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THE MAGAZINE
OF
HORTICULTURE,

BOTANY,

AND ALL USEFUL DISCOVERIES AND IMPROVEMENTS IN

RURAL AFFAIRS.

“ Je voudrais échauffer tout l'univers de mon gout pour les jardins. Il me semble qu'il est impossible qu'un méchant puisse l'avoir. Il n'est point de vertu que je ne suppose à celui que aime à parler et à faire des jardins. Pères de famille, inspirez la jardinomanie à vos enfans.”—*Prince De Ligne*.

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P R E F A C E .

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Boston, Nov. 26, 1851.

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THE MAGAZINE
OF
HORTICULTURE.

JANUARY, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *A Retrospective View of the Progress of Horticulture in the United States, during the year 1850.* By the EDITOR.

A MILD and variable winter, a cool and wet summer, and a warm and pleasant autumn, have been the prevailing characteristics of the weather for the year. After the mild December of 1849, (excepting the last week,) January commenced with the temperature at zero. Mild weather, however, soon followed, and on the 8th and 9th, snow fell to the depth of seven inches: this was succeeded by a cold easterly rain on the 11th, with fine weather up to the 18th, when more rain fell, succeeded with light snow: the 22d and 25th were also rainy. They were followed with fine, mild weather until the 31st, when the thermometer again sunk to zero.

February was much more variable, as well as colder. Rain fell on the 2d, carrying off nearly all the snow. The 4th and 5th were cold, and on the 6th the mercury reached 8° below zero, the lowest point during the winter. The 7th was squally, with snow. Very mild weather followed, with the thermometer 56° at noon on the 11th,—every vestige of snow gone. A heavy easterly rain set in on the 14th, and the 16th was again cool. Mild and mostly pleasant weather ended the month.

More snow fell in March than in either of the previous months. The temperature was about the average of other

years. It commenced very mild, with easterly winds; but on the morning of the 4th the temperature fell to 6° ; after this it was pleasant, with a warm rain from the southeast on the 7th; up to the 11th, it was fair again; but on the 12th, a heavy snow fell to the depth of ten inches in a few hours. On the 14th, a hard rain nearly cleared off the snow, and left scarcely any frost in the ground. On the 20th, the mercury indicated 10° ; but moderate weather followed, with another snow storm of six inches on the 23d. The 28th, it snowed again; but mild weather ended the month.

April was a cool month. It commenced warm, with the thermometer as high as 65° at noon on the 3d. Rain fell on the 4th, succeeded with good weather, with some frost. The 14th was a cool day for April—the mercury only indicating 5° , with squalls of snow. The 16th was also a remarkably cool day, with the temperature 26° at sunrise, 34° at noon, and 29° at night, freezing all day in the shade—a circumstance which occurs but few days during winter. Up to the 27th it continued cool, with frost; the 29th was rainy and cold.

May was cool, with an unusual quantity of rain. On the 3d, the peach trees began to open their buds. A cold easterly storm commenced on the 4th, with an excessive quantity of rain on the 5th and 6th, completely saturating the ground. The 15th and 16th were rainy; and on the 22d, another storm set in from the east, which continued with but little abatement to the end of the month, doing immense injury to the fruit crop throughout New England, by the destruction of the blossoms, and greatly retarding all gardening and farming operations. June began with cool east winds and showery weather, which continued to the 10th. Warm and fine weather then set in, and prevailed up to the 22d. The 23d was accompanied with a cold easterly rain; pleasant weather ended the month. July was warm and showery, without any of the excessive heat which usually occurs in this month. August was cool, with thirteen of the thirty-one days showery or rainy; and on the 17th, the thermometer fell to 46° , and in many low places there was a slight frost.

September was also cool and wet. On the 3d, a very heavy rain fell, causing great freshets in some parts of the country. This was succeeded by another storm, nearly as heavy, on the 7th, and by a third one, not quite so severe, on the 27th. The 14th, 16th and 30th were cool, with light frost in low grounds. October was more favorable. It commenced rather cool, with a frost on the 8th, which killed the dahlias. After this the weather continued pleasant, with light frosts, to the close of the month. November was equally mild. In warm and sheltered gardens the dahlias continued blooming till the 20th, when a temperature of 20° cut them off. Very little rain fell; and a slight squall of snow on the 26th. Altogether, it was one of the mildest Novembers for several years. December commenced with easterly winds and rain, succeeded with snow on the 7th; and at the time we now write, (Dec. 14,) the thermometer has fallen down to zero, with an inch or so of snow just covering the ground.

The season now brought to a close by the approach of severe cold, has been in many respects, as regards vegetation, a peculiar one. Owing to the cool and wet spring, many of the crops of the more tender kinds of vegetables, such as corn, beans, vines, &c., were destroyed when just coming out of the ground; and in some instances, two or three successive sowings had to be made before a supply could be secured: this, with the continued cool weather, retarded their growth so much, that they scarcely attained to maturity the entire season.

With the almost total loss of the fruit crop of 1849, it was anticipated, after the season of rest afforded the trees, that the present year would be one of abundance and plenty; and, from the enormous quantity of bloom which clothed the trees, both large and small, this expectation appeared about to be realized. But, alas! the raw and chilly easterly winds and heavy rains of May proved disastrous in the extreme. The bending boughs, weighed down with bloom, were scarcely more than expanded, before the latter were exposed to one of the bitterest of easterly rain storms, which scattered them in all directions; and the few which remained were

but little better than destroyed; for, with few exceptions, fruits, especially pears, have been less fair and beautiful than usual.

