of hue and texture, mingling with the Camellia and Cape Jasmine, which grew wild by the hedge-side, spoke of other climes than our own." Perhaps it may interest some of your correspondents to have this passage brought to their notice, should the Blue Azalea be, as I believe, unknown in England.—*Gardener's Chronicle.*

GARDENING IN DENMARK.—Graves' recent "Cruise in the Baltic" tells us: "In Copenhagen every window is filled with pretty flower-pots, in which Roses, Pinks, and Fuchsias seem to thrive to perfection. These beautiful plants give a neat effect to the fronts of the houses, and tell the passing stranger of the deeply-rooted love of flowers which forms part of the national character of the Danes, as well as of the Swedes."

PINUS BUNGEANA AT PEKING.—Near these royal tomb-stones I observed a species of Pine tree, having a peculiar habit and most striking appearance. It had a thick trunk, which rose from the ground to the height of three or four feet only. At this point some eight or ten branches sprang out, not branching or bending in the usual way, but rising perpendicularly, as straight as a Larch, to the height of 80 or 100 feet. The bark of the main stem and the secondary stems was of a milky-white color, peeling like that of the Arbutus; and the leaves, which were principally on the top of the tree, were of a lighter green than those of the common Pine. Altogether, this tree had a very curious appearance, very symmetrical in form, and the different specimens, which evidently occupied the most honorable places in the cemetery, were as like one another as they could possibly be. In all my wanderings in India, China, or Japan, I had never seen a Pine tree like this one. What could it be?—was it new?—and had I at last found something to reward me for my journey to the far north? I went up to a spot where two of these trees were standing, like sentinels, one on each side of the grave. They were both covered with cones, and therefore were in a fit state for a critical examina-

tion of the species. But although almost unknown in Europe the species is not new. It proved to be one already known under the name of *Pinus Bungeana*. I had formerly met with it in a young state in the country near Shanghai, and had already introduced it into England, although, until now, I had not the slightest idea of its extraordinary appearance when full grown. I would therefore advise those who have young plants of this curious tree in their collections to look carefully after them, as the species is doubtless perfectly hardy in our climate, and at some future day it will form a very remarkable object in our landscape. One of the trunks, which I measured at three feet from the ground, was twelve feet in circumference. *Fortune's "Yeddo and Peking."*

CULTURE OF THE ANECTOCHILUS.—This tribe of pretty little plants deserves far more extensive cultivation. As they are mostly all natives of Borneo, they consequently require a great amount of heat, moisture, and shade; but any one that has got an Orchid-house or stove may grow them with very little trouble. I have tried several different ways of growing them, but the following I have found to be the most successful:—The soil I use is one-half good fibrous peat broken up in small lumps, with the fine sifted out; sphagnum moss chopped up, one-quarter; crocks and charcoal broken up fine, one-quarter, with a good sprinkling of silver sand, all well mixed together. For specimens I use pans twelve inches diameter by four deep, perforated in the bottom. The pans are half-filled with broken pots to make sure of good drainage; over this a layer of sphagnum moss; then fill up the pans with the above compost two inches above the rim, pressing the soil with the hand into the shape of a mound; then put in the plants at equal distances. The number will depend on the size of the plants. On the top of the soil under the leaves I place a few sprigs of *Lycopodium denticulatum*, which makes a fine contrast with the beautiful foliage of the *Anectochilus*. I likewise find the *Lycopodium* very beneficial to the growth of the *Anectochilus*: as I always grow them under bell-glasses, the *Lycopodium* is sure to grow rapidly in such a situation, and absorbs much of the condensed moisture under the glasses. I never give any air to the glasses, but shade with paper when the sun is on them during the summer months. The bell-glasses must be kept perfectly clean, if they are allowed to get dirty the plants will soon become sickly. I invariably wash the glasses twice a-week in the morning, and water the

plants if they require it, leaving the glasses off for an hour or so that the foliage may get quite dry before the glasses are replaced. During the season of growth they require a good supply of water, especially during the summer months. They require but little rest: this I generally give during December and January. During the time of rest I give but little water—just as much as keeps the soil a little moist on the top. I pot them afresh once a year, and some of them twice—that depends on the propagation, which I shall mention afterwards. The time of potting depends on the time of rest. I pot always when I start them into growth, which is generally about the end of January.—*Florist and Pomologist.*

Foreign Correspondence.

From Our Occasional Paris Correspondent.

PARIS, October 1st, 1863.

"One touch of nature makes the world akin," says the author of authors. Adapted for the use of gardeners it reads: "A spade is a spade all over the world, and he who handles it is my brother." Or if you learnedly expound him, you may say that Shakespeare meant Horticulture when he spoke of Nature. He was fond of gardening, and no wonder; how could he otherwise be the perfect author? Shakespeare granted, what follows? Listen, friend Meehan, and I will speak.

The Acclimatising Society has had a meeting in Bois, generally called for short the *Bois de Boulogne*. All the world was there, and felt akin, and equally interested in the success of the society's purposes. [N. B.—I write *purposes*, not *porpoises*, as I got printed the other day in your *Monthly*.] I represented, ex-officially to be sure, the Western Hemisphere. The novelty of the thing was, that we all of us formed a great Tasting Committee. There were, for instance, potatoes from all parts of France. A lot of each was boiled in water; everybody tasted and recorded his vote. What easier, what more sensible? and still the thing was new—*Mirabile dictu*—but new it was. Perfect it was not, for—excuse the simile—potatoes (not merely *small potatoes*) are like human nature. One does not get soft as quickly as another—there is a gradation of strength of character through the individuals of the race. Now, although it was evident that a good many kinds were either not enough or more than enough, still they all showed what they were to a connoisseur of potatoes. And as everybody is competent to sit on potatoes, and no appre-

ciable diversity of taste can occur in regard to it, you may be sure that every potatoe got its due, and the right place assigned to it in the scale. Other vegetables, also cooked, went off less happily, for obvious reasons. Of foreigners, two things were pronounced worthy of general cultivation: the Chinese potatoe (*Dioscorea batatas*), and Australian spinnach (*Tetragonia expansa*). Your correspondent belonged to the minority but; *de gustibus* you know. Of novelties I will mention the bulbous root of chervil, coaxed by cultivation into respectable "bulbs, and, *foi de gourmand*, a respectable mess they make.

The following day I dined with a Turkish gentleman, a medical student, at Philippès. I related to him the meeting, &c. "It is done," asked he, "to increase the enjoyments of the palate?" "Y-e-s." "Then why not begin with the meat?" "How so?" "Why, we have but three kinds of strong meat to eat—beef, veal, mutton; [pig, you see, was out of the question,] why not import and acclimatise some other animal of worthy meat?" "To be sure," said I, "why not? Grace before meat, and meat before vegetables." I forward you this question.

I had the pleasure of making recently the acquaintance of Mr. Hossbrink. Have your readers heard of him? If not, I will tell the long and the short of a man who has made his mark.

Mr. Hossbrink comes from that country where gardeners are divided into three classes: *liebhaber*, amateur; *handels*, commercial, *i. e.*, nursery, or seeds-men; and *kunst*, art, *i. e.*, landscape and professional gardener. Mr. H. calls himself *ein kunstgaertner*. He made his debut in Paris by offering to get a good crop of grapes off some vines which the owner was going to have dug up, for being old and worn out. And a good crop it was, circumstances considered. The whole of his method consisted in training the branches horizontally, bending them toward the ground in the proportion of about one-eighth of the angle which they form with the parent stem—say an angle of 112 degrees.

Mr. H. made his way into the wine districts—into the Champagne. One great proprietor, Mr. Jacquesson, gave him ten pectaries to operate upon; next year he gave him thirty; the third year he gave him three hundred. Proof enough of success. Immense crops was the result.

Mr. H. does not confine himself to the grapevine. All fruit trees can, under his treatment, be made to bear abundantly. The inclination is said to conduct more of the sap into the fruit-bearing branches and their fruit. Will the trees and the

vines be so much sooner exhausted? That is a question which Time in its time will solve.

Mr. H. passes from the orchard into the kitchen-garden, and produces asparagus in the fall! Friend Meehan, did I hear you say, "Get out! asparagus in the fall?—pshaw! You cannot, I cannot, swear, must not swear; but I affirm that I have seen the article, though I have not eaten it. Mr. H. explained to me the modus. About midsummer he puts the plant flat down on the ground, in consequence of which the sap is pretty much all reconducted into the root stock, enabling it to push already towards fall those shoots which, in the regular course, would have come up the following spring.

Mr. H. does not trust to the bending process alone. Nature, he says, fructifies irregularly, and you can't rely on her. A breeze shakes the pollen out, but distributes it unequally, and much is lost. So he takes two girls, puts them at some distance from each other, gives each of them an end of a woollen fringe, and bids them march through the flowering grain, with steady, harmonious step, and a steady, gentle move of the finger. Thus the stalks get equally bent and drop the pollen. With fruit trees the same object is attained by touching the blossoms lightly with something like a powder-bag on a long stick.

Anything extraordinary comes here at once under the notice of Government. The Minister for Agriculture, consequently, appointed different committees in different parts of France. An official statement has appeared since. Wheat, oats, barley, and rye have yielded *about half as much again* under Mr. Hossbrink's directions.

Is this the benefactor of our race, who maketh two leaves grow where grew but one?

Mr. Hossbrink has been decorated by the Emperor himself, who takes as lively an interest in him as a good emperor ought to. I hope to see Mr. Hossbrink soon again, for I have about two thousand questions to ask him, as you naturally may suppose.

Meantime, with best respects to you and every one of your readers, I am.

M.

Horticultural Notices.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA

The fifth annual meeting of this society was held, in accordance with the call of the executive committee, at the old Moravian town of Bethlehem, on

the 29th and 30th of September. The members were gratified to find prepared for their reception a fine room in Citizen's Hall, which had, through the exertions of our worthy President and the ladies of the town, been beautifully decorated for the purpose; on the sides of the hall in the spaces between the windows were hung oil and water-color paintings, designs, hanging baskets, &c., and surmounted by shields with the names of numerous pomological worthies—as Downing, Brinckle, Van Mons, Duhamel, Longworth, and others—draped with laurel and forest leaves. The wide table down the centre of the hall, as well as the side tables, were profusely covered with a large and attractive display of fruits, comprising about one hundred and fifty varieties each of Pears and Apples, ninety-six varieties of Grapes, besides Apricots, Nectarines, &c. Of Grapes, fifty varieties of natives were shown by our friend Thomas Harvey, many of them having proved to be worthless seedlings of Isabella and Fox Grapes, and unworthy of further notice. Of the desirable varieties, Concord, Creveling, Clinton, Delaware, and Dianas, with some Flora Maxatawney and Rebecca, were shown in their greatest perfection. Wines were also exhibited of Catawba, Isabella, and Clinton; with cordials made from white, black, and red Currants, Strawberries and Blackberries. The Clinton wine, mostly made in the vicinity of Bethlehem, was pronounced to be more an approach to wine in this country than any thing yet made. Foreign Grapes were also shown, well grown and colored, by Mr. Mitchell of Chestnut Hill, Messrs. Abbott & Wilbur of Bethlehem, Dr. Bute of Nazareth, and many others.

About eleven o'clock the meeting was called to order by the President, the reading of the minutes of last meeting was dispensed with, being in a printed form; a large number of new members were elected, a committee was appointed to prepare business for the meeting, the Treasurer's report, and an interesting report from the Committee on Nomenclature were presented and read. In following out the object of their appointment this committee have considered it advisable "To record the names, synonyms, origin, descriptions, and outlines of all Pennsylvania seedling fruits, in a book retained expressly for that purpose, and they request the members of the society, as a favor, not only to them, but as a duty all owe to the advancement of Horticulture, that all should enter in and become participants in the good work of reform. The present season having been an unfavorable one for fruit, the number of outlines yet made have been smaller than would otherwise have been the case.

This committee is very ably headed by its chairman, Mr. Josiah Hoopes.

The first subject taken up for discussion was the preparation of the soil, mode of cultivation and pruning. The sense of the meeting seemed to be to prepare your ground thoroughly before planting, ploughing both ways with double Michigan and subsoil ploughs. After planting, cultivate very shallow, only sufficient to keep clear of weeds while trees are young. As they come into, bearing seed down with green grass, and apply all manure on the surface. In the cultivation of Grapes it was thought that excessive enriching favors the rot, and that clayey subsoils are particularly pernicious, as they are much less liable to the rot on open, porous soils. In regard to mildew, that is mostly attributed to atmospheric causes, and protection and shelter are the only expedients known at present that seem to offer exemption. Mulching considered a decided advantage to all plants when young.

The vote taken as to the three best summer varieties of Pears, seven for autumn and two for winter, though restricting to rather a small compass, resulted as follows:

<i>Three Summer.</i>	<i>Seven Autumn.</i>
Manning's Elizabeth,	Bartlett,
Doyenne d' Eté,	Seckel,
Tyson.	Belle Lucrative,
	Beurré Diel,
<i>Two Winter.</i>	Beurré d'Anjou,
Lawrence.	Sheldon,
Vicar of Winkfield.	Louise Bonne de Jersey (on Quince).

For Raspberries,—Purple Cane, early, fine flavored and prolific; Brincklé's Orange, Hornet, and Franconia to follow, all being varieties of the highest flavor, though requiring protection in winter; though this is not considered objectionable, as it can be done with but little trouble or expense, and the fruit, in size and flavor, fully repays for the outlay; besides, as a market fruit, they sell at a much higher price than the smaller fruited kinds. Of Strawberries it was not thought best as yet to endorse any of the newer kinds, but first hold on to some of the older, which have proved desirable and productive, as Wilson's Albany, Triomphe de Gand, Lady Finger, Jenny Lind, and Fillmore. Among the newer varieties, Russell's Prolific. Agriculturist, Austin Seedlings, and French's Seedling, recommended to a more extended trial.

Of Blackberries, Dorchester is preferred to the Lawton, being firmer, sweeter, and much earlier.

On Wednesday the discussion continued on, 1st, Native Grapes; 2d, Mode of Culture; 3d, Prun-

ing and proper form of Trellis; 4th, New Foreign Grapes; 5th, Apples, Peaches,—best sorts and mode of culture.

A report from the Chairman of General Fruit Committee, Mr. J. E. Mitchell, was read; he also presented reports from Dauphin, York, Lancaster, Lebanon, Columbia, Chester, and Montgomery counties, which were referred to the Publication Committee. An interesting report, from Thomas M. Harvey, on Grapes, was read and referred.

Of the new Apples shown, the Bethlehem Green and Hower, both seedlings in this neighborhood, seem to deserve further attention, as being regular and prolific bearers. Numerous other good flavored seedlings were tasted, but being of recent origin, and known but by few, it was thought best not to bring them before the society until their further propagation proves their qualities.