But these losses may be our gain in the end; they will serve to give the trees additional strength. In not being tasked with successive over-crops, the energies of the tree are more rapidly developed; and another year may show such a result as will make us forget our disappointment, cease our regrets, and thank a kind Providence that we are yet blessed with a fruitful season and a bounteous harvest.

HORTICULTURE.

Among the many excellent articles in our last volume, it is difficult to particularize, in the limited space of this paper; but just at the present time, when so much attention is devoted to the cultivation of fruit trees, we may mention the several papers on Pruning, by Mr. R. Thompson, (pp. 114, 160, &c.,) as particularly valuable; and, in connection with them, the articles by Mr. Errington, (pp. 351, 393,) on Root Pruning and Dwarfing Trees, which are so complete in their details, as to be of the greatest aid to success in the management of dwarf or pyramidal trees, either upon the quince or pear. Mr. Thompson's articles are so well explained by the illustrations which accompany them, showing the difference between the leaf and flower buds—so important for every amateur to know who prunes his own trees—that a cultivator of good judgment, who has never pruned a tree, could not greatly err, if his directions are carefully followed. We have often been much surprised, when showing our specimen trees to cultivators—even those who have had some experience in the growth of trees—to find they did not know the difference between a fruit bud and a leaf bud. Among pear trees this distinction is very apparent; but with the apple, the cherry, and the plum, the difference is much less than with the pear; and we have known trees so carelessly pruned, by the very common and correct practice of heading in the young shoots, of last year's growth, half or two-thirds their length, as to destroy all or a greater part of the fruit buds. Heading in is

what all practical men advise, but there are exceptions to the rule; for while some kinds of trees produce their fruit upon the old spurs only, others bear on the ends of the new wood. Among apples, the Early Harvest may be mentioned as an example of this; and among pears, the *Beurré d'Anjou*. Now, if, in pruning—especially very young trees, where there are but few buds, and the cultivator is anxious to see the fruit—these terminal shoots are headed in, the buds are destroyed for the year; but if these distinctions can be pointed out, as in the articles alluded to, it will often save much disappointment and loss of time.

The destructive habits of many kinds of insects which infest our fruit trees, are yearly attracting more attention; and we are glad to announce to our readers, that we anticipate a fund of useful information connected with them, in the present volume, from our correspondent, Dr. T. W. Harris, in a series of articles, illustrated with engravings. In our last volume, the article by Mr. Simpson, on the Curculio and Codling Moth—two of the most annoying insects which fruit cultivators have to contend with—detailed some new facts respecting their habits, and the best mode of preventing their ravages. Mr. Goodrich's communication shows conclusively, what has always been our belief, that salt has no more effect upon the curculio than the same quantity of sawdust. The whole salt theory arose from one of those gross blunders which are too often made, under the guise of "new and important discoveries" in horticultural science. The late Mr. Pond, of Cambridgeport, was highly successful, for several years, in raising the plum, when other cultivators failed to produce a crop; and it was at once attributed to his ground, which, it was said, was a *reclaimed salt marsh*. Now, as we have been familiar with the spot since we were large enough to know a blackberry from a whortleberry bush, we can at once say that there is no truth in the assertion; on the contrary, part of the ground was a *sandy* pasture, not rich enough to raise a tree, only with the aid of the *high feed* which Mr. Pond knew how to give; and, with the exception of the unprecedented high tide in February, 1832, when half of the gar-

dens in Cambridgeport were overflowed to such an extent as to kill almost all kinds of small shrubs and plants, no salt water has ever been near it. The whole salt theory has arisen from the above circumstance; and, though we have from time to time given the views and experiments of various cultivators upon the application of salt for the curculio, we have never applied it to our own trees, or believed it to be of any use in the destruction of this insect. Mrs. Benedict's careful experiments confirm this; and we now hope no farther time will be spent, or expense incurred, in endeavoring to stay these depredators with it.

The results of the two pomological conventions which were held last fall, we have already given to our readers, (pp. 107, 294.) The session of the last year, (1850,) combining the two conventions, was held at Cincinnati; and, as soon as the *Report* reaches us, we shall give an abstract of it in the same manner. Hereafter they will be held biennially, and the next one will take place in 1853, probably in Philadelphia. We regret that the convention had no delegates from New England. We had intended to be present; but its close proximity to the annual show of the Massachusetts Horticultural Society, and our editorial duties, prevented, much to our disappointment. It would have been highly gratifying to have met our Western friends on the occasion, and particularly important to us, to inspect their magnificent show of apples, which was so conspicuous a feature of the exhibition.

The subject of special manures, though much discussed in the agricultural journals, we have not thought, with what is at present known as regards their action, of sufficient importance to occupy much of our attention; and we are glad to observe that, within a short period, there seems to have been a healthy reaction in the minds of practical men, as regards the importance which has been attributed to their use. We need scarcely repeat, that we have no doubt of the good effect of mineral manures, under certain circumstances; but that they are to be looked to as the best and only means of the successful treatment of trees and plants, as some writers

have affirmed, we do not for a moment admit. A writer in the *Gardener's and Farmer's Journal*, in alluding to the practice of burning plants and analyzing their ashes, now so common, to find the proper constituents of food, makes the following judicious remarks :—

“ We may burn a plant, and obtain a pretty accurate approximation to a discovery of its constituent parts, mineral and gaseous ; but how they are obtained, eliminated, held together and assimilated, is another branch of study ; and the mere chemist, who confines his investigations to the simple changes of dead matter, will find so many opposing influences when *life* is concerned, that he must either give up the pursuit in despair, or begin to study, and register, and experiment upon organic agency. * * * * The great outlines of *how* plants and animals are fed, are not less important than the question of what they are fed on ; and both must be known, before anything but hap-hazard practice may venture to hit upon the right principle, more owing to ‘good luck than good management.’ ”

Now, a reference to our last annual summary (p. 7) will find the substance of the above remarks, and nearly in the same language ; and we are glad to have our opinion fortified by such good authority. The article by Dr. Lindley, on growing asparagus, (p. 533,) is another evidence of the value of manure over all special mixtures, for attaining the same end.

Our Pomological Gossip has been so full, that we have only to refer to it for all that is new concerning fruits. We may, however, recapitulate a few apples and pears, which have given additional promise, after the trial of another year, of being valuable varieties. Among pears, the Beurré Duval, Beurré d'Anjou, Beurré Langelier, Smith's Bordenave, Bonne d'Zee, Dunmore, Doyenné Boussock, Doyenné d'Été, Monarch, Swan's Orange, Nouveau Poiteau, &c. Among apples, the Cogswell, Garretson's Early, Manomet, Hurlburt, Northern Sweet, Tufts, and Mother. The Diana grape, notwithstanding the very cold and backward season, fully matured its fruit, thus establishing its claim to the certainty of a crop in our most unfavorable seasons.

FLORICULTURE.

We are happy in being able to state that there is a growing and healthy taste for plants and flowers. Not only is this apparent in the increased number of greenhouses, which are becoming necessary appendages to every good garden, but in the far superior arrangement and decoration of the out-door department, and pleasure grounds, in summer. The grand improving feature has been the introduction of what are very properly termed bedding out, or summer-blooming plants. These are now raised in large quantities by the leading nurserymen, and sold at such reasonable prices, that they are within the means of everybody who has a spot of ground; and hundreds are now planted where, a few years ago, not one was to be found. The effect of masses of verbenas, heliotropes, scarlet geraniums, salvias, &c., is so striking as to attract the attention of even those who ordinarily would give no heed to the scattered objects which usually fill up the garden; and we think we can date the origin of a real love of flowers to the impression which a brilliant mass of verbenas or salvias has made upon the beholder.

The most noted articles in our last volume are those on the Propagation of Plants by Cuttings, (p. 123,) by Mr. Saunders; the Culture of the Camellia, (p. 207,) by Mr. Errington; the Cultivation of the Cyclamen, (p. 317,) and particularly the Cultivation of American Plants, (p. 359,) by Messrs. Standish & Noble; and the Culture of Tropæolums, (p. 500,) by Mr. Saunders. Many new verbenas and phloxes have been fully described, (pp. 172, 275,) and also several other new and rare plants. Our Floricultural Notices contain an account of most of the principal new plants introduced into the gardens of England and the Continent.

The rhododendrons have received a great addition to their value, in the introduction of the magnificent species from Sikkimhimalaya, sent home by Mr. Hooker. A brief description of them we have already given, (Vol. XV, p. 268,) but we had no idea of their real beauty, until we examined the elegant work of Dr. Hooker, with folio plates representing

the flowers of full size. Their introduction will eventually tend to change the entire character of our hardy varieties: by hybridization, the magnificent foliage and the immense corols will be imparted to the present hardy varieties, and a progeny will be raised which will surpass all that are now known. At present they are so rare, that some time will elapse before they will fall into the hands of those who will be active in the growth and production of new varieties.

If we were called upon to name the most valuable communication in this department in the last volume, we should unhesitatingly give the preference to that on the Cultivation of Rhododendrons, Azaleas, Kalmias, &c., which are termed, *par excellence*, American plants. Indeed, to the lover of real beauty in plants it is beyond price. It shows at once that all the obstacles to the successful growth of these most desirable of all shrubs, which have obtained everywhere, discouraging all efforts at a trial, are merely imaginary, and to the persevering gardener or amateur at once cease to be so, when common sense, good judgment, and a proper knowledge of their native habits, are brought to bear upon them. The article in question leaves no chance for apology, where they do not make one of the most prominent features of the garden, or, at least, do not form conspicuous objects in the pleasure-ground or shrubbery. We hope in another number to offer some further remarks, from the same source, which still further show what can be done by an earnest wish to accomplish a good work.

A family of plants which have not had the attention which their merits deserve, is that of the herbaceous pæonies. Within a few years, the French and Belgian cultivators have turned their attention to the growth of new kinds; they have made wonderful accessions to the catalogue, which now embraces from seventy-five to one hundred varieties, all double and fine. Of course, there is a difference as regards their relative beauty, but many of them are very distinct, large, beautiful, and showy. We shall describe, in the present volume, many of the best of them which have been introduced into our gardens. They are so easily grown,

require so little attention, and are so very attractive, that they should be in every choice collection.

ARBORICULTURE.

Much valuable information will be found in the last volume, on this department of gardening; more particularly upon the growth and management, as well as the hardiness, of various species of Coniferæ. The planting of hardy evergreen trees and shrubs is yearly increasing, and any facts relative to the hardiness of the new and rare kinds will be eagerly sought after by those who are desirous of introducing them into their collections. The exact degree of cold which many of the Mexican, European, and Asiatic species will bear, under certain conditions of soil and locality, is a subject of great interest to all lovers of beautiful trees; and much experience is needed to determine what these conditions are; for it is a well known fact, in regard to some of the species, that while they are often injured in the mild winters of England and Scotland, they do not suffer by the much more severe climate of our own country. In the former instance it is the dampness which the plants have to contend against, and which often proves fatal, when a much greater degree of cold, and a dry atmosphere, would produce no ill effects whatever. These remarks should be borne in mind, when reading the articles we have copied from foreign journals, on the growth and hardiness of the pines in Scotland; for it will probably have been noticed, (p. 511,) that even the Deodar cedar, in Scotland, was injured last winter, while in our own grounds, with the thermometer 8° below zero, *not a twig* suffered, or even lost its color. The *Araucaria imbricata*, in the grounds of Lady Grenville, at Dropmore, of which we gave an account in 1846, (Vol. XII, p. 44,) required to be protected with a thick covering of thatch and mats for several years before it acquired sufficient strength to resist the cold of Great Britain; yet young plants lived out unharmed the last winter, at Newport, R. I. Such facts are flattering to the lover of evergreen trees, for it does not preclude the hope that all the species from high latitudes may yet become acclimated, and