The following motion was made and adopted, and is worthy of notice:

"*Resolved*—That the Committee on Nomenclature be instructed to prepare and present for consideration at the next meeting, a standard of definition and description for all fruits, trees, and vines, to serve as a basis for the future catalogue of this society."

After much of interest being discussed, the society adjourned to the call of the Executive Committee; but it is suggested that the winter meeting be held in Norristown, at the usual time, about the middle of January.

The following resolutions, offered at the close by Rev. Mr. Colder, expressed the sense of the meeting:

1st, "*Resolved*—That the thanks of the society are due, and are hereby tendered to our worthy President, for the courteous and efficient manner in which he has discharged the duties of his office during the present session."

2d, "*Resolved*—That the Ladies of Bethlehem have placed us under great obligations for the zeal and excellent taste exhibited by them in decorating our hall and arranging the tables, whereby the success of our exhibition has been greatly promoted."

3d, "*Resolved*—That we return our thanks to the Citizens of Bethlehem for their kind attentions; to the Press of the borough for their professional courtesies; and to the contributors, not members of the society, for the valuable additions they have made to our exhibition."

[Unable to send our own reporter as usual, we are under particular obligations to Mr. W. P. Hacker, the Secretary, for this abstract of the proceedings.—Ed. G. M.]

THE GARDENER'S MONTHLY.

DEVOTED TO

Horticulture, Arboriculture, Botany & Rural Affairs.

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

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Hints for December.



FLOWER-GARDEN AND PLEASURE-GROUND.

Beyond preparing for alterations and improvements to be made next spring,—getting ready stakes, labels, and other necessary items that will certainly be wanted, and preparing things in advance, so that when the busy time shall come, all things will be in readiness,—there is little that can be done in this department at this season.

There are some things, however, that should be done, and for which preparations should be made now, that are not often done, but are very essential to a well-kept place, particularly the *thinning out of trees and shrubbery*, and the *preparing of composts* for plants and flowers. The great fault in most places is the neglect of timely thinning out. We cannot call to mind one place that is exempt entirely from this criticism. Grounds have to be planted thickly when they are first formed to avoid a hungry and neglected appearance. Cheap and common trees may be interspersed with more valuable ones, and, when the place is pretty well overgrown, have these indifferent trees taken out. But most places have been thickly planted without any view to ulterior fitness; still, the least desirable should be taken away. One fat, luxuriant, robust tree, perfect in shape from collar to the apex, will give more real pleasure than a clump of a dozen half-starved specimens, struggling with each other for a mere existence.

In thinning-out trees, the best plan is to open the soil away from the stem a few inches under the ground, and cut it away with an axe. Often, the regret to lose a fine tree induces an attempt to

transplant; generally, such trees fall from the usual difficulties of removing large trees. When they succeed, they seldom grow with a healthy vigor, and when they have escaped all these, an ugly spot is left on the lawn where the tree came out; for the grass will grow stronger there for years to come, and the lawn have the irregular appearance of a cattle pasture. This is the best season to mark such trees and shrubs as it will be desirable to thin out, and early in spring the axe may be allowed to do its duty.

Many kinds of trees that do not seem to thrive well, will be greatly improved next year by having a surface-dressing of manure or rich soil thrown about them. Evergreens are no exception. A singular notion used to prevail, that manure of any kind was injurious to evergreens, probably through noticing that they were usually found in poor, barren soil. Our best American coniferæ-growers, however, have long practised manuring them, and with the best results. Guano has been found particularly beneficial to the Spruce family, and it will probably be found as good for the whole family of evergreens.

Soil for flowers may also be looked up during the winter season. Very few understand that an occasional change of soil is very beneficial to flowers in beds, though all know how important it is to flowers in pots. There is nothing better than surface-soil from an old pasture, taken off about two inches deep, and thrown into a heap with about one-sixth part old hotbed dung, to partially decay. In addition to this "staple" item, smaller quantity of different matters should be gathered together for peculiar cases, or particular plants. Peat, for instance, will be found very useful for many kinds of plants. This is not, as is often supposed, mere black sand; but a spongy, fibrous substance from the surface of bogs and boggy wastes. Sand should be collected sharp and clean; the washings from turnpike ditches are as good as any thing. Leaf-mould is best got already well decayed from the

woods. That one makes for himself from rotten leaves is seldom good for any thing; it is always sour and seems "indigestible" to vegetation. A load or so of well-decayed cow-manure is a good thing for the gardener to have by him, as all those plants that dislike our hot summers, and want a cool soil to grow in, prefer it to any other manure. A small pile of hotbed manure is almost indispensable to a garden.

FRUIT GARDEN.

Now, when "the summer tresses of the trees are gone, and the autumn woods have put their glory on," the fruit-grower will have to inquire what he can do to save his treasures from the rapacities of the winter's frosts that will soon be upon him. It is not a generally recognized fact that frost seriously injures vegetation without any immediate effect being visible. Cherries and other fruits will often be fatally injured, and yet no sign of it be discernible until after the plant is in leaf or flower, when it suddenly droops and dies. Yellows, curl, mildew, and other failings, no doubt, frequently owe their remote origin to the effects of frost in times past. We could give an explanation why this is so, and may do so at another time, in another part of our journal. Here we confine ourselves to hints and advice, and in this case it is to protect all fruit trees possible, no matter how hardy they may be. We would have some few trees trained on espaliers so that they might be protected by mats—others so that they might be bent over, and entirely covered with soil, which is one of the very best plant protectors. Where large orchards are planted, we would surround the whole, if practicable, with a belt of evergreens as the best thing we could do. Evergreens not only protect from cold, but they add to the heat by their own exhalations. Let any one hang a thermometer in winter in a clump of evergreens, and another in a near mass of deciduous trees, and he will be surprised at the difference. The hardiest fruits are also benefited by having a cover of litter over the roots, that will prevent the frost penetrating deeply.

Plants suffer severely, during hard frost, from evaporation; and when the roots are prevented from being frozen, they can better supply the waste. Old tan bark is often used to protect strawberries, which is very well, but old manure or other litter is nearly or quite as good. If an examination in apples, dwarf pears, quinces, peaches, and plums for borers has not yet been made, go at it at once; they make fearful havoc during winter.

GREENHOUSES AND PLANT CABINETS.

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.

Australian and Cape Plants are the chief ornaments of the greenhouse at this time. The *Acacia*, amongst the principal, will, like the *Camellia*, require more water while flowering; indeed, most plants which produce flowers before they make a new growth, require more water as they flower. On the other hand, most plants which flower on the young wood at or near the completion of its growth, take less. The *Correa* is another beautiful tribe, but does not do well in most collections; it is generally grown in a peaty soil; we observed that where it seems to succeed well, the growers use a considerable portion of loam in their compost for it. This is consistent with our own experience, and we are inclined to the opinion that more loam should be used with the peat for hard-wooded plants than is generally done in this country. As soon as any Cape or hard-wooded plant has ceased to flower, it should be repotted, if it require it; many prefer waiting till the plants are placed in summer quarters before this is done, and some in the fall. We prefer before they commence to grow, whatever the season may be, as the roots being then in their most active state immediately penetrate the new soil, and before it becomes sour or sodden by frequent waterings, reap whatever advantages the air it contains when fresh may afford them. Some greenhouses are rendered very gay in February and March by having young plants of *Verbenas*, *Petunias*, and other bedding-out plants potted at this time into large pots, and encouraged to grow.

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 force well if 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 bottom 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.

Cinerarias will be soon 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. This plant bids fair to become more popular than ever, as supplying a very early spring want. The *Calceolaria* will require the same conditions as the *Cineraria*.

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 the "finger and thumb"—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—repot 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. *Oranges* and *lemons* will require the coolest part of the house, and to receive no more water than will just keep them fresh. *Epiphyllums*, as they continue to flower, will require the warmest end of the house, and a fair supply of moisture. *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.

VEGETABLE GARDEN.

Very little can be done now in this department, except by way of preparation for another year. Manure can be placed on the ground wherever required, and *asparagus* beds, if not already done, should have a slight covering of it. Bean-poles, pea-brush, and stakes of all kinds should be got now, the tool-house gone over and put in order, and every thing kept in good order and studiously in its place. When the season of operations commences, there will then be nothing to hold back our attention. Where there can be a heat of 60° commanded, *Bush Beans* can be easily grown in pots, and can be gathered in two months from the time of sowing. If there is an abundance of leaves or manure at command, and small frames, beds may be put up for early spring salads at the end of the month. *Radishes* and *Lettuce* are, however, very impatient of too much heat; they will come on well if the temperature be kept at 45°. When it goes above that, the sashes should be lifted entirely off. The same remarks apply to the *Potato* and the *Early Horn Carrot*. *Cauliflowers* in frames require all the air possible. Never allow them to become dry; this is the cause of many failures by way of "buttoning off."

Communications.

PRESERVATION OF FOOD.

BY J. C. BOOTH, PROF. OF HORTICULTURAL CHEMISTRY TO THE PENNSYLVANIA HORT. SOCIETY.

[One of the most interesting of the series of Monthly Lectures delivered before the Pennsylvania Horticultural Society is that by Professor Booth, on *Chemistry as applied to Horticulture*, delivered in August last. The pressure on our space has delayed its appearance; but we are pretty well cleared up now, and shall give the body of the lecture next month. In the mean time we publish the following as an introduction, which was given by the learned lecturer as a note or supplement to his essay proper.

We gave, several years ago, an abstract of Mason's system, and the full details, as here presented, for the first time to American readers, will be read with much interest.—Ed.]

Preserving Vegetable Substances.

PATENT OF ETIENNE MASSON, TAKEN OUT IN FRANCE AND IN ENGLAND, NOVEMBER 12, 1850.

My invention relates to the preparation of those descriptions of vegetable alimentary substances

which are obtained or gathered in a green, succulent or moist state, such as leaves, roots, fruits, and some descriptions of unripe seeds, as distinguished from those which are obtained in a dry state, such as ripe wheat or other ripe grain.

My invention is applicable to a great variety of vegetable substances, and, amongst others, to cabbages, cauliflowers, spinach, sorrel, and green vegetables, generally carrots, turnips, beet root, asparagus, French beans, peas, potatoes, apples, pears, cucumbers, melons, mushrooms, truffles, and many others. I will first proceed to describe my general method of proceeding, and then describe the modifications suitable for particular substances.

My general method of proceeding consists in drying the substances at a moderate temperature, and compressing them into hard, solid masses or cakes, in which state they may be preserved for a great length of time, enclosed in suitable cases; and when required for use, they are moistened or soaked in water, and then cooked in the ordinary manner, or used without cooking, according to their nature. The means which I employ to produce the desiccation consists generally in the application of artificial heat obtained by hot air, steam, or hot water, or by currents of hot air. The different apparatus at present in use for similar purposes in various manufactures, such as hot chambers, ovens, stoves, furnaces, or boilers heated by coal, coke, peat, charcoal, or wood, or by gas, are suitable to be employed in carrying out my invention; and the desiccation may be accelerated, when required, by the natural ventilation produced by the ascent of the hot air, or by a more rapid ventilation produced by mechanical means, or by introducing lime, or chloride of calcium, or other absorbent substance, to absorb the moisture, or even by withdrawing the air and forming a vacuum when practicable. It is sufficient to submit the various vegetable substances which are to be preserved to artificial heat, produced by any of the before-mentioned apparatus, at a temperature and during a time varying according to the nature of the substance and the quantity operated upon. The time will also depend upon the nature of the apparatus and the efficiency of the ventilation, whether natural or mechanical. The temperature which I generally employ varies from 75° to 145° of Fahrenheit's thermometer, and I find that cabbage leaves are dried in from twenty or thirty hours; but I do not confine myself to those particular temperatures and times, as I have already stated that the same will vary considerably according to

circumstances. The desiccation may be accelerated by a higher temperature, but there is more risk of injuring the flavor of the substances operated upon. The substances are supported on shelves of wicker-work, or canvas, or other open material. The vegetable substances thus dried are next submitted to a strong pressure by means of a hydraulic press, so as to reduce them to the form of hard, dry, flat cakes, which are then enveloped in tin-foil and packed in air-tight cases of tin or zinc. In place of a hydraulic press, a screw press or other press may be employed, or heavy weights may be used, or the substance may be passed between a pair of rollers, or any similar means may be employed to forcibly compress them. By these means I am enabled to obtain a large quantity of vegetable substance in a very small space and weight, which is thus admirably adapted for the provisioning of ships and armies and similar purposes. At the same time the hard, solid nature of the cakes prevents the free access of air to the interior, even when the cakes are partially exposed to the air. The mode of using the vegetable substances thus prepared consists in moistening them or steeping them in tepid water for thirty or forty minutes, and then employing them in the same manner that fresh vegetables would be employed. It is convenient to form the cakes with grooves in them to facilitate their separation into rations. This is done by forming corresponding projections or indentations in the plates of the press or dies, or on the rolls employed in compressing them.

I will now proceed to describe some particularities in the preparation of different substances. In preparing cabbages by my process, I first remove the leaves from the stalks, and then submit the leaves to the before-mentioned process, either alone, or after first watering them with vinegar diluted with ten times its bulk of water. The stalks are dried in a similar manner; but, in place of being pressed, they are ground in a mill, and reduced to the state of flour, and then placed in these vessels. Potatoes, either entire, or which are first cut into small pieces or slices, and placed for eight or ten minutes in boiling water, and then drained and placed in the stove or drying chamber. Peas and beans are placed in woolen bags without removing the shells, and are dipped for five or six minutes in boiling water. They are then dried, and removed from their shells, and preserved in close vessels; when mixed with other substances; they are pressed, but when alone are preserved in the whole state. French beans are treated in the following manner:

The smaller ones are taken whole, and the larger ones are divided into strips; and the whole, being enclosed in a cloth, are dipped in boiling water for five or six minutes, then allowed to drain, and spread on the shelves on the drying chamber, and afterwards pressed. Scarlet runners are treated in a similar manner.

In forming the substances into cakes according to my invention, it is not necessary to keep the substances separate, but two or more different substances may be united in the same cake. Thus, a cake may consist of green and red cabbages, and carrots, or of other mixtures of vegetables. In this way various mixtures of vegetables suitable for being cooked together (as, for instance, for making soup) may be prepared, so as to facilitate the operations of the cook. I have ascertained, by experiment, that cabbages and other vegetable leaves lose by drying about three-fourths of their bulk and seven-eighths of their weight, so that the fresh leaves may be considered to consist of one part of dry leaf and seven parts of water. The dried leaves again take up water when immersed previous to use. By the action of the press, I am enabled to reduce the bulk of cabbage leaves so that a package one foot square and four inches thick will contain sixteen pounds weight of dry leaves, equivalent to four hundred rations of about one-third of a pound of fresh leaves each.

The great advantage of my combined process of drying and pressing is, therefore, at once evident, especially for the provisioning of ships and armies, and in reducing the cost of transport.

ORCHARDS IN GRASS.

BY DR. JAMES WEED, MUSCATINE, IOWA.

We began planting orchards in meadow, in this State, some fifteen years ago. To secure a vigorous but moderate growth, that would be likely to endure a severe and trying climate, and the difficulty of employing careful workmen to plough and cultivate the land in crops, were our principal reasons for planting in meadow. Four or five feet circles over the roots of the trees were kept well cultivated for three or four years, when the grass was permitted to occupy the whole ground. Top-dressings of manure have been applied, to some extent, for the mutual benefit of both the grass and the trees, and the latter, as desired, have been uniformly hardy on all suitably dry ground, while many trees in orchards constantly cultivated in crops have been killed.

The past season has afforded us new experience. When the drouth had fairly set in, in June, we said, "Now, if this should continue through the season, the grass may so exhaust the moisture from the soil, as to deprive the trees of an amount requisite to mature a crop." A part of the orchard in which blue grass had excluded other varieties, and thus become unproductive as meadow, had been ploughed up and cultivated two years, and rows of different kinds of summer apples extended across both the meadow and cultivated ground; and, although the fruit on the trees cultivated was somewhat larger than on those in meadow, the crop on the latter was of fair size, abundant, and altogether better than we supposed could be realized under similar circumstances.

On our rich soils at the West, it would be time wasted to advocate "clean culture,"—the question lies between grass and cultivated crops. Sowed crops are inadmissible; the plough destroys the surface-roots, and the growing grain monopolizes the nutriment and moisture.

Those who are impatient in waiting for an orchard, and are willing to incur the risk of losses from blight and severe winters, will plant in corn or other hoed crops. Others who are disposed to be always on the side of safety, and are reluctant to lose valuable trees occasionally when grown, will, we think, prefer grass-culture. They will certainly realize an important advantage from this mode—the fruit, when it drops from the tree, will be always clean, and require no washing, as is the case when it lies on cultivated ground during rains.

[One of our old readers in Virginia, who has been eighteen months in the Southern service, and at length found an opportunity to escape, recently called on us, and being an enthusiastic and intelligent horticulturist, among the earliest of his wants, naturally inquired for the back volumes of the *Monthly*, in order to get posted on the progress of his favorite art during the time he was in darkness and the shadow of death. "Why," he exclaimed, "what is all this about cultivating orchards? They won't do about Salem in grass, certainly. There we always cultivated them, and you should see how they grow, and what fine fruit they bear!" After describing all the fine kinds of South-western Virginia and their many glories, he observed that they were "unfortunately so liable to the bitter rot in that section, that they could scarcely get a fruit fit to eat." This, after all, is the point; for no one questions the growth and beauty of a "well cultivated orchard."—ED.]

ELECTRO-CULTURE.

BY YARDLY TAYLOR, LOUDON, VA.

In an editorial article following my essay on the "Circulation of the Sap," published some months ago, is a request that some of the correspondents of the *Monthly* would give the experiments that have been made in electro-culture. It was, I think, in 1850, that Leonard Scott & Co., of New York, published, in monthly numbers, a work by Henry Stephens, author of the "Book of the Farm," etc., entitled "The Farmer's Guide," and, in No. 18, under the head of "Special Manures," is an article on "Electro-culture." This article is rather lengthy, and, as it cannot well be divided without lessening its value, I copy most of it, and the editor may use it as he pleases.

"Dr. Foster, of Findrassie, near Elgin, was the first to draw the attention of agriculturists to this subject in 1844; and in that year he published the results he obtained in the electro-culture of Chevalier barley, which was increased to thirteen quarters, or one hundred and four bushels an acre, and its straw to about a third more than the usual quantity. Such a result set other experimentors to work, but no one has, as yet, been able to reap similar advantages from similar experiments as Dr. Foster obtained from his; and it is doubtful, in the present state of our knowledge of the subject, that electro-culture will be prosecuted further for a time." The author then goes on to "show the relation which exists between the electricity of the air and the earth—and I cannot do better than in the words of Mr. William Sturgeon, of Manchester, who has bestowed much attention to the subject of electricity in all its bearings.

"It may not be out of place to remind those not accustomed to the study of electricity," says Mr. Sturgeon, "that this active element of nature is so universally diffused through every part of the terrestrial creation, that it becomes an occupant of every part of the earth's surface, and of the shell of air that surrounds it. This general definition necessarily leads to the inference that all the various objects which clothe the surface of the earth—such as trees, shrubs, plants, flowers, and crops of every kind—partake of this electric distribution, and that each individual object is possessed of more or less of the extraordinary element; or, in electrical language, that each is possessed of its natural share. It must not be understood, however, that this natural distribution confers upon different objects an equal share, either in proportion to their magnitude, weight or shape; but, on the contrary,

that each object contains a share peculiar to itself according to its degree of susceptibility of receiving the fluid, or according to its capacity. But, whatever may be the quality due to any individual object, under ordinary circumstances, it becomes exquisitely susceptible of disturbance when the circumstances vary, and whether these be of natural or artificial occurrence. A disturbance of the electric fluid, in any body, may be accomplished either by abstractions, additions, or by merely forcing a part of it to some particular side of the body operated on. In the first condition the body would be *electro negative*, in the second *electro-positive*, and in the third *electro-polar*. These, together with the *natural electric* condition, would appear to number four distinct electric states or conditions that any body or object may assume, according to the circumstances in which it is placed; but, as the terms *positive* and *negative* are expressions which, in a strictly philosophical sense, imply nothing more than the *relative* conditions of bodies, any individual body or object may be *positive* to another, while at the same time it is *negative* to a third. Hence, the only *absolute* electric state that any body can appear in is the *polar*—a condition growing plants must necessarily assume. The various objects which constitute the vegetable clothing of the land are now in precisely the same electric condition, being continually *positive* and *negative* with regard to each other. An oak and an ash tree, for instance, though both, in their ordinary or normal electric states, are not endowed with the same degree of electric force, one being *positive* to the other, and, consequently, the latter *negative* to the former. A similar inequality of electric force occurs among growing plants and their manures, and even among the various elements which constitute the latter, no two of them being precisely alike at the same time. The normal productions of the earth also, as those just noticed, display a diversity of electric action among themselves, no two being found alike. Hence, the particles constituting each and every variety of soil are endowed with a peculiar electric force, a circumstance of immense importance in the contemplation of the vegetable physiologist, and carefully connected with all electro-cultural operations."

"When the electric fluid is in abundance, and in motion, it is accompanied by a development of heat which, in some cases, is of sufficient intensity to fuse the most refractory substances. Electricity, like heat, has its conductors and non-conductors, but in some cases they are different for the two

kinds of force. For instance, charcoal is a good conductor of electricity, but a bad conductor of heat. The metals are the best electrical conductors; but there are many other kinds of matter which rank high in this capacity. Such are trees when full of sap-water, and, consequently, all growing plants, by virtue of the water they contain. Moist land is also a conductor of electricity. Dry sand is a bad conductor, so is dry mould of every kind; but limestone rock and dry chalk are still worse; and dry air is a worse conductor than any of the rest, though moist air is a tolerably good conductor. When the electric fluid meets with a good conductor, it spreads with rapidity over the conducting surface; but when it meets with an inferior conductor, it has to encounter a resistance, which, in some cases, it is unable to overcome; consequently, its forces are limited within a certain range of locality.

“Another grand law of electricity, to be noticed by the electro-cultural physiologist, is the following: In all cases of electrical disturbance, whether the fluid be in act of absolute transfer from one body to another, or traversing conducting channels in the character of currents, or spreading itself over surfaces of moist land or other conducting matter, the transmission is uniformly *from the positive to the negative part*; for in no case can the fluid be transformed from a negative to a positive body, nor from a *negative part to a positive part* of the same body. Hence it is that those parts of the prime conductor of an electrical machine which are in the act of *receiving* fluid from the revolving glass are *negative* with respect to the latter, although at the same time the remote parts of the conductor be *positive* to all surrounding bodies, and whether they be delivering the fluid as fast as they receive it or not. Therefore, the prime conductor is *electro-polar*, under all circumstances, when the machine is at work. Now, as this is a universal law when electric fluid is transmitted from one body or object to another, it follows that the electro-positive state of the air contiguous to growing plants causes the latter to become *electro-polar*, even when they are in the act of transmitting fluid to the ground—their upper parts being negative relatively to the roots, whilst the latter, in their turn, are positive to the contiguous manure and soil, and to which they deliver up the fluid,—or rather such portions of them as are not retained for the expansion and growth of the plants,—as faithfully as the leaves and stems receive it from the air.

“From this train of reasoning, we are led to

some of the most interesting points in vegetable physiology. The electro-polar condition of plants qualifies them, in an eminent degree, for the performance of those operations which develop electro-chemical phenomena; and, what is very remarkable, the laws of this beautiful branch of electricity are rigidly enforced and admirably complied with in the decomposition of carbonic acid gas by thin foliaceous parts; for in this process the *electro-positive* carbon is drawn to the *electro-negative* poles of the plants in precisely the same manner as any electro-negative pole, artificially made, would release the carbon from the oxygen and select it in preference. This remarkable fact, based as it is on the strict principles of electrical action, not only establishes a correct view of the *modus operandi* by which plants are enabled to acquire food through the instrumentality of their foliage, but appears to be well calculated to give a clue to every operation by which vegetables become nourished and elaborate their food, in all the variety of structure they so abundantly and beautifully assume. But as the electro-physiology of the vegetable kingdom has never yet been explored beyond the humble examination of an operation only, any further remarks on a subject so imperfectly understood would be premature in this place; although no doubt can now remain respecting the influence of electric forces in varying, adorning and giving full development to every class of vegetable structure.

“Contemplations on electro-chemical forces, thus disencumbered of complexity, lead, by easy gradations, to many recondite operations of nature, and to the discovery of those hidden actions by which the ever-varying transformations of matter are accomplished. They are well calculated to afford a clue to those atomic operations which, in silent seclusion, select the appropriate materials and convey them to their destination, and elaborate them in the structure of every vegetable tissue that is formed within and upon the surface of the land.”

These observations enable us to understand the principle upon which the electric fluid may be made to operate on vegetation. The plan to obtain it was: to erect poles at convenient distances to support wires (copper wire was preferred), and these wires to pass beneath the surface just below the growing crops, and connect with other poles, these poles to be placed clear of any trees.

“Mr. Sturgeon erected, in 1845, such an apparatus on a grass-plot in the Botanic Garden of Manchester; but no perceptible influence on the grass was known to occur. He erected another on the

farm of Didsbury, on barley and oats, the third crop from the fallow one, and the ridge of oats, both within the underground wire and exterior to it, at the ends of the enclosed plot, was much taller, had stronger stems and blades, and of a far deeper green color than any other plot of oats in the field." "The apparatus erected in Sir Thomas Trafford's field of oats, sown on moss land not thoroughly dried, gave a greater length of straw of ten inches in the early kind of growth. Within the vines a splendid crop of thistles had sprung up. At Kirby Lonsdale the apparatus was erected on a green field," and the mowers considered the grass much heavier when they came to cut it. "At Casterton Hall the apparatus produced no improvement; or, if any, very slight."

"The conclusions that may be legitimately drawn from the use of electric wires in cultivation are: that in cold, dry, easterly winds, the ground becomes so dry and hard, that, although the air be charged with the electric fluid, the dry ground can neither receive nor distribute it; that when the air is dry over the crop, it offers a considerable resistance to the dispersive tendency of the fluid, so that the points of the leaves and stems of the growing crop cannot obtain sufficient quantity of the fluid to stimulate them beyond or during vegetation; and the only part of the crop that does secure it in excess is that immediately round each pole, that genial showers, laden with electric matter, soon saturate the land with moisture, rendering it a good conductor, and supply it abundantly with the electric stimulus; and that moist air, losing its insulating quality, becomes more uniformly charged with the electric fluid to a great height above the surface of the land, and yields it without measure to the pointed and sharp-edged leaves of the corn and grass, as well as other conductors more elevated in their vicinity."

Those who are in the habit of making observations know that in certain states of the atmosphere electric manifestations are not uncommon. I have often observed electric sparks in taking my clothes off before retiring for the night, and many times have seen such sparks follow the curry-comb in currying horses after dark, and we all remember hearing, that during a brilliant aurora, the wires of one of the telegraph lines to the north were worked for two hours, entirely by the electricity of the atmosphere.

An electrician, of the name of Crosse, in England, erected wires high over the trees of a forest near his house, and then passed them into a room, where, with a short space between, there were other

wires to convey the fluids away. As the fluid passed, from one wire to the other, sparks and a report would take place, and thus he could estimate the intensity of the fluid. In this way he considered he could analyze a thunder-storm; for, on the approach of one, before the body of the cloud was overhead, there would be discharges, at first slowly, then more frequent, and after each discharge there would be a reaction or negative movement, and he was led to the conclusion that, surrounding the cloud, there was a zone of positive electricity, and then a zone of negative, and then a zone of positive again alternately, until the body of the cloud approached, when there would be almost a continued stream of electricity, with such flashes and reports as to be really alarming to those unaccustomed to such things. After the passage of the body of the cloud, the discharge would be less and less frequent, until they ceased entirely. He found that a heavy, drying fog would, at times, manifest electrical action almost as intense as a heavy thunder-storm.

Those who have apparatus for estimating the intensity of electricity at all times of the day report, that it constantly varies, being maximum at one time of the day and minimum at another. Taking all these facts into consideration, I see no reason to conclude, as some have done, that electrical action is not active enough to answer the purpose of decomposing the carbonic acid in plants; but, on the contrary, it seems to me to be perfectly adapted to the purpose, and entirely consistent with the simplicity of nature's operations.

NOTES ON OLD STANDARD KINDS OF DAHLIAS.

BY J. M.