common inhabitants of our gardens. *Cryptomeria japonica* also stood out the last winter at Newport ; and even the Portugal and common laurels were not injured. We have long thought that both these beautiful evergreens would prove quite hardy, provided they were planted in a dry subsoil, beneath large trees, where they could have protection from the winter sun, to whose effects nearly all the injury which these plants receive are to be attributed.

We shall be glad to receive accounts from any of our correspondents, in regard to the hardiness of all the different evergreens ; and we trust they will keep us informed of their success in the introduction of this fine family of trees. Not only should we be glad to learn of all the places where they have stood the winter now passing, but also the locality—the altitude—the soil, whether wet or dry, light or heavy—and the average growth for the last year, or the entire growth since they were planted. With such facts, we could soon ascertain the relative hardiness of all the species and varieties.

COMMERCIAL GARDENING.

Commercial gardening continues in a more healthy and thriving state. There is a steady and rather increasing demand for trees, shrubs and plants. New nurseries are springing up in various parts of the country, and the old and established houses are extending and adding to their stock. The production of seedling stocks, both of fruit and forest trees, is rapidly increasing, and we doubt not a few years will find us wholly independent of those of foreign growth.

One thing we think demands the attention of nurserymen, and that is, the propriety of seeking protection from foreign competition. We see no reason why the small nurseryman, who has his entire property embarked in his business, should not have the same protection as the wealthy manufacturing corporations ; and now that a revision of the tariff is *talked* of, we hope the subject will receive due attention ; and it behoves all nurserymen to at once forward petitions to Washington, praying that the same protection may be afforded them that is extended to other branches of trade. A specific

duty of twenty or thirty per cent. would be sufficient to enable the American nurseryman to compete with any country in the growth of trees; and the tendency would be, as in various branches of manufactures, to lessen the price to the cultivator, owing to the increased demand, and the certainty of selling thousands where only hundreds are now disposed of.

HORTICULTURAL LITERATURE.

The principal works of the year have been the *Architecture of Country Houses*, by Mr. Downing; *A Treatise on Hotheuses*, by our correspondent, R. B. Leuchars; and two additional numbers of our *Fruits of America*, up to the 11th—the next number completing the first volume, which will contain *forty-eight* plates.

ART. II. *Hints respecting the Treatment of Fruit Trees.* By an old FRUIT CULTIVATOR.

MR. EDITOR:—As the frost has now fairly suspended the operations of the plough and the spade, I sit down—encouraged by your invitation—to give you a few more hints, or rather, I should say, to ask a few more questions, regarding the culture and present condition of our fruit trees; hoping thereby to draw forth some sensible remarks from some of our experienced fruit-growers, regarding those changes which have taken place among our orchards, and which are now puzzling us all.

I see from your remarks on my last article that you are no great friend to the rising race of horticultural quack doctors, with their homœopathic systems of curing the numerous ills which our fruit trees are “heirs to.” Being very little of a chemist myself, and having been taught from my youth to consider good solid dung as the grand and principal fertilizer of our farms and gardens, I must confess that I often look somewhat sceptically on the minute mixtures of this and the other chemical substances, which I see my scientific neigh-

bors applying to their worn out pear and apple trees. Not long since I met a neighbor of mine carrying out a quantity of stuff on a common dinner plate, into his garden. On inquiring what it was, he told me it was a *special manure*, with which he intended to fertilize a favorite tree. On accompanying him to the spot, my chemical friend sprinkled the mysterious mixture around an old, stunted, worn-out apple tree, that had borne fruit for at least half a century. And this, said I, is what you call *scientific*, is it? Yes, he replied; this is one of the grand discoveries of modern chemistry; and, pitying my credulity and ignorance, he gave me a gratuitous lecture about being half a century behind the age.

Now, sir, I have learned from experience that top-dressing old trees in this way is worse than useless. Admitting the substance thus applied to contain the concentrated strength of a given quantity of manure, its effect upon the tree is restrained by the conditions under which it is applied, and the roots are so far out of its reach that they can hardly receive a tithe of what is intended for them. I have tried frequent dressings of guano on fruit trees, both in spring and autumn, but could never say with downright certainty that they were improved by it. If an orchard has stood for many years, and regularly borne fruit till the ground has become exhausted, it is poor policy to attempt regenerating it by any manures whatever, and especially manures that are highly concentrated, and applied in minute quantities; for then the texture of the soil requires changing, as well as the quality of it. The best thing to do with an old barren orchard is to cut it down, having, a year or two previous, planted a new one on well prepared ground. If you wish to invigorate favorite old trees, it is little use doctoring the worn out soil around the roots with ashes, or iron filings, or other quack nostrums; but clear away the old soil for eight or ten feet around the tree, baring the roots, and digging under the stems as much as possible. Scatter what is dug out on the surface around, and fill up the hole with good rich soil from the surface of an old pasture field, mixed with good stable manure. If this don't renovate the tree, you may then dig it up and

“cast it into the fire,” as the Scripture says, for then it may be pronounced past all redemption.