In looking over a collection of more than one hundred varieties of dahlias, previous to removing them to the cellar for winter quarters, the following twelve seemed to me to be superior to any of the others: Mrs. Edwards, fine, large-flowered, purple; La Prophete, rose; Prince Albert, creamy-white, tipped lilac; L'Original, brick-red, large, fine; Pre-eminent, dark purple, very fine; Kleina Phantast, yellow, tipped purple; John Brown, very fine, medium size, black color; Triomphe de Roubaix, sulphur, tipped cream; Madame Zahder, yellow, light purple tip, fine; Bilderduyk, fawn, tipped rose; Mons. Adrien Carmail, ochre-yellow, first-rate; Madame St. Laurent, cream, edged red. To make twenty-four, I would add the following twelve, which were selected more with regard to

variety than the preceding number, although the first twelve would be found different from each other: Omar Pacha, deep crimson, full; Antipator, brick-red, tipped white; Beauty of Versailles, dark maroon; Yellow Beauty, good; Jessonda, sulphur-yellow; Grand Duke, lilac, full; Dr. Gullez, yellow, tipped rose; Figaro, red; Lady Cathcart, creamy-white, tipped rose; Mrs. Shaw Lefevre, red and white, striped; Kant, white; Grand Sultan, velvety purple. I have found dahlias to vary very much at different seasons. At times the variety that has been first-rate the succeeding year will appear almost worthless. Still there are kinds which keep up their reputation from year to year, such as Pre-eminent, Lady Cathcart, Beauty of Versailles, Triomphe de Roubaix, and the majority of the sorts named, which may be relied on as furnishing every year at least medium quality flowers. Mons. Adrien Carmail I consider the finest of the whole. It is very perfect, and has proved good three years in succession. I usually leave my plants out till the foliage is destroyed by frost. Starting them in a hotbed in spring and rooting the young tops by cuttings, plant them out towards the end of May. A cool, moist soil is what they prefer. In fact, it is hard to get them to grow in any other and produce good flowers. It being one of our latest fall flowers, makes it a most desirable plant, and the frequency of its being met with, proves it to be appreciated as such by lovers of good fall flowers easily kept in winter.

NEW STRAWBERRIES.

BY WILLIAM S. CARPENTER, NEW YORK.

A marked progress in various kinds of fruit is apparent, and I think the grape may claim our attention as one of the most valuable. The strawberry is becoming a great favorite with us, and we think we have a decided advance, as we have a monstrous berry combined with the fine flavor of the fine varieties. They are the most promising plants I have in my grounds. We have also two new varieties from Australia,—one a monthly, of large size, fine flavor, and very productive, bearing a heavy crop in the fall; the other very large and quite remarkable.

LIST OF PEAR TREES.

BY NOVICE.

The accompanying list of pear trees, prepared at the frequent instance of friends proposing to plant, may be of interest to some of your readers.

Although there is not, in the entire catalogue of pears, one single unexceptionable variety, (the Seckel approaching most nearly to the standard of perfection in tree and fruit, yet objectionable from its small size and tardy bearing,) it is still a matter of no small difficulty to select, from the large number of really good sorts, a list of moderate length suited to the wants of most amateurs and of those planting with a view to profit. Every such list is open to objection and criticism. The favorite fruit of the reader may be omitted or classed only "good." Some varieties are, perhaps, named that have been tried and do not succeed in certain localities, soils or treatment.

In preparing this list reference was had, first, to quality, next productiveness, then succession, and, lastly, variety of flavor. On this last point a few words of comment may not be inappropriate.

We are all prone to recommend to friends such flavors as please our individual tastes; in selecting varieties for our own planting, we are apt to choose more of our "especial favorite" than either family, friends or the general public would approve.

Certain flavors, also, seem to have a local prevalence. Boston pronounces for the "vinous" and Philadelphia for the "saccharine." The Beurré Superfin is as surely the type of high flavor in modern Athens as is the Washington with our sober Quakers. This one-sidedness of opinion or of taste should be avoided in the selection of trees which are to yield fruit and furnish enjoyment to a generation or more of consumers and to gratify tastes as various as the fruits themselves. The orchard should, at all seasons, offer at least two marked varieties of flavor, in eating at the same time, so as to satisfy most, if not all, tastes. In the summer Doyenné d'Été and Manning's Elizabeth, sweet pears, will be preferred by many to Beurré Giffard and Brandywine, high-flavored, vinous sorts. So, in September, the Bartlett and St. Ghislain offset the Washington, Des Nonnes and Flemish Beauty. In October De Tongres and Doyenné du Conice contrast with Beurré Bose and Beurré Diel.

There are many varieties of local celebrity that might well be added to the list, such as Tyson (a shy bearer), Kingessing, Hanner's, Lodge, Beurré Superfin, Andrews, Columbia, and many others, and so swell the list to inordinate proportions; but it is believed that the selection named will give a most desirable succession and variety of truly good pears, such as would sell in any market and well grace any dessert. Will other members of your

"parish" take up the theme, and work it up for the general good?

LIST OF 36 PEAR TREES FOR A SUCCESSION.

P best on pear stock; Q best on quince stock; s small; m medium; l large; f first; m middle; l last; g good; v g very good; b best; p productive; v p very productive.

Kind.	Qual-ity.	Size	Yield.	Stock	Ripen.
Doyenne d'Ete,	v g	s	v p	Q	7 July
Julienne,	g	s	v p	P	7 Aug.
Beurre Giffard,	b	m	p	Q	" "
Osbard's Summer,	g	s	v p	P & Q	l "
Manning's Elizabeth,	g	s	v p	P & Q	l "
Brandywine,	b	m	v p	P & Q	f Sept.
Washington,	b	m	p	P	f "
Bartlett,	v g	l	p	P	m "
St. Ghislain,	b	s	v p	P	m "
Des Nonnes,	b	m	v p	P & Q	m "
Flemish Beauty,	b	l	p	P & Q	l "
Ananas d'Ete,	b	l	p	Q	l "
Buffum,	g	m	v p	P	l "
Doyenne Boussock,	b	m	v p	Q	f Oct.
Seckel,	b	s	v p	P & Q	f "
Belle Lucrative,	g	m	v p	Q	f "
Louise Bonne de Jersey,	b	m	p	Q	f "
Howell,	v g	l	v p	P & Q	f "
Sheldon,	b	m	p	P	m "
Beurre d'Anjon,	b	l	v p	P	m "
Beurre Bosc,	b	l	p	P	m "
De Tongres,	b	l	p	Q	m Oct.
Doyenne du Comice,	v g	l	p	Q	" "
Beurre Diel,	v g	l	p	Q	Oct. & Nov
Duchesse d'Angouleme,	g	vl	p	Q	" "
Urbaniste,	b	m	p	Q	" "
St. Michael Archange,	v g	m	v p	Q	" "
Beurre Clairgeau,	v g	l	p	P	Oct to Dec
Lawrence,	v g	m	p	P	Oct to Feb
Easter Beurre,	b	l	p	Q	No & Dec
Beurre Bachelier,	v g	l	p	Q	" "
Winter Nellis,	b	s	v p	P	" "
Glou Morceau,	b	l	p	P	" "
Vicar of Winkfield,	g	l	v p	Q	" "
Josephine de Malines,	v g	m	p	Q	N't to P'b
Beurre Gris d'Hiver Nouveau,	b	m	p	Q	" "

AMARANTHUS SANGUINEUS.

BY MR. PETER HENDERSON, JERSEY CITY, N. J.

In your October number I observe, under the head of "Foreign Intelligence," that great credit is given to *Amaranthus melancholicus ruber* as a bedder. This summer I have grown it alongside of the *A. sanguineus*, and find it to be very inferior to that variety. In fact, with me, it is but little improvement on the old "Prince's Feather," or "Love Lies Bleeding;" while the *A. sanguineus*, which has been among us for two or three years (though, as yet, but little known), is the most gorgeous-foliaged bedding plant we have here in cultivation. It forms a bush of from one to nine feet in height, and of about the same diameter. The color of the leaves is a rich crimson, towards fall shading to bronze. For clumping on lawns, or planted in borders having a back-ground of green, the effect is novel and splendid.

I observe that this plant has been dropped from

the lists of some of our seedsmen last spring,—surely, not from any want of merit, but possibly from the difficulty of procuring seed. Unlike almost all plants of the order, it seeds very sparingly; but, as it strikes freely from cuttings, it can be kept over as easily as *Coleus Verschaffelti* or other plants of that nature.

PENNSYLVANIA HORTICULTURAL SOCIETY.

DISCUSSIONAL MEETING, OCTOBER 7, 1863.

Mr. Satterthwait in the chair.

The Essayist for the evening, Mr. Wm. Saunders, not being present, Mr. Walter Elder presented the following:

THE CONSTRUCTION OF GLASS HOUSES.

Glass houses will be differently constructed to suit the various purposes for which they are erected; greenhouse and hothouse may be similar in many respects, but will differ from grapery and orchard-house, and they will vary from conservatory, propagating-house, and forcing-house for culinary vegetables.

It will be difficult to fully detail all the modes in an essay of limited space; but the essayist's extensive travel and practical observation, coupled with his powerful intellect, fit him for the task.

The best materials for the dead walls of glass houses are well-burned brick and good mortar. Their close build gives them power to resist cold. Brick is easily transported, and is well fitted for different thickness of walls. It makes a smooth outside surface, and is easy to plaster inside. When it looks old, it can be made new-like by paint. The best material for the frame-work above the walls is wrought iron, and cast-iron pillars to support the roofs where needed. A less body of iron is needed than of wood, and there will be less shade. If iron was generally used, our foundries and rolling-mills would be prepared to make laths, sills, uprights, &c., of suitable dimensions, and the cost would be small. The glass for common roofs should be made for the purpose, and every pane should have a slight bend, and in glazing put the concave side uppermost, and waters will be carried down the middle, and not injure the putty. *Fixed roofs* are best for saving wear in giving and taking of air. Brick walls, iron frame-work and supports (kept well painted), and fancy chimney-tops of terra cotta ware, would make glass houses pleasing ornaments to look at. Every glass house, or range of glass houses, should have a cistern to receive the water from the roofs, as no other waters are so beneficial for growing plants as those from rain or snow.

Span-roofs are most economical in regard to the greater number and variety of plants. They give better light and allow a greater diversity of arrangement. And yet shed-roofs are economical for having useful buildings against the back walls; say, furnace and fuel-room, tool and seed-room, space for pots, potting-bench, composts, tying-up sticks, labels, strings, paint, &c., and if the range is long, sash and shutters and hand-glasses will have a place. Such things close at hand are very convenient. A grape-vine arbor may be made over the back buildings. Brick walls for span-roofs may be, for greenhouse and hothouse, 36 to 40 inches high; orchard-house, 2 feet; grapery, 18 inches, and arched under ground, the top of the arches 6 inches below the surface of outside border, the arches at proper distances to plant a vine at each in the inside border, and the roots would spread in both outside and inside borders. Those in the inside would be in the same temperature as the branches, and would support them in early spring until the outside borders got heated by the weather. The walls of propagating-houses and vegetable forcing-houses may go up to the roofs, say three to four feet high. A conservatory, where all plants are growing in inside borders, a foot of brick wall is enough; but where the plants are all in tubs and pots, the brick walls may be higher. The height of conservatory roofs will be to suit the kinds of plants grown, and the shape may be round, oval or square. I prefer rounded ends to conservatory and span-roofed greenhouse and hothouse; but grapery ends are best flat to train the vines up upon them, and so with orchard-house to train trees. Brick walls in front and at the end of shed-roofs should be of the same height as the walls around span-roofs, and all glass above.

I cannot help the essayist better in ventilation than to endorse all he says about it. He will likely give a sketch of *cheap glass houses* and their costs, by which he has given such a stimulus to the culture of the exotic grape-vine. He well deserves the love and applause of all honest men and horticulturists for the skill, energy and perseverance which he has displayed in advancing that branch of gardening. For artificial heat, the iron water-pipes are the best, and it is economy to carry the smoke through the house. A brick flue is best; it takes long to heat and long to cool, and, on that account, it is the best safe-guard against sudden changes to cold during winter nights, and sudden heat by blazing fires. In greenhouse and hothouse, for

plants one to three feet tall, nothing is better than a wooden shelved stage, with iron supports. There is no harbor for worms and snails about it. A bark-pit is best for a moist stove and propagating-house.

Mr. Pollock preferred iron sash-bars to wooden ones; has them in one of the greenhouses under his care (James Dundas, Esq.), and finds them much lighter and more durable. They are of wrought-iron, made many years since, before cast-iron was introduced for that purpose. There is no perceptible bending or expansion and contraction. The roof is curvilinear (nearly elliptical), and covers the lily-house, in which the *Victoria regia* is grown. The wooden roof of the palm-house cost three times that of the lily-house, and is quite inferior. He finds ribbed glass preferable to plain. The light is gentle and mild, and no plants burn. It does not obstruct the light but diffuses it.

Mr. Satterthwait has made use of very thick sheet-glass for hotbeds; finds it will not answer.

Mr. Hibbert—Ribbed glass will not answer for nurserymen and florists, who must grow rapidly large quantities of young plants for sale.

Mr. Eadie—Plants burn in February and March, but not in midsummer.

Mr. Pollock—In the palm-house, covered with plain sheet-glass, the plants burn in lines or streaks across the house, owing, doubtless, to defects in the glass acting as lenses.

Mr. Graham—My camellias burn in summer. The glass is best double thick American, without flaws, yet the leaves burn.

Mr. Harrison alluded to the advantageous use of the attic story of a dwelling-house, which, at a small expense, could be covered with a glass roof and converted, from a garret or lumber-room, into a greenhouse, easily heated by the ascending air from the dwelling, and rendered a delightful place of resort. Houses have been so constructed with entire success.

In answer to an inquiry, several of the practical members stated their preference for low fronts to graperies and forcing-houses, as more retentive of heat near the ground. The majority also preferred the fixed to the sliding sash-roof, as being cheaper, tighter, and allowing of larger glass, lighter astragals and more light.

Mr. Graham has both; can keep fixed roof, with good front ventilation, cooler than the other; opens the ventilators at top about 1½ inches, syringes well morning and noon, and sprinkles the walks two or three times daily. In spring applies a light coat

of benzine and white-lead. The snows wash it off in winter.

Mr. Hibbert has experienced great difficulty in removing the benzine and lead! There is nothing better than white-lead and oil, with the usual driers.

Mr. Kilvington uses the old-fashioned sash-roof, and prefers it to the fixed roof with no top ventilation. A friend has a house with fixed roof, ventilated only over the doors at each end, which is a failure. Backhouse & Son, of York, England, have a fine grapery, ventilated through the back wall into another house; there are no currents of cold air, no mildew, and plenty of grapes.

Mr. Harrison—The top ventilation of most glass houses is very ill-contrived; it should be uniform and continuous along the whole length of the roof. A simple arrangement of shaft and levers, invented by Mr. Hochstrasser, of this city, enables a man to lift, easily, with one hand, the top sash of a house one hundred feet in length. Sugar of lead is an excellent whitewash for the glass.

Mr. Éadie—The fixed roof is most economically heated. Knows a gentleman who altered his roof from a sliding sash to a fixed one, and saved three-fourths in coal; used four pipes for heating, now requires but one. One of our best horticulturists put up a house for growing grape-vines, with no ventilation, except over the door, but he had to alter it.

A member, who had tried it, disapproved of the use of putty in glazing roofs. The glass should be well bedded in thick white-lead and oil and lapped as little as possible—an eighth of an inch is all-sufficient.

THE DESTRUCTION OF INSECTS IN GARDENS AND PLANT-HOUSES.

[Concluded from page 334.]



Conspicuously in the list of natural remedies, which should be fostered and protected in the garden and plant-house,—if they are not actually introduced there,—are the *Hemerobiids*, better known by the common name of "Lace-wings," belonging to the order *Neuroptera*, which also embraces many other predaceous species, especially the "Dragon-flies." It is the larva of the lace-wings that feed upon aphids; and, in form they

approach that of the larva of the lady-birds, except that they are smaller, of a lighter color, and are distinguished by a moderately large pair of caliper-shaped mandibles. These lace-wings usually deposit their eggs on the leaves near where the aphids are feeding, and they may easily be distinguished from the eggs of other insects, from the fact that each one is attached to a slender foot-stalk, about half an inch in length, looking more like a delicate species of fungus than like the eggs of an insect. These eggs, when discovered in localities where they are likely to be of little use, may be easily removed to the plant-house and placed on such plants there as are infested with aphids, where, when the young are hatched therefrom, they will prove an efficient self-acting remedy, performing the work of destruction to the aphids, with far less injury to the plants than by the employment of artificial means. Doubtless many of you have observed these larvæ of the "lace-wings" running over your plants and shrubbery many a time, without knowing precisely what they were, or what they were in pursuit of. Many years ago I discovered a single individual in the midst of a large colony of stupid aphids, slaughtering them from right to left, with as much merciless energy as that which characterizes a Cincinnati pork-butcher, seeming to regard the task before it finished only when all the aphids were destroyed. It would seize an aphid, raise it up off its feet, and penetrate it with its sharp-pointed mandibles, through which—being hollow for that purpose—the whole internal substance was sucked out, leaving nothing but the empty skin, which it would toss aside like you would the skin of a grape, and immediately seize another, treating it in the same way, and so on to the end of the chapter.

Seeing that this insect was doing good service, I took it home and confined it, where I supplied it with aphids for a few days, when it spun itself into a little globular cocoon about the size and color of a common pea, from which issued forth, in about fifteen days thereafter, the beautiful and delicate little gold-eyed, greenish-tinted lace-wing fly, called by entomologists the *Chrysopa Harrisii*.

In addition to the foregoing, there are many other insects of a beneficial kind, that are destructive to the noxious kinds, among which prominently are those voracious and vigilant day-flyers "Dragon-flies," which destroy many butterflies and day-flying moths, as well as others that come in their way. If you should find any of these dragon-flies in or about gardens and fields, you need have no apprehensions at all in regard to them, for they

are there solely for the purpose of capturing some other insects, upon which they feed, which may have preceded them there. Their powers of sight and flight are such that it is difficult for any insect to elude them, except by creeping into a place too small for them to follow, or for any thing to capture them in turn. They, however, confine themselves principally to the capture of insects on the wing.

There are several species belonging to the order *Hymenoptera*—which includes all the various kinds of bees, wasps, hornets, saw-flies, cuckoo-flies, ants, &c.—that are exceedingly destructive to other insects in one way or another. The genus *Platygaster* and its allies are especially destructive to aphids, depositing an egg or two into the body of the female aphids, which arrests their further procreative functions, and ultimately destroys them. The "parasitic Hymenoptera" are very numerous, there being a multitude of other insects that are subject to their attacks, in either their larva or mature state. These insects constitute a natural remedy of a more valuable and wider extent than the unassisted mind would dream of.

A very prominent parasite belonging to this "order" is the *Trogus fulvus* of authors, which destroys the larva and pupa of *Papilla Asterias*—the black and yellow-spotted butterfly, whose green and black-spotted larva is usually found on parsley, celery, parsnips, and other umbelliferous plants.

But, where natural remedies do not exist, or are not available, or are too feeble and inefficient in their effects, for the destruction of noxious insects, then artificial remedies must be sought out and resorted to. On this point, I regret to say that I am almost at an entire loss to offer any suggestions that are based upon my own experience; for it so happens that since I have given any attention to the subject of entomology, I have never possessed a garden wherein to experiment in this way; and, indeed, my earliest labors, and when I would have had time to attend to this phase of the subject, were devoted exclusively to the collection of insects, and such incidental observations upon their habits and history as is necessarily connected therewith. What I may, therefore, offer in this behalf must necessarily be founded more upon the experiences of others than upon observations of my own. Mr. John Zimmerman, of Lancaster city, who has had some years of experience in plant-house culture, and who makes a business of it, finds that among all the remedies which he has tried for the destruction of aphids, cocci and acari, nothing has been so effective as the fumes of strong tobacco. On visiting his plant-house on several occasions during

the present season, after those tobacco fumigations, I have found that nearly all the aphids were dead, at least all that had been reached by the fumes. Sometimes the aphids on those plants low down, or on the floor of the house, are not so effectually destroyed as they should be, or escape altogether. In order, therefore, to reach and destroy all of these noxious insects, it is only necessary to make a change in the position and situation of the plants. Those more elevated should be brought down after they have been thoroughly fumigated, and those beneath should be elevated, in order that they, too, may be brought within the influence of the fumes. These tobacco fumigations are also beneficial, to a certain extent, out in the open air, but, of course, where the fumes can be confined for a definite time within an enclosure like a plant-house, the effect will be more satisfactory, and the destruction of our insect foes will be more complete. It would, perhaps, be well to experiment with the burning of different substances as fumigators, in order that the best and cheapest, for a specific purpose, may be employed. The "Red Spider," a species of *acari*, a very minute animal, not strictly included in the catalogue of insects, is not so easily reached by fumigations as the aphid is, for the reason that it is so very small—scarcely perceptible to the naked eye—and adheres so closely to the leaf of the plant, with its beak buried so deeply in it as to make it difficult to dislodge and destroy it. For the destruction of these pests, I believe syringings of tobacco decoctions would be, perhaps, more effectual. Decoctions made out of the blossoms of the *Ailanthus* is a good insect-destroyer. I believe this tree has few or no insect enemies that feed upon its foliage or bore into its wood; and it is a remarkable fact, that when it is in bloom, thousands of dead insects, of many kinds, may be found beneath the tree, brought hither, no doubt, by some attractive poison in the flowers. A writer from the "Dry Tortugas," on the coast of Florida, says that the *Ailanthus* tree—the only one growing upon that "sand-bank"—is death to the insects found there, among which conspicuously are the "mosquitoes and the gallinippers." I have myself experimented with a decoction of the flowers of this tree, to a very limited extent, upon aphids, with good effect; and I have seen it recommended for the destruction of the common "rose-bug" (*Macroductylus subispinosus*) and the "striped bug," so injurious to young cucumber and melon plants (*Diabrotica vittata*).

In Mr. Zimmerman's plant-house were many of those depleting insects known as the "mealy coe-

eus" (*Coccus adonidum*), which were also effectually destroyed by the fumigations of tobacco. The roots of plants become also sometimes infected with a species of *aphis* called the "white aphis" (*aphis radicis*). The presence of these insects is manifested by a gradual wilting of the leaves of the infected plant, or a change in the color of the leaves from a green to a yellowish-green. If the earth is scraped away at this time, and the roots examined minutely, these insects will be found in great numbers, adhering closely around the base and along the larger branches; and if a decoction of tobacco or a solution of soap be applied judiciously, the plant may be saved. If the plant is a valuable one, it may be worth all this trouble; but if otherwise, perhaps the shortest and most effectual remedy would be to raise it carefully out of the ground and throw it into a fiery furnace.

Perhaps the surest remedy (and, in many instances, the only one that can be resorted to with any prospect of success) is to destroy insects and insect larvæ by hand; and any way that is calculated to effect this the easiest, the most complete, and with the least injury to the plants, must be regarded as the best. To an experienced gardener, the experience and the progress of the plant will often indicate to him whether it is infected or not, and will, at the same time, suggest what is best to be done. If larvæ are destroying the foliage, they can be easily detected and dislodged; but if the roots and stems are the parts attacked, then, in the absence of a better remedy, the best thing that can be done is to pull them up, and, having found the larvæ, to destroy them immediately, lest they might escape to other plants and continue their depredations.

"Cutworms" can be only effectually exterminated by digging down an inch or two into the earth, near the plants which they have cut off, to find them coiled in a ring, only waiting for approaching darkness to sally forth and to depredate upon other plants. When thus found they must be destroyed by hand, if no other artificial remedy has been effectually employed.

But all this is an oft-told tale, and it seems like sheer presumption for me to repeat it here, in the presence of men who must necessarily, from their positions and avocations in life, be far better informed in these things than I can possibly be.

I do not know any work that is exclusively devoted to the history, the economics, and the destruction of the noxious insects which infest gardens and plant-houses; but there are a few works in the English language that treat of noxious in-

sects in general. Vincent Koller's "Treatise on Insects Injurious to Gardeners, &c.," although a foreign work, possesses many useful hints to the American gardener and plant-house culturist, and ought to be in the library of every Horticultural and Fruit-growers' Society. Nearly all the insects described in that work find their analogues on the continent of North America, and are very similar, not only in their "modes and manners" of life, but also in their size, their color, their form, and their general appearance.

Koller wrote his work as early as the year 1837, under a commission from the Austrian Government for that special purpose, and yet very little has, since that time, been elicited in reference to many of the insects therein described.

The late Dr. Harris' "Treatise" is one of our most valuable works on this subject; and if his contributions to the various agricultural journals and the proceedings of the various Natural History Societies in the United States could be brought together and published in an accompanying uniform volume, I know of no two other volumes, on a similar subject, that would be more valuable to a horticulturist's library.

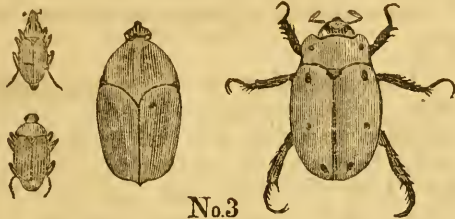
Dr. Asa Fitch's Reports to the "New York State Agricultural Society" are also very valuable works in this behalf, and go more into details and describe more species of the same *genus* or *family* than Harris' work does, but his remedial suggestions may not be as numerous and as practical as those of the latter. These Reports ought also to be in every horticultural library.

The Proceedings of the "Entomological Society of Philadelphia" contain many useful things to the gardener and flower and fruit-grower, because they embrace the history—so far as is known—of *all* American insects, whether beneficial or injurious, although they do not pretend to deal in remedies any further than the economy of one insect may be an antidote against the encroachments of another.

I must, therefore, in conclusion, refer the members of this Society to the works above-named, and to other scattered contributions upon the subject, for those remedial agents necessary for the arrest of noxious insects or for their entire destruction.

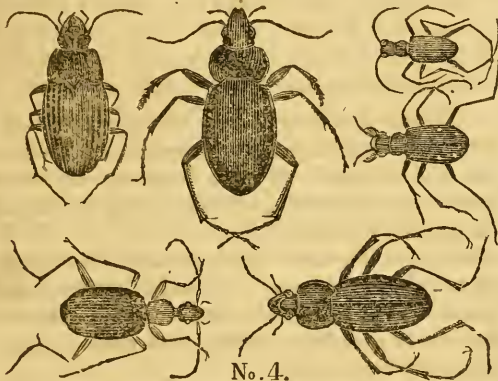
In order to illustrate those parts of this essay that allude specifically to destructive or beneficial insects, I have placed a few, correspondingly labelled, in an accompanying box, in order that those persons who may be entirely uninformed upon the subject may be able to form a practical idea of

them, and may learn to recognize them when they see them abroad. With these remarks I bring this—perhaps unnecessarily-prolonged—essay to a close, and submit it to your respectful consideration.



No. 3

No. 3 is a group of "herbivorous" *Coleoptera*. Insects feeding upon the roots and foliage of vegetation.



No. 4.

No. 4 is a group of "cursorial" *Coleoptera*. Insects that are carnivorous in their habits, and therefore friends to vegetation.

NOTES ON THE TUBEROSE.

BY PROF. ASA GRAY, CAMBRIDGE, MASS.

I venture to offer a few remarks upon your article relative to the *Tuberose*.

1. It must have been by pure accident that so cultivated a writer as Mr. Rand has fallen (as you state, for I have not seen the book) into the vulgar error of *Tube Rose*, for *Tuberose*. The name came, without doubt, from the phrase, *Hyacinthus Indicus tuberosa radice*, by which Clusius first made the plant known to botanists.

2. For the early history of the plant, I would refer you to the elaborate memoir of Salisbury, in the first volume of the "Horticultural Transactions," which has escaped your notice. Some extracts from this memoir would still be interesting to the readers of the *Gardener's Monthly*.

3. In mentioning Heister, who was a contemporary of Linnæus, you lead us to infer that he lived a full century earlier.

4. Linnæus, you rightly remark, instituted the name *Pollanthes*. He writes it so in all the editions

of the "Genera Plantarum;" but it is curious to see that in the index of the second edition it is entered as *Polyanthes*, perhaps by some pupil who fancied he was correcting an erroneous orthography. It should be mentioned, however, that in one of the very earliest of Linnæus works, the "Hortus Cliffortianus," the orthography is *Polyanthes*. Very likely this may have been the work of a proof-reader, correcting what he took for a typographical error. At any rate, Linnæus ever after carefully wrote *Pollanthes*. Although he never explained the etymology of the word, so far as we can learn; yet, in the words of the *Botanical Magazine*, it is generally understood that it was composed of Πολις, a city, and άνθος, a flower: the flower for city cultivation, perhaps.

I notice that Link, in 1832, reverted to the name *Polyanthes*, and that Kunth, in 1850, followed him. But no reasons are assigned.

5. This, the traditional explanation (which by no means originated with Sweet), may be "labored and far-fetched;" but it seems to me much less so than that which derives the initial word from Πολις, and connects it with the plant called Πολιός, by Hesoid and Theophrastus, and *Polium*, by Pliny. For, in the first place, the normal meaning of that Greek adjective is *hoary*; and, in the second, Linnæus implicitly followed the old herbalist in identifying the *Polium* with a hoary-leaved species of *Teucrium*, *T. Polium*, *L.*

6. In Dr. Pickering's volume alluded to, I find (on p. 144) nothing which implies that the *Tuberose* has been cultivated in Egypt "for a long series of years," and before it was common in Europe; nor does he discredit the opinion of its American origin. The evidence in this respect, as adduced by Salisbury, is somewhat strengthened by the later discovery of *P. gracilis*, which Link conjectures to be perhaps the wild state of the *Tuberose*, in Brazil, and of a supposed third species, *P. Mexicana*, in Mexico.