There is a vast deal of nonsense written about renovating old trees. Most of the methods recommended I have tried myself, or seen them tried by others, but no method succeeds so well as the one here given; but the old soil should be taken out to the full extent of the roots, as they draw their nourishment at the extremities, rather than round the bole. Two years ago I commenced the renovation of some old pear trees, some of which I treated in the manner described, and some according to the prescription given by a contemporary journal, which is as follows: “Two bushels of ashes, and a peck of plaster, or gypsum, and half a bushel of bone dust.” This mixture was dug in as deep as possible round the tree, and forked in carefully among the roots, but the trees so treated are standing in the same condition as they have been for the last seven years. Another quack friend—who, by the way, is a learned professor—recommended strongly the use of iron filings; and, accordingly, a peck of filings was worked in among the roots of each tree; and at the present time, these trees are in a worse condition than those not doctored at all.

In no instance have I seen worn out trees so effectually and rapidly restored to a healthy and fruitful condition, as by digging away the old soil, and supplying its place with a good compost of loam and rotten farm-yard manure, which I have no doubt supplies the tree with all the ingredients afforded by special manures; besides, one knows what he is doing, and what he is giving to the tree for nourishment, which is not the case in the applications of chemical manures. To be sure, the chemist may tell us this or the other mixture is composed of phosphates, and sulphates, and salts of various kinds; but can the chemist tell us how much of this mixture the tree requires to do it good, and how much it can bear among its roots without injury? While any novice, who knows a pear from a pumpkin, knows how much manure is required for a good dressing.

You must not think that I am insensible of the value of

bones and guano, and such like matters, which tend to enrich the soil ; but in applying them to fruit trees, I find the best way is to mix them in a compost heap along with good manure, and give it to the trees in the manner I have explained. I have renewed the age of hundreds of trees in this way, with the most encouraging success.

I observe that some writers on this subject prefer using the manure in a fresh state, in consequence of the loss sustained by the manure in the process of decomposition. This may be very true ; but the manure can neither be so solid and substantial, nor so immediate and permanent in its effects, as when decomposed in the heap ; besides, in open soils, the earth is more liable to be dried up in summer, when the manure is applied in a dry, unfermented state. Therefore, of two evils, it is better to choose the least, which, I think, is done by allowing the manure to rot in the heap, before putting it in the soil.

December 10, 1850.

ART. III. *Descriptions and Engravings of Select Varieties of Apples.* By the EDITOR.

XLIII. FAMEUSE. Forsyth on *Fruit Trees* : 3d Ed.

De Neige,	}	Hort. Soc. <i>Cat.</i> , 3d Ed., 1842.
Pomme de Fameuse,		
Sanguineus,		
Pomme de Neige,		

The Fameuse, (*fig. 1.*) though an apple of American origin, and known to most European writers on fruit, from the time of Forsyth, does not appear to have been generally known to American pomological authors. Neither *Thatcher* or *Coxe*, the earliest authorities, notice it ; Mr. Kenrick was the first to give a full account of it in his *American Orchardist* : this brought it more immediately before our cultivators, and within the last few years it has become much better known and more highly appreciated, and the trees

have been introduced into orchards, as well as smaller collections of apples.

That a variety of so much merit should not have been long since more extensively cultivated, is somewhat surprising; for as an autumn apple, both on the score of beauty and

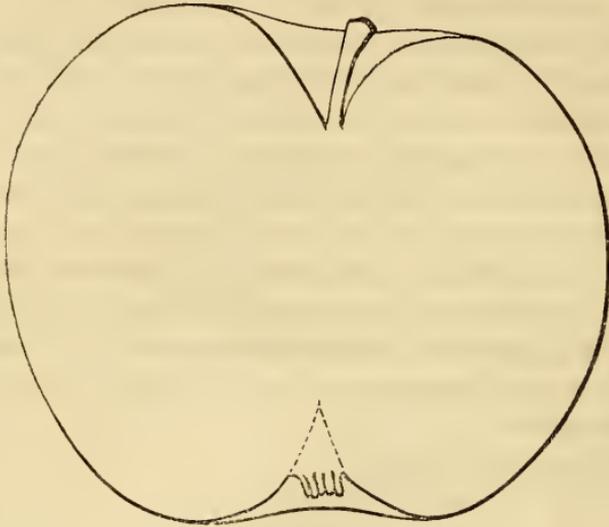


Fig. 1. The Fameuse.

excellence, it has few superiors. Of only medium size, it is still large enough for a dessert fruit; and its brilliant purplish crimson skin, which brings its snow-white flesh in still greater contrast, renders it one of the most attractive apples. In its peculiarly tender, almost melting flesh, and its slightly musky aroma, it greatly resembles some of the finer pears.

The Fameuse is a native of Canada, and, it has been said, takes its name from the place where it was originally found; but of the truth of this there is some doubt. We are rather inclined to think it derived from the French word Fameuse, (*famous, or renowned,*) from its well known excellence in comparison with the majority of apples which were probably introduced into Canada by the French. Its synonyme, Pomme de Neige, (or snow apple,) has been given to it on account of the whiteness of its flesh.

The tree is a moderately vigorous grower, forming a

spreading head, and is an abundant bearer. It has been stated that it loses much of its peculiar excellence, when transplanted from its high northern latitude to the milder region of Massachusetts and New York. Of this, however, we have our doubts. In Western New York it retains all its high character, and is considered one of the best fall apples. In our vicinity, so far as our experience goes, it is equally excellent.