[As an instance of how we are often led into error by the ill-timed kindness of proof-readers, we may remark that in our article on the *Tuberose*, we wrote "Sweet's Hort. Bot.," abbreviated for "Sweet's Hortus Britannicus," which was filled out by the compositor to "Sweet's Horticultural Botany," and overlooked in the proof-reading.

We will give in a future number extracts from Salisbury's memoir, and are very much obliged to Dr. Gray for his notes, which we cannot use better than by inserting in the form he furnishes them. —ED.]

The Gardener's Monthly.

PHILADELPHIA, DECEMBER, 1863.

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PROTECTING GLASS STRUCTURES IN WINTER.

Years ago, one of the first things to provide after building a glass house, was a supply of shutters. Every house of consequence had shutters fitted for them to use in very cold weather; and all who have used them know how effective they were in keeping out frost, although but half a house was covered with them.

As, however, labor became high, and coal became cheaper, and the best means of economizing heat became better understood, shutters have, to a great extent, fallen into disuse; and most persons have found it cheaper to use more heat, so as to allow for waste, than to spend so much on labor. But it was not merely a question of labor. The heat under the glass would melt some of the ice above, and the water running down freezes and fixes the shutter to the glass, so that frequently shutters could not be removed till mid day; and in dull, cloudy weather, often not at all for days together. The great loss of light was found, in practice, to be poorly recompensed by the saving of heat; and this, also, is one great reason why shutters are unpopular. There are many other objections, which we need not enumerate. It is enough to say that shutters have gone out of fashion; but not because of the principle not being a valuable one, but from the difficulties of practice.

But now coal is gone up, and labor, if it can save heat, again becomes profitable; and if some practicable means of using wooden shutters so that none of the old objections against them could obtain, the discoverer would deserve the unanimous thanks of American horticulturists.

We give the following note, from Dr. James Weed, of Muscatine, Iowa, a prominent place, because it seems to lead to a practicable idea. If temporary rafters could be set on the glazed roof, and on these horizontal rollers, supporting a movable wooden roof, be made to run—the whole roof

being made so as to be taken off instantly, and at once daily if necessary—the labor difficulty and the freezing of shutters to the house by running moisture could probably be easily avoided.

Mr. Weed's letter was not evidently intended for publication, but we have taken this liberty with it in view of the vast importance of the ideas it suggests:

"I was gratified to learn, from your comments on my last communication, that you regard my method of protecting trees with some degree of favor. During my twenty-four years' residence in Iowa, I have devoted much thought in leisure hours to devise some means of protecting glazed structures against hail-storms and the extreme cold of our winters; but I found the subject a difficult one, and the fact that, in most cases, no external covering of such structures is used, induces the belief that others have found it equally difficult.

"Becoming convinced that all the purposes of the orchard-house, so far as concerns the production of fruits, could be even better accomplished by an opaque structure, affording precisely and all the protection required, I have applied myself assiduously to the varied applications of this principle to different purposes in different locations, and have obtained, as I think, the best possible shutter that can be used in protecting forcing-houses, hot-beds, cold frames, &c.

"Imagine a lean-to house, twelve feet high, sixteen feet long, same length of rafter. Over this place joists two by eight and sixteen feet long, two or four feet apart, and four to six inches above the glass; bridge up and cover with stock boards one inch thick and one foot wide; put on in the same manner as siding on the walls of a house. The two end joists—or, more properly, rafters—have rockers firmly attached, on which the shutter is turned over or rolled off the house. The joints in the lap of the boards are now closed on the inside with pitch or coal-tar, making an air-tight covering for the roof, which may be thus used single, or, if greater protection is desired, the rafters may be boarded on the outside, making a double covering, with a perfectly air-tight cavity between. This shutter, by the aid of the rockers attached, is rolled on and off, in still weather, by the pressure of a man's hand, and, when windy, the shutter is held steady and moved on and off with a cord and small windlass. If desirable to increase the length of the house, say to thirty-two feet, another rocker is used, and the middle one works in an opening in the outer wall and lower half of the roof, which

opening is closed after turning the shutter on or off the house.

"Is it not an object in cold nights to thus place forcing-houses in a similar situation to that in which Wardian Cases are used, to wit: inside and under the protection of efficient non-conducting walls."

TO PROMOTE FRUITFULNESS IN TREES.

It is remarkable how long it takes mankind to learn. The letter of our Paris Correspondent, given in our last, is very suggestive on this point.

Every gardener knows, that when he trains a *Bignonia venusta*, or, indeed, any other climbing vine, up a rafter in his greenhouse or conservatory,—be that rafter ten feet or thirty,—the vine does not flower well until it has reached the whole rafter's length. Then it sends out its side shoots, and from these the flowers hang in wild profusion.

And it has long been remarked and often a subject of speculation with the curious, that the Evergreen Ivy, Virginian Creeper, Trumpet Vine, and other climbers, never flower until they reach the top of the tree or wall that supports them. When once the summit is reached, flowering branches appear all up along the sides, and in every direction from bottom to top.

The reason of all this is obvious. Climbers only grow well when they have something to cling to. When they reach the limit of their support, growth is arrested, and with arrested growth comes the flowering condition.

There is no doubt that this is the real reason of grape-vines flowering so well and bearing such bountiful crops of fruit whenever a strong branch manages to get on a neighboring tree. Their growth is encouraged by the congenial support; till reaching the summit of the tree, or perhaps only the summit of some extending branch, the great growth is arrested, and a profusion of fruit is the natural sequence.

Long before the *Gardener's Monthly* was thought of, the writer advocated the horizontal training of grape-vines in vineries, in the horticultural periodicals of the day; but we do not know of more than one instance of the idea being adopted in our country, and that was by Mr. H. W. S. Cleveland, who at that time had a country-seat at Burlington, New Jersey. The last time we remember talking with Mr. Cleveland he gave an encouraging account of the experiment. But that was many years ago, and Mr. Cleveland moving somewhere (to Massa-

chusetts, we believe), we have never heard of the ultimate fate of that vinery.

The great vine at Hampton Court, in England, is one of the wonders of the world. Many theories have been advanced to account for its wonderful age in such extraordinary productiveness; but how much of it all may not be owing to the horizontal training necessary to make the one vine fill a large house?

Independent of all this, the advantage of making pears bear well by bending down the branches is well known, and the French have one of their most popular systems of fruit management founded on this practice. In the face of all this, and much more to which we need not refer the reader, a Mr. Hossbrink comes forward and sets all France together by the ears on the wonderful mysteries of making fruit trees productive by arresting growth and bending down the branches!

Behold how great a fire a little spark kindleth! But yet let us rather rejoice that the fire has been kindled, than repine that, with all our attempts the blaze of improvement started not. Possibly the great truth will now impress itself on the dull-est apprehension, that horizontal training is one of the great secrets of productiveness, and that that system of pruning—whether it be of the grape-vine or any other fruit tree—which conduces most to vigorous horizontal growth will be most popular and most perfect.

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.

DRYING FLOWERS IN THEIR NATURAL FORMS AND COLORS—*Constant Reader, New York.*—

"After reading the interesting account of 'Drying Flowers in Sand,' in your November number last year, I tried it, and with so much success that I felt that a flower had but half fulfilled its destiny that was not dried! I spent many hours, and even days, in the delightful occupation, and my collection was large and valuable; but when the warm, damp weather we had last summer came, my flowers all faded and lost their beauty, even those that were under glass.

"Is there any way of keeping them longer than six months?

"I also tried the skeleton leaves and ferns, and

find they often become quite ruined by the lime before they are white. That they can be made perfectly white I know, but it is not by the recipe in the *Monthly*. I have given months of patient trial, with but poor success. Will not some of your readers be kind enough to give us the process of bleaching ferns and leaves? Also, what flowers and seed-vessels will answer for that purpose?"

[The translation we give in our first volume, of the best German method, and from which most of the paragraphs that have appeared in the public prints since have been compounded, is, after all, one of the best accounts published. So says a friend who got from it her first lesson, and to whom we handed our correspondent's letter. We received the following note in reply, and shall be very glad to have further accounts from those who have been successful:

"Take a small paper box about eight inches square; put on the bottom, about one inch deep, the sand; let the flowers have a stem about three-quarters of an inch long, to stand them up in the sand; with a funnel with the point about one-eighth of an inch in diameter let the sand gently fall around the flower until covered about one-half an inch; place them where it is not hot enough to burn, and to remain from two days to one week, according to the flower. Tilt the box, and let the sand run off, and the flower is done. Black sand is the best to use. For bleaching ferns, Labraque's solution is the only liquid to be used by amateurs. The reason the ferns were ruined was on account of the solution being too strong."]

ONIONS—*O. H. K., Itasca, Anoka Co., Minn.*—"I fear I shall be an intruder, owing to my natural inquisitiveness; but having to-day gathered a small crop of Weathersfield Onions, one-half of which are enormous 'scullions,' I think something is the matter, and want advice from head-quarters how to avoid such useless things in the future. With 'top onions' I have good success, of course; but in planting the seed of the Red, Silver-skin, and Yellow on the best of soil, I get too many inferior onions, from some cause. Can you tell me 'what's the matter?'"

"I have what we call the Potato Onion. We find them very good for salad in the spring; but they are only eatable for a few weeks. What is the proper method of cultivating them? and is there any way of increasing the size of the bulb?"

"I clip a slip from Buists' Almanac:

"Onion.—Oignon.—Zwiebel. *a.* Yellow Dutch

or Strasburg; *c.* White or Silver-skin; *b.* Large Red or Weathersfield Red.—Sow quite thick in rows, very early in spring, in ground not over rich, to prevent the bulbs attaining too large a size. When the tops die in midsummer, remove them to a dry, cool loft; early in the following spring, plant them on good, rich ground, in drills six inches apart, and two inches in the row. By this process, you have a very large crop."

"Now, when I follow these directions and set the onions the following year, they invariably go to seed!"

[It usually takes two years to get good onions in climates that have long and warm summers. In Minnesota we should think fair-sized onions could be got in one season, and our correspondent's account of his experience confirms this guess. He had better try sowing on rich ground as early in spring as possible and thinly in rows. Onions nine inches across ought to result from the same spring's sowing. We should not be surprised if Minnesota proved to be the great onion district of the United States.]

A NOTE FROM MR. PRINCE.—In reply to a note from Mr. Prince, complaining of remarks in our last, we offered to reserve a corner for a short reply if he wished. His note is too long for the space saved. We are compelled to give only his substance.

He says the Abington Blush is what he got from the raiser as such. This we thought no excuse. The Wizard of the North, which he described in his catalogue as worthless years ago, he now says said description was put in from accounts he saw in English papers. We supposed his catalogue purported to be the result of his own observations.

We thought Mr. Prince had a weakness in an unfortunate style, and in a too great haste to approve or condemn without due observation. We give without comment, his reply. We hope to clear ourselves of any suspicion of injustice or want of courtesy in so doing:

"You say I adopt 'a dogmatic style in approving or condemning.' Truth speaks hastily and positively, whilst ignorance hesitates. As I describe the fruits when before my eye and on my palate, I speak with positive consciousness. Now, to turn to your remarks about my 'advanced age and weakness,' you doubtless intended to render me more weak by laughter. Why, my dear sir, it is my vigor that renders me so 'dogmatic,' as you complain of. And, sir, my grandfather married

his third wife in his eightieth year, and for many years after he rode forth and back on horseback four miles from his farm. And surely every thing is progressive on American soil, and I intend to remind you, when I keep my centennial birthday, of this good joke you have practised on me about my aged weakness at only sixty-eight."

STRIKING CUTTINGS—*G. W. W., Malden, Mass.*
—“For striking, say Manetti on Quince, is there any better way than burying the wood and putting in cuttings out doors in spring? That is slow, and not always successful. Please state the most sure method. If you were to put a strong Manetti in pot or box, say the first of December, over a tank, how long would it take for new wood that would receive a bud? and how early would it be safe to put it out in a frame with glass without any bottom-heat? and if such a plant would not be as far along as layers usually are done in the same way?”

“This is for the purpose of hastening new varieties. Is it practical?”

[Quince and common rose cuttings strike so readily when taken off early in the fall, and set in the open ground, protecting them from freezing and thawing in the winter, that one can want no better way.

For getting a large stock of new roses, there is no better way than by budding them on the Manetti. For general purposes, we would not have roses budded on the Manetti; but we must have them so done if we want the earliest plants, and we should get it on its own roots as soon after as possible. We doubt whether much advantage would accrue from the plan our correspondent suggests.]

“SMALL POTATOES”—*A Brooklyn Reader.*—“In the letter of your Paris Correspondent, the quotation of ‘Small potatoes’ is referred to. I have often wondered how this saying originated, and though it is not fair, perhaps, to tax you with a matter not purely horticultural, yet, as it is associated with a horticultural subject, you may be able to assist me.

“While on such matters, may I ask, is it correct to style a *monthly* magazine ‘a journal,’ as I see writers referring to the *Gardener's Monthly* as such? Excuse the queries; they come from a young reader with a horticultural turn, who wishes to be correct as far as possible.”

[We are glad to find a young horticulturist so critical, and augur his future excellence in his profession as the result of his disposition.

“Small potatoes,” at the present time, is used to signify a mean spirit; but we doubt whether this was the original application. In one of the political pamphlets which were so fashionable during the seventeenth century in England, the author compares those who boasted of their ancestors to potatoes *which had their best part under ground*. Probably the phrase was derived from this, and a person who made a great boast on very slight grounds of his own to merit it, would probably be the “original small potato.”

With respect to “journal,” no doubt it would not have been correct ages ago; but it is so now. Custom gives law to language. Silliman's “Journal” is a bi-monthly, but no one questions the correctness of the term. In old English, *jour* meant “day,” as it does yet in French, yet we have from it “journeyman,” which must originally have meant “one who worked by the day,” now meaning “one who is hired to do mechanical work, whether hired by day, week or job work.”

Language is continually changing in its application. For instance, *oration*, “a public address,” and *orally*, “by word of mouth,” are, no doubt, derived from the Latin *ora*, “a sea-coast;” but what connection the sea-coast has with language, unless one were to guess that the word originated with Demosthenes practising by the sea-side, it would be hard to explain.

These matters are out of our line somewhat, but we notice them to encourage our young friend to persevere in his studies.]

DEATH OF MR. HUGH LOW, OF THE CLAPTON NURSERIES, LONDON, ENGLAND.—There is scarcely an English gardener in the United States who did not know Mr. Low. He was famous for his kindness and urbanity to gardeners visiting him, and, indeed, to all. The writer of this paragraph visited Mr. Low's nurseries, for the first time, about twenty years ago, and though but an awkward and uncouth country boy and an entire stranger, he received a politeness and attention from Mr. Low he has never since forgot.