Size, medium, about three inches broad, and two and a half deep: *Form*, round, occasionally flattened at the base, and largest about the middle: *Skin*, fair, smooth, yellowish green, nearly covered with pale red, and streaked with purplish crimson, very dark on the sunny side: *Stem*, short, about half an inch long, rather slender, and inserted in a moderately deep and somewhat contracted cavity: *Eye*, small, closed, and little depressed in a slightly furrowed basin; segments of the calyx, rather long, twisted: *Flesh*, snow white, fine, crisp, and very tender: *Juice*, abundant, slightly subacid, rich and excellent, with a delicate musky aroma: *Core*, medium size, closed: *Seeds*, medium size, long and pointed. Ripe in October and November.

XLIV. POMME GRISE. Forsyth on *Fruit Trees*: Am. Ed.

Grise, Hort. Soc. *Cat.*, 3d Ed. 1842.

The Pomme Grise (*fig. 2*) is another Canada apple, well known there, and one of the most extensively cultivated and popular winter sorts. Indeed, it appears to be the principal late keeping variety. Like the Fameuse, it was early introduced into England; and Forsyth enumerates it in his select list of some twenty or thirty varieties. In general character it considerably resembles the Bullock's Pippin, or Golden Russet, as the latter is often called; but it is a longer keeping fruit.

In Western New York, the Pomme Grise is considerably cultivated, and we now have before us specimens from Rochester, which possess all the richness of this fine variety. It is as yet but little cultivated in Massachusetts, but its merits are sufficient to claim for it a place in every good collection.

The tree is only a moderately vigorous grower, but produces abundant crops.

Size, medium, about two and a half inches broad, and two deep: *Form*, roundish oblate, large in the middle, narrowing very little towards each end: *Skin*, rough, of a clear, pale

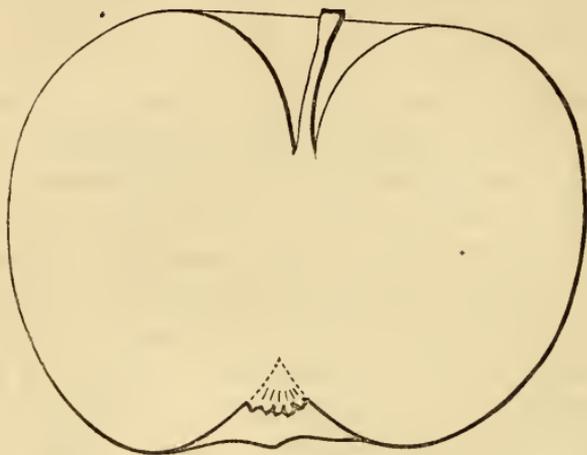


Fig. 2. *Pomme Grise.*

cinnamon russet, thickly dotted with large grayish russet specks: *Stem*, rather short, less than half an inch long, slender, and inserted in a regularly formed and moderately deep cavity: *Eye*, medium size, partially closed, and moderately depressed in a large, open, and slightly plaited basin; segments of the calyx, short: *Flesh*, yellowish white, fine, crisp, and tender: *Juice*, tolerably abundant, rich, subacid, high flavored, and excellent: *Core*, medium size, somewhat open: *Seeds*, small, dark brown. Ripe from November to March.

XLV. HAWTHORNDEN. *Hort. Soc. Catalogue*, 3d Ed., 1842.

White Hawthornden, } *Hort. Soc. Cat.*, 3d Ed., 1842.
 Red Hawthornden, }
 Maiden's Blush (erroneously) of some American collections.

The Hawthornden (*fig. 3*) is an apple of great beauty, and possesses many valuable qualities. Considerable has been recently said, at the several pomological conventions, respecting this fruit, which we have already copied; and at Buffalo

(in 1848) it was voted "unworthy of cultivation." Such a decision greatly surprised us; for, though scarcely second rate as a table apple, its other fine qualities—such as beauty, size, productiveness, coming early into fruit, and the compact

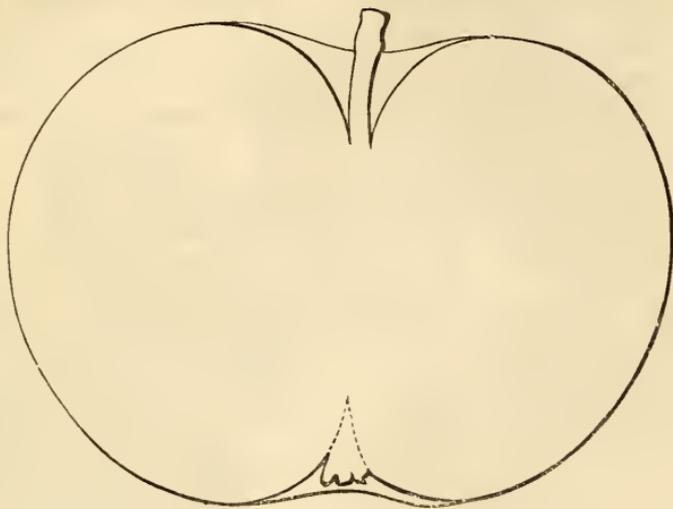


Fig. 3. Hawthornden.

and dwarf habit of the tree—are certainly ample to give it a place in the garden of every cultivator.

The Hawthornden is stated, in the *Pomological Magazine*, to have been raised eight or ten miles south of Edinburgh, in the village the name of which it bears. In many American collections it has been confounded with the Maiden's Blush, a native fruit of nearly equal beauty, and of superior quality, but later, and whose other characteristics as a whole are less valuable than the Hawthornden.

Owing to the prolific habit of this variety—bearing, as it does, in clusters, on the extreme ends of the annual shoots—it does not make but very little growth, and is, in consequence, admirably suited for a dwarf tree—for ornament as well as utility. We have had trees three feet high, and only three years old, bearing several large apples.