About forty-five years ago the nurseries were started by a lawyer, who knew little of the business. His managing man was Thomas Blakie, subsequently known in this country as Thomas Hibbert. Mr. Mackie succeeded to Blakie, and Mr. Low was employed as Mackie's foreman. Poor Mackie got ruined by that well-known foe to talent—liquor—and Low succeeded to the management. Subsequently he became partner in the concern, and at length owned the whole. Very rarely, indeed, can

an poor man rise to own a large nursery establishment in England, and Mr. Low's success is a bright monument to the talent and industry of a worthy man.

FORCING STRAWBERRIES—*John Holt, Rock Island, Ill.*—"I want to propagate some strawberry plants for forcing. Will you please inform me, through the *Monthly*, how I can best do it, when they should be potted, and what sized pots to use, &c.?"

[This inquiry, though dated in June, we notice now for the first time in our editorial drawer, and have no idea where it has been tarrying, or when it got in the drawer.

Strawberries should be pegged into three-inch pots as soon as they are caught running, and, as soon as well rooted, repotted into five or six-inch pots. They should then be encouraged to grow as strong as possible, and gradually dried off to prepare them for forcing.]

BROMPTON STOCKS.—A Steubenville correspondent asks how to perpetuate the Double Brompton stock. This is done by cuttings, which root at any season of the year. They are very easy to root in any common garden soil.

APPLES.—We have received a splendid collection of rare apples from Messrs. J. A. Nelson & Sons, Mercer, Pa., of which we are making notes as they ripen.

APPLICATIONS FOR GARDENERS, &c.—Inquiries of this character are very numerous. Whenever we can help our friends, we do so with pleasure. Those who receive no answer to their letters will understand that we have been unable to do any thing in the matter.

CHEMICAL STATISTICS OF ORGANISED BEINGS.

[Concluded from page 344.]

Whence come this carbon, this hydrogen burnt by the animal, this azote which it has exhaled in a free state or converted into ammonia? They evidently come from the aliments.

By studying digestion in this point of view, we have been led to consider it in a manner much more simple than is customary, and which may be summed up in a few words.

In fact, as soon as it was proved to us that the animal creates no organic matter; that it merely assimilates or expends it by burning it (en la bru-

lant), there was no occasion to seek in digestion all those mysteries which we were quite sure of not finding there.

Thus, digestion is indeed but a simple function of absorption. The soluble matters pass into the blood, for the most part unchanged; the insoluble matters reach the chyle, sufficiently divided to be taken up by the orifices of the chyloferous vessels.

Besides, the evident object of digestion is to restore to the blood a matter proper for supplying our respiration with the the ten or fifteen grains of coal, or the equivalent of hydrogen, which each of us burns every hour; and to restore to it the grain of azote which is almost hourly exhaled, as well by the lungs or the skin as by the urine.

Thus the amylaceous matters are changed into gum and sugar; the saccharine matters are absorbed.

The fatty matters are divided, and converted into an emulsion, and thus pass into the vessels, in order to form depots which the blood takes back and burns as it needs.

The neutral azotated substances, fibrin, albumen, and caseum, which are at first dissolved, and then precipitated, pass into the chyle greatly divided or dissolved anew.

The animal thus receives and assimilates almost unaltered the azotated neutral substances which it finds ready formed in the animals or plants upon which it feeds; it receives fatty matters, which come from the same sources; it receives amylaceous or saccharine matters, which are in the same predicament.

These three great orders of matters, whose origin always ascends to the plant, become divided into products capable of being assimilated, fibrin, albumen, caseum, fatty bodies which serve to renew or recruit the organs with the combustible products, sugar and fatty bodies which respiration consumes.

The animal therefore assimilates or destroys organic matters ready formed; it does not create them.

Digestion introduces into the blood organic matters ready formed; assimilation employs those which are azotated; respiration burns the others.

If animals do not possess any peculiar power for producing organic matters, have they at least that special and singular power which has been attributed to them, of producing heat without expenditure of matter?

You have seen, while discussing the experiments of MM. Dulong and Despretz, you have positively seen the contrary result from them. These skillful physicists supposed that an animal placed in a cold

water calorimeter comes out of it with the same temperature that it had on entering it; a thing absolutely impossible, as is now well known. It is this cooling of the animal, of which they took no account, that expresses their *tableaux* the excess of heat attributed by them and by all physiologists to a calorific power peculiar to the animal and independent of respiration.

It is evident to me that all animal heat arises from respiration; that it is measured by the carbon and hydrogen burnt. In a word, it is evident to me that the poetical comparison of a railroad locomotive to an animal is founded on a more serious basis than has, perhaps, been supposed. In each there are combustion, heat, motion; three phenomena connected and proportional.

You see that, thus considering it, the animal machine becomes much easier to understand; it is the intermediary between the vegetable kingdom and the air: it borrows all its aliments from the one, in order to give all its excretions to the other.

Shall I remind you how we viewed respiration, a phenomenon more complex than Laplace and Lavoisier had thought, or even Lagrange had supposed, but which, precisely as it becomes complicated, tends more and more to enter into the general laws of inanimate nature?

You have seen that the venous blood dissolves oxygen and disengages carbonic acid; that it becomes arterial without producing a trace of heat. It is not, then, in becoming arterial, that the blood produces heat.

But under the influence of the oxygen absorbed, the soluble matters of the blood change into lactic acid, as MM. Mitscherlich, Boutron-Charland, and Fremy observed; the lactic acid is itself converted into lactate of soda; this latter, by a real combustion, into carbonate of soda, which a fresh portion of lactic acid decomposes in its turn. This slow and continued succession of phenomena which constitutes a real combustion, but decomposed at several times, in which we see one of the slow combustions to which M. Chevreul drew attention long ago, this is the true phenomenon of respiration. The blood then becomes oxygenized in the lungs; it really breathes in the capillaries of all the other organs, there where the combustion of carbon and the production of heat principally take place.

A last reflection. To ascend to the summit of Mont Blanc, a man takes two days of twelve hours. During this time he burns, at an average, 300 grammes of carbon, or the equivalent of hydrogen. If a steam-engine had been employed to take him

there, it would have burnt from 1000 to 1200 to accomplish the same work.

Thus, viewed as a machine, borrowing all its power from the coal that it burns, man is an engine three or four times more perfect than the most perfect steam-engine. Our engineers have, therefore, still much to do; and yet these numbers are quite such as to prove that there is a community of principles between the living engine and the other; for, if we allow for all the inevitable losses in steam-engines which are so carefully avoided in the human machine, the identity of the principle of their respective powers appears manifest and clear.

But we have followed far enough considerations as to which your own reflections are already in advance of me, and where your recollections leave me nothing more to do.

To sum up, then, we see that of the primitive atmosphere of the earth three great parts have been formed:

One which constitutes the actual atmospheric air; the second, which is represented by vegetables; the third, by animals.

Between these three masses, continual exchanges take place: matter descends from the air into plants, enters by this route into animals, and returns to the air according as these make use of it.

Green vegetables constitute the great laboratory of organic chemistry. It is they which, with carbon, hydrogen, azote, water, and oxide of ammonium, slowly build up all the most complex organic matters.

They receive from the solar rays, under the form of heat or of chemical rays, the powers necessary for this work.

Animals assimilate or absorb the organic matters formed by plants. They change them by little and little; they destroy them. In their organs, new organic substances may come into existence, but they are always substances more simple, more akin to the elementary state, than those which they have received. By degrees these decompose the organic matters slowly created by plants; they bring them back, little by little, towards the state of carbonic acid, water, azote, and ammonia, a state which allows them to be returned to the air.

In burning or destroying these organic matters, animals always produce heat, which, radiating from their bodies in space, goes to supply the place of that which vegetables had absorbed.

Thus all that air gives to plants, plants give up to animals, and animals restore to the air: an eternal circle, in which life keeps in motion and mani-

feats itself, but in which matter merely changes place.

The brute matter of air, organized by slow degrees in plants, comes, then, to perform its part without change in animals, and serves as an instrument for thought; then, vanquished by this effort, and broken as it were, it returns brute matter to the great reservoir whence it came.

Allow me to add, in finishing this picture, which sums up opinions, which, to my mind, are but the necessary consequences and developments of the great path which Lavoisier marked out for modern chemistry; allow me, I say, to express myself as he did, with regard to his fellow-laborers and his friends.

If in my lessons, if in this summing up, I have chanced to adopt without mentioning them the experiments or the opinions of M. Boussingault, it is that the habit of communicating to each other our ideas, our observations, our manner of viewing things, has established between us a community of opinions, in which we ourselves, even afterwards, find it difficult to distinguish what belongs to each of us.

In resting these opinions and their consequences on his name and on his authority, in telling you that we work actively, sometimes together, and sometimes apart, in order to verify and to develop all these facts, all these results, by experiment, I do but evince my anxious desire to justify the interest which you have this year taken in my labors.

For this I beg to thank you. It has given me courage to undertake a long course of researches: if any thing useful to the progress of humanity should result from them, let all the honor of it redound to the intelligent good-will with which you have constantly surrounded me, and for which I shall ever be profoundly grateful.

CURIOS APPLE—S.—"Reading an old English work recently, I came to a reference to 'Vol. I. part 3 and 4, page 362 of "New York Board of Agriculture Transactions,"' in which is said to be a communication from Mr. John Jay, describing an apple-tree in New York, which bears fruit, each being half sour and half sweet; and this was produced by splitting two scions,—one of a sweet apple and the other sour,—longitudinally through the bud, then banding the two together as one scion, and then grafting this spliced scion as one into the stock. I should be glad to know from any of your correspondents whether this tree is still in existence? or any account of it. Mr. Jay, who I

believe is still living, could now supply some additional information."

THE MUSHROOM STONE.—We believe there is no one who is not passionately fond of mushrooms. Our economists tell us America could be independent of the world, so varied are the productions of its soil. But we do not think the mineral resources of the continent can be fully developed, until we have found our mushroom stone. We extract the following from Ferber's travels in Italy, a work published 70 years ago:

"The *pietra fungaia* is a white calcareous stalactite, or tuff stone, dug in the limestone hills bordering on the Romagna, and endowed with the quality to produce in any season of the year excellent mushrooms, if kept in a moist cellar, and now and then sprinkled with water. This quality is owing to a great many roots, or vegetable fibres, together with the mushroom seeds enclosed in its substance. They are used in some great houses in Naples and Rome. I saw an indurated mould from the same place, that had the same quality, which was used by Mr. Fabriana in the mint at Florence."

Books, Catalogues, &c.

We are indebted to the Hon. Isaac Newton for an early copy of the "Patent Office Report for 1862." One of the best of the series, and which we shall notice more fully in our next.

ATLANTIC MONTHLY.—This excellent serial is always welcome to our book table. "Wet-weather Work" is continued regularly, and no intelligent Horticulturist should miss reading these articles particularly. Our correspondent, Mr. Francis Parkman, has an article in the last number.

THE AMERICAN JOURNAL OF SCIENCE AND ARTS. By Professors Silliman and Dana.

This valuable journal reaches us just as we are closing for the press. It comes laden with its interesting scientific matter. Among many other valuable articles, we notice that Dr. Gray has received specimens of the famed Pennsylvania Tea, and confirming our guess of its being the *Ceanothus Americanus*, the *New Jersey Tea*, and adds:

"Some one remarked that the substituted beverage must have tried the patriotism of our great-grandmothers; but others report more favorably of its qualities."

We hope to give the journal a more extended notice.

Rare and New Fruits.

THE CALABRIAN RAISIN GRAPE—See *Frontispiece*.—Last spring the English horticultural public were excited by a fruit contest, on this wise:—Two distinguished grape-growers had a difference; one contending forcing grapes was an useless expense,—that he could keep over late grapes to be as good as any forced grapes; the other contending he could get new forced grapes better. At the trial the one who had the kept-over grapes was pronounced the winner of the prize. Since then late grapes have come into high favor. Hitherto they have never had a fair chance. Perhaps a Morocco, a West St. Peters, a Purple Damask, or Barbarossa vine has been planted with the others to come in late; but this will not do. They should have a house for themselves. Since the introduction of such good kinds as Lady Downe's, and the experiment above referred to, more attention will be given them; and to aid somewhat in this taste, we have given a costly lithograph of this fine new late grape. The skin is so firm, and the berry altogether so fleshy, that little difficulty will be found in keeping it fresh.

An additional reason for incurring this great expense at this time is suggested by the publisher, as showing his appreciation of the valued services of the friends of the *Monthly*, in obtaining new subscribers for him. He is assured that they will need no better *premium* for their continued exertions in his behalf, than this earnest of his intention to spend all he can afford on making the magazine beautiful and instructive.

THE IONA GRAPE was exhibited at the Annual Exhibition of the Massachusetts Horticultural Society, by E. A. Brackett. This new variety is a dull reddish colored berry, with loose, long bunches, slightly shouldered, thin skinned, sweet, well-flavored and good. The objections to it are its color, loose habit, and medium sized berries. Its good quality may, however, compensate for these requirements. It ripens about the time of the Concord. The Iona is a seedling of Dr. Grant's, produced from the Diana, some years ago, and now first introduced to notice. It is said to be a strong grower, with foliage of good size and firmness, well calculated to resist the attacks of the mildew. It blossoms late. Flesh, melting to the centre, juicy, sweet, and vinous with a pleasant aroma.—*Hovey's Magazine*.

ADIRONDAC GRAPE.—This new variety is gaining friends wherever it is exhibited. At the Horticultural Show of the American Institute some excellent specimens were placed upon the tables, and at the Exhibition of Grapes, held in the same city, the prize was awarded to J. W. Bailey, for the Adirondac, "as the best five bunches of native grapes of any kind, quality to rule." This certainly shows, that for excellence it was the best, where its competitors were the Delaware, Diana, Creveling, Allen's Hybrid, and others.—*Id.*

MARCHIONESS OF HASTINGS GRAPE.—This new foreign grape, introduced a few years ago, and described as a very large and fine variety for the graper, has been exhibited the present year, and highly commended. At a great Horticultural Show at Brighton, Sept. 11, "the grapes were very fine, more especially the Marchioness of Hastings." At the Crystal Palace Exhibition it was shown, and attracted much attention. It is a very large greenish grape.—*Id.*

ONTARIO AND UNION VILLAGE GRAPES.—At a recent meet of Fruit-growers of Canada West, Mr. Arnold said:

"Put Union Village, Ontario, and Mr. Hill's grape, side by side, within four feet of each other, and in all respects equally situated. They fruited this year, for the first time, and neither my friends who examined them, nor I, have been able to perceive any difference between them all, either in foliage, fruit or flavor. It is at least ten days earlier than the Isabella.—*Id.*

Horticultural Notices.

PENNSYLVANIA HORT. SOCIETY.