Size, large, about three and a half inches broad, and two and a half inches deep: *Form*, roundish oblate, occasionally irregularly shaped: *Skin*, fair, smooth, of a waxen appear-

ance, pale greenish yellow, beautifully tinged with blush on the sunny side : *Stem*, short, about half an inch long, slender, and rather deeply inserted in a somewhat open cavity : *Eye*, rather small, closed, and moderately depressed in a small, slightly-furrowed basin ; segments of the calyx, medium length : *Flesh*, yellowish white, fine, crisp, and tender : *Juice*, plentiful, subacid, brisk, and good : *Core*, medium size : *Seeds*, medium size. Ripe in September and October.

ART. IV. *The improved High-bush Blackberry ; with an Engraving of the Fruit.* By the EDITOR.

THE Blackberry is likely to become one of the most esteemed of the smaller fruits. Since the introduction of the improved variety, about six or seven years ago—of which we have heretofore given several accounts, and whose cultivation has been so well detailed in our last volume, (XVI, p. 261,) by Capt. Lovett, of Beverly, who has been one of the most successful growers of the fruit—it has been very generally disseminated ; and, the past year, many remarkably fine specimens were exhibited before the Mass. Horticultural Society.

The liberal premiums offered for this fruit, by the Society, have had the good effect of producing very general competition ; and so superior have been some of the specimens—so much larger than when first exhibited, evidently showing what care and attention will do in the cultivation of this as well as other fruits—that the Society have deemed it advisable to offer a high prize for a seedling, with the hope of still further improvement ; for, although what few attempts have been made in this way have not been attended with very favorable results, there is still good reason to believe that it will yield to the ameliorating influences of cultivation, as well as the strawberry, the gooseberry, or the raspberry.

Our engraving (*fig. 4*) represents a single cluster of the blackberry, of the ordinary size, under good cultivation.



Fig. 4. The improved High-bush Blackberry.

Several of the berries exhibited by Capt. Lovett, C. E. Grant, and other amateurs, the past season, measured *one and a half inches* in length.

We can commend the blackberry to all lovers of fine fruit, as one which should in no case escape their attention. A dozen vines, when well established, will yield sufficient fruit for an ordinary family. For its cultivation we would refer to the article of Capt. Lovett, above mentioned; merely remarking, that the berries should be allowed to *get fully* mature before they are gathered; otherwise much of their excellence is lost. They will drop from the stem, upon the least touch, when they are quite ripe.

ART. V. *Pomological Gossip.*

THE appearance of our monthly article, under this head, which made a new feature in our last volume, we are glad to learn, has been highly interesting to our readers—or, at least, to those of them who are fruit cultivators—and we shall endeavor to continue it, and render it no less useful than it has heretofore been.

But while we shall do this, with all the fund of information immediately within our means, we must remind our pomological friends that their aid will not only enable us to add to its interest, but to impart new and valuable facts relative to many fruits; we therefore hope that they will consider this a general invitation, and send us any memoranda in regard to new fruits, whether seedlings or foreign varieties, which may come within their experience—and not only this, but the fruits themselves, if they prove to be of any value—that we may give accurate descriptions, and make them more speedily known. With such a free offering on their part, we trust that our *Pomological Gossip* will prove not merely “small talk,” but a storehouse of knowledge, for present use or for future reference.

THE BEURRE' LANGELIER PEAR. We are gratified in being able to state that the trial of another year has fully established the great merits of this new pear. Our specimens, which were few in number, owing to the scanty crop, but of

fine size, ripened off finely, and, tried by the Fruit Committee of the Massachusetts Horticultural Society, they were pronounced of the very highest quality. Add to this that the pears have been perfectly fair, as large and handsome as a Bartlett, with much of the character of the Easter Beurré in its best condition, and a good estimate may be formed of the variety. The tree has a beautiful habit, a broad glossy foliage, and succeeds either upon the quince or pear.

THE THIRD SESSION OF THE POMOLOGICAL CONGRESS was held in Cincinnati, agreeably to the call of its officers, on the —th of October; and we have been somewhat surprised that no report of its doings has been published in any of the Western papers, or in any of the New York agricultural journals, some of whose editors were present. No list of the officers of the Convention, or any account of the quantity or kinds of fruit exhibited, has yet appeared. The Cincinnati Horticultural Society offered to publish the entire proceedings, and we trust they will soon appear, so that we may give some account of the meeting.

THE ROYAL DE CRAAN GRAPE.—The French journals are just now making quite a noise about a new grape, and we copy the following notice of it from the *Gardeners' Chronicle*, the editor of which has been favored with a taste of the berries:—

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

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

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

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

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

Now, Dr. Lindley may be quite as much mistaken in the quality of this new grape, as our friend Longworth was in his estimate of the Diana, after tasting unripe berries which had travelled one thousand miles, and the Royal de Craan *may be* really a valuable variety ; but we have had so many of the French grapes, which have cost a high price and had a great reputation, that we look with doubt upon all the new kinds which are brought into notice. Within the last five years, we have fruited *twenty new varieties*, received from the oldest cultivators of the grape in France, and we have not found but three or four which are worth cultivating in the greenhouse or grapery, or which will compare with the Hamburgs, Chasselas, or Frontignans ; and we should wish a good guarantee of the merits of this new one, before we would introduce it into a collection.

THE PRINCE OF WALES PLUM. This new plum, which we noticed in our volume for 1846, (p. 340,) is stated to have proved a remarkable variety. A correspondent of the *Gardeners' Chronicle*, who has cultivated it some time, can bear witness to one great merit which it possesses above all others that he has grown, which is its never-failing and abundant produce, trained as a pyramidal tree. He gives the following statement respecting two trees:—

No. 1 was budded in 1844, and has been twice root-pruned.