LIST OF SOME OF THE PREMIUM FLOWERS AND FRUITS OF THE GREAT EXHIBITION.

Twelve plants of Dr. Rush's gardener, Mr. Eadie—Allamanda neriifolia, Clerodendron affine, Manettia cordifolia, Lantana Countess de Morny, L. grandiflora alba, L. Grand Sultan, Coleus Blumei, Diffenbachia maculata, Coleus, Verschafelti, Blechnum Braziliensis, Caladium bicolor, Cissus discolor. In competition with gardeners only.

Twelve open to all—General Patterson's gardener, Mr. Graham.

Besides some of the above, were *Stigmaphyllon ciliatum*, *Pandanus variegata*, *Aspidustra urida*, and *Abelia rupestris*.

Six plants in not over ten-inch pots was given to Mr. Hibbert, gardener to Fairman Rogers; but as we have depended on the lists handed to the Secretary, and there is no particular list of these six, or any of the special collections, we are unable to give them.

Twelve Ornamental Foliage Plants, Mr. N. Baldwin, Esq.'s gardener, Mr. W. Joyce. No list.

Six varieties of Foliage Plants—Mr. Eadie—*Echites nutans*, *Caladium chantini*, *Caladium Houletii*, *Beaumontia Baumgartnerii*, *Coleus Verschaffeltii*, *Tillandsia rosea*.

Best Twelve Caladiums—Mr. Eadie—*C. bicolor*, *Brogartii*, *Barraquini*, *pictum*, *Hæmatostigma*, *Houletii*, *Belleymei*, *Newmanii*, *Chantini*, *marmorata*, *hastata*, *argyrites*.

Six *Dracænas*—D. R. King, Esq.'s gardener, Mr. J. Fairbrother—*D. Braziliensis*, *D. Ferræ*, *D. Rumphii*, *D. terminalis*, *D. spectabilis*, *D. maculata*.

Six Orchids—James Eadie—*Gongora maculata*, *Oncidium papilio*, *Rhenanthera coccinea*, *Cypripedium venustum*, *Oncidium racemosum*, *Miltownia Clowesiana*.

Twelve Lycopodiums and Selaginellas—J. Fairbrother—*L. Cæsum*, *Violacea arboreum*, *paradoxa*, *Stolonifera*, *Wildenovii*, *Cunninghamii*, *cordifolia*, *serpens*, *Mertensii compacta*, *inequifolia*, *delicatissima formosa*.

The above is all we can make out from the list furnished us, as referring to our last month's list. Of Dahlias and other Cut Flowers very few lists were rendered. We give the following from our own notes:

Of all the *Begonias*, new or old, the following are evidently the best: *Mad. Alwart* and *Humboldtii*, in the collection of D. R. King, and *B. miniata*, from M. W. Baldwin. Of *Dracænas*, a *D. maculata* in Mr. King's—grained, as a painter would say, green and white—was beautiful and novel. In *Caladiums*, *C. Chantini* is, we think, the best. *C. Belleymei*, *C. pictum*, and a *C. argyrites*, from Dr. Rush, were all as "good as new." An improvement on *C. bicolor*, called *splendens*, however, we noted the collection of Mr. John Sherwood. Of all the numerous variegated these were the best. In Mr. King's collection, *Sonerilla margaritacea*, *Sansivera guayensis*, *Cissus porphyrophyllum*, *Diffenbackia picta*, *Pothos argyrea*, and *Maranta regalis*. The *Diffenbackia maculata* of Dr. Rush was very striking, measuring about three

feet high and three feet wide. A *Coleus Verschaffeltii*, of Dr. Rush, measured about five feet high and three feet wide, and some splendid *Lantanas*, perfect cones, from six to eight feet high.

Dracæna terminalis variegata and *Aspidistra variegata*, both from Dr. Rush, were very fine, indeed. *Beaumontia Baumgartenii* is one of the best white and green plants. Mr. John Joyce had a fine plant from E. Wright, Esq. *Ananissa sativa variegata*, from Professor Rodgers, is a most beautiful variety of the Pine-apple tribe. *Alócasia metallica*, from Mrs. Catherwood, attracted universal attention. Also a fine specimen of the curious *Buonapartia*. *Cyanophyllum magnificum*, from Mr. Rogers, was also magnificent. Mr. Rogers had also a fine *Cyrtoceras reflexa*. A *Pandanus variegata*, from General Patterson, and *Cissus discolor*, five feet high, from Mr. Baldwin, were good specimens of good old things. The Ferns were of enormous size. We noticed in Mr. Baldwin's collection a *Phlebodium aureum*, about four feet high and four wide, and a *Gymnogramme tartarea* about two feet high and two wide. A *Manatopteris nidus*, or Bird's-nest Fern, in Mr. King's collection, was also very large.

Not noticed by the Committee, but very beautiful to our taste, were many varieties of *Dianthus hybridus*, from Aubrey and Souchet; and we had a long pause over a collection of memorial Ivys, brought from old ruins all over Europe, by M. W. Baldwin, Esq. The leaves varied a little from most all places, getting very small as they hailed most northward.

The collections of Lycopodiums were very numerous. The best, we think, were *delicatissima*, *paradoxa*, *Cunninghamii*, *Stolonifera* (*concinnum?*), *umbrosum*, and *Wildenovii*.

Among a lot of Evergreens, by Mr. Bright, was a magnificent *Thuja meldensis*, about six feet high and three wide. A noble specimen, indeed, for so rare and beautiful a plant.

In the fruit line there was nothing particularly new. Mr. John Sherwood had a large plant of the Yeddo Grape, and there was a smaller one from the Experimental Garden at Washington. The foliage does not look like a variety of *Vitis vinifera*, but rather as if it might have sprung from a bed of seedlings with Taylor's Bullitt. This latter variety, by the way, from several exhibitors, is evidently a late ripener, and from what one might guess from a half-ripe grape, may, at times, reach a high order of excellence. The bunch and berry, though, are very small for so strong a grower—"very little grist for so large a mill." Cuyahoga

also seemed late; and whatever it may be when ripe (and we have eaten it delicious), was no better than Taylor's Bullitt in this condition.

The rival Grapes, Concord and Delaware were out in great force. No one would be without a Delaware. They look good, and are good, there is no mistake.

When a pear man goes to a nursery, he generally says, "First and foremost, I must have *one* Seckel." Then he wants "a dozen Bartletts," and so on through one hundred. So with these grapes. First and foremost, we all want *one* Delaware, then a dozen Concord, some Crevelings, Dianas, and so on. But if we were to be confined to *one* pear, would that one be a Seckel? In a *selection* of fruits we should have a Delaware, at least, at the head, by all means.

Maxatawney was as good as ever, and so was Creveling. Catawba, Isabella and Diana were very good, much better than hosts of new ones. If they would only prove certain, we should not want much better ones. Perhaps when the newer and superior ones shall have endured as many years of barbarous treatment as these, they will be no more reliable. Roger's No. 19 was the most promising of the newer ones. Christine was a compact bunch, with medium-sized berries; not of first quality, but very early.

In Foreign Grapes, Bowood Muscat, Muscat Hamburg and Buckland Sweetwater were superb. Deccan's Superb on exhibition attracted attention for its beauty, and its peculiar flavor pleases many.

In Pears and Apples we noticed nothing calling for special note, except that where there were any particularly fine and good-looking specimens, the quality was good for the pigs, and we stuck a pin in the observation as a future text against high orchard-culture.

In Peaches there were some very large "Petit's Imperial," but we did not see how it differed from Susquehanna, though a comparison might show.

Among Cut Flowers, Mr. Dreer's best 24 Dahlias were not named in the Secretary's list. Mr. Kift's 24 Roses were: Luxumberg, Lion of Combats, Gloire de Dijon, Malmaison, Mad. Rachel, Jules Margottin, Mad. Knorr, Mad. Damaizen, Mad. Mollier, Duchess de Cambaceres, Marquis Bocella, Geant des Batailles, Sombriuel, Eugene Desfoses, Prince Albert, Dr. Arnold, Duchess of Sutherland, Appoline, Cardinal Patrizzi, Leveson Gower, Souv. de la Reine d'Angleterre, Vicompt de Cazes, Ereque de Nimes, Mad. Villermoz.

The following is the Report of the Committee on Bouquets and Premiums, omitted in our last:

THE COMMITTEE ON BASKETS, DESIGNS AND
BOUQUETS

Respectfully report that they have awarded Premiums as follows:

Cut Flowers.

General Collection, Best 50 varieties, H. A. Dreer, Florist, Philadelphia.

Dahlias, 24 varieties, Best, H. A. Dreer, Florist, Philadelphia.

Second Best, Joseph Kift, Florist, West Chester, Pa.

Special, \$2, P. McKenzie & Son, Florists, Philadelphia.

Do., \$1, John Gerney, Florist, Philadelphia.

Roses, general collection, Best, Joseph Kift, Florist, West Chester, Pa.

Second Best, H. A. Dreer, Florist, Philad'a.

Special, \$2, John Gray, Florist, Philadelphia.

Verbenas, 24 specimens, Best, Thomas Meehan, Nurseryman, Germantown, Pa.

Second Best, H. A. Dreer, Florist, Philad'a.

Petunias, single, Best, Thomas Meehan, Nurseryman, Germantown, Pa.

Herbaceous Phlox, 12 specimens, Best, John Gerney, Florist, Philadelphia.

Designs.

Design formed of Cut Flowers, Best, Jas. Browné, gardener to A. S. Jenks, Esq.

Second Best, W. Joyce, gardener to M. W. Baldwin, Esq.

Third Best, John Fairbrother, gardener to D. Rodney King, Esq.

Table Design, Best, Mrs. A. J. Catherwood.

Second Best, Adam Graham, gardener to General R. Patterson.

Third Best, E. Satterthwait, Nurseryman, Jenkintown, Pa.

Special, \$3, H. A. Dreer, Florist, Philad'a.

Do. \$3, John Magee, gardener to S. S. Price, Esq.

Pair Table Vases, Special, \$3, P. Mackenzie & Son, Philadelphia.

Special, \$2, Mrs. P. S. Bunting.

Baskets and Flower Stands.

Basket of Cut Flowers, Best, James Eadie, gardener to Dr. Rush.

Second Best, P. McKenzie & Son, Florists, Philadelphia.

Hanging Baskets, Best, E. R. Hibbert, gardener to F. Rogers, Esq.

Second Best, James Eadie, gardener to Dr. Rush.

Special, \$1, for two Vases of superior Balsams, or Lady Slippers, Donald McQueen, gardener to Jos. Longstreth, Esq.

Pair, Special, \$1, John Joyce, gardener to Jas. A. Wright, Esq.

Phantom Bouquet, composed of skeletonized leaves and plants, Best, Mrs. Kauffman, Roxboro', Pa.

Second Best, Mrs. C. Adams.

In frame, Special, \$2, John Wandell, Jr.

Hand Bouquets, Pair, Best, W. Southwood, Florist, Philadelphia.

Second Best, E. Satterthwait, Nurseryman, Jenkintown, Pa.

They have also awarded the following Special Premiums for objects of interest and beauty not specified in the general list of premiums:

Glass Case of Aloes, \$3, to Henry C. Gibson, Esq.

Succulent Plants, \$3, to John Fairbrother, gardener to D. Rodney King, Esq.

Fern Case, Special, \$2, Miss Anna Williamson.

\$2, Hartell & Letchworth.

\$1, John Kinnier, Florist, Germantown.

Wax Fruit, 2 vases, \$2, Miss A. A. Chapman.

2 vases, \$2, Miss Anna Williamson.

Wax Flowers, 3 vases, \$2, Mrs. C. Adams.

Collection, \$2, Hartell & Letchworth.

Bridal Wreath, \$2, Mrs. Anna Smith.

Leather Insect Case, \$2, Miss Anna Williamson.

Models of Royal and Coconut Palm, a pair in glass cases, \$3, John Collins.

Frame of Dried Grasses and Acorns, \$1, Miss Anna Williamson.

Rustic Flower-stands and Garden-seats, \$2, Francis Fuchs.

Pair of Terra-cotta Garden-seats and Flower-vases, \$1, Tyndall & Mitchell.

Two Aquariums and Design of Dried Grasses, \$5, Peter Raabe, Florist, Philadelphia.

Two Aquariums, \$3, W. Southwood, Florist, Philadelphia.

Aquarium, with shell-work, \$2, Francis Keefe, gardener to Joseph Harrison, Esq.

Farmer's Wreath, composed of natural uncolored seeds, a beautiful design, \$3, Mrs. E. G. Garning.

Vase of Mosses and Lichens, from the Catskill Mountains, \$3, J. V. Merrick.

Grotto, composed of Mosses, Ferns, Palms, and Variegated and Aquatic Plants, \$10, W. Southwood, Florist, Philadelphia.

The Committee would call the attention of the Society to the large collection of specimens of foreign and native wood contributed by Mr. John Collins. Also to the very beautiful Grotto de-

signed and constructed by Mr. William Southwood, from plants furnished by D. Rodney King, Esq. It proved to be one of the most attractive features of the Exhibition.

The leaves of the *Victoria regia*, kindly furnished by George H. Stuart, Esq., and the flower of the same, presented by a lady, were objects of especial interest.

The Committee congratulate the Society upon the beautiful designs of skeletonized leaves and plants, which are a novel feature of our displays. The "Phantom Bouquets" are worthy of more extended attention, and especially commend themselves to lady amateurs, whose fine taste and delicate manipulation peculiarly fit them for the production of these perennial groupings of Flora's offspring. They are not less interesting to the lover of flowers, than instructive to the student of botanical anatomy.

In the department of designs formed of cut flowers, the Committee would suggest that less attention be paid to *size*, and more to *grace of outline*, harmonious combination and contrast of form and color, not omitting that essential element, fragrance—the latter too often overlooked altogether. A tasteful, well-balanced floral composition, no larger than one's hand, is far more pleasing and permanently attractive to the cultivated eye, than a gaudy, staring design, however large. In floral groupings, beauty, not size, is the "element of power."

The Committee cannot conclude without referring, in terms of warm commendation, to the valuable assistance received from the Ladies' Committee, to whom the thanks of the society are due for their untiring zeal and the exquisite taste displayed in the preparation of bouquets, and the general decoration of the house.

Respectfully submitted,

ROBERT KIEVINGTON,
L. S. PEPPER,
GEO. W. EARL,
LOUIS JACK,

Committee.

In concluding our notes of this great exhibition, we have only to add that on asking several members of the executive, if they were indebted to any of the members for extra exertions in working out the details of the affair, they answered that they were so handsomely supported by all the Committees that they could not particularize, but it would be no injustice to any one to say, that to two "volunteers,"—Mr. John Wandell, jr., and Mr. J. S. Martien,—they were particularly indebted for valuable services.

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