The produce in 1847, was about 15 plums.

“ in 1848, “ 20 “

“ in 1849, was above 144 “

“ in 1850, “ 312 “

No. 2 was budded in 1846, and has been once root-pruned.

The produce in 1849, was 4 plums.

“ in 1850, was more than 12 “

And at present it promises to bear hundreds next year. In regard to flavor and appearance, it may be briefly described as “an improved Orleans.” The writer is training it as a standard ; and his tree, which is of some size, promises a great crop next season.

ART. VI. *On the Cultivation of Allamandias*. By EXOTICUS.

THE *Allamandias* are truly a noble and beautiful class of greenhouse plants. Some of them have lately been introduced; but many of the newer species have not yet found their way into the greenhouses of this country; and even those that have been imported by some of the leading nurserymen, are rarely to be met with in private collections. There are seven different species of *Allamandia*, only two of which we have seen in America, viz.: *A. cathartica*, and *A. Schottii*—to the culture of which I will confine my remarks.

A. CATHARTICA holds a very high position among exotic evergreen shrubs, having large, lanceolate, acuminate leaves, and varicose, scandent stems. The peduncles of the flowers are terminal, proceeding from the axils of the leaves, and bearing large panicles of rich colored blossoms. It is a native of South America, and was sent from thence into England, from whence it was brought, a few years ago, to this country.

A. SCHOTTII is a newer species, and much superior to the *A. cathartica*. The seeds of this plant were introduced into England in 1846, from Brazil. It was raised in the garden of a gentleman, near Manchester, (England,) where it flowered in July, 1847, and continued from that period to expand its large, bright, orange-colored blossoms without intermission, until the following January, and having frequently five or six expanded flowers upon a panicle at the same time. The *A. Schottii* is very different from the preceding one. It is an erect, suffruticose plant, of a glabrous nature, except upon the young shoots and petioles. The flowers are also much larger, being nearly four inches across, funnel-shaped, having rotundate segments, of a rich, golden yellow, with a deeper tinted throat; the flowers also are highly fragrant. It is, upon the whole, the finest climber that has been introduced for many years.

A. VIOLA`CEA is not less worthy of a passing notice, but its habit and other characteristics are different from either of the foregoing sorts. This is a very beautiful suffruticose shrub, growing about five or six feet high, and bearing large violet-colored flowers in rich profusion. The flowers of this

kind are something like the *Gloxinia speciosa*. It is suitable for training, as well as the others, but is more handsome when allowed to grow according to its natural habit, when it forms one of the most beautiful and noble shrubs that can be introduced into the greenhouse. This plant is also a native of Brazil, where the root is used by the natives as an antidote against malignant fevers.

The cultivation of all these plants is the same, and is exceedingly easy. The only difference between them may arise from their habits of growth, as in the case of the latter variety. The climate they require will be most easily secured by considering the one from which they originally came, and cultivating them along with other plants of a similar nature, and which require similar treatment. They thrive beautifully in a moist, warm atmosphere, and a little bottom heat, if attainable; but they will also do without it. They should have a good, rich compost, and thorough drainage, as water must be very freely administered when they are in a growing state. I have grown them well in a compost of rich loam, with a portion of leaf mould, (or decayed tree leaves,) and a little sand, or what is better, pieces of sandstone, mixed in the compost. The compost should be used in a rough lumpy state.

As the climbing species advance in growth, the leading shoot should be trained to a trellis, or up a pillar of the house. They will throw out their panicles of bloom when only a foot or two in height, and keep on growing and flowering for many months.

Allamandias are by no means difficult to grow, as they will flourish perfectly well with such plants as *Clerodendrons*, *Stephanotus*, *Achimenes*, &c. It is the custom of people writing on the culture of individual plants, to give particular soils and specific temperatures for a plant, through its various stages of growth; as if amateurs were to build a house for, and devote their attention to, that particular plant, and nothing else. Special portions of soils, manures, and other ingredients, must be mixed with a microscopical minuteness, after the fashion of "chemical mixtures;" which, in regard to plant culture, I consider quite useless.

December 10, 1850.

R E V I E W .

ART. I. *A Practical Treatise on the Construction, Heating, and Ventilation of Hothouses, including Conservatories, Greenhouses, Graperies, and other kinds of Horticultural Structures; with Practical Directions for their Management in regard to Light, Heat, and Air. Illustrated with numerous Engravings.* By ROBERT B. LEUCHARS, Garden Architect. 1 vol. 12mo., pp. 366: Boston, 1850.

THOSE of our readers who have perused the several capital communications upon the principles of heating greenhouses and other garden structures for the growth of plants, by Mr. Leuchars, will be glad to learn of the publication of such a work as the above title indicates; and they will also be enabled to judge of its value by what he has written in our pages. We must candidly confess that he has given to the whole subject, which it would at first appear could be only the dry details of construction, ventilation, &c., a degree of interest which we have not found in any similar treatise of this kind. He has begun at the beginning, and conducted the reader through all the processes of constructing, lighting, heating, and ventilating greenhouses, hothouses, and other structures for the growth of plants; showing, in course, the principles upon which everything is done, and the theory upon which practices are based; so that the merest tyro in horticulture cannot fail to understand and carry out, if he wish, all that the author has advanced.

The work is divided into three parts, viz.: 1. Construction; 2. Heating; 3. Ventilation. These again are sub-divided into sections; the first part embracing, Situation—Design—Structures adapted to particular purposes—Interior arrangements—Materials of construction—Grass—Formation of gardens. Part 2 embraces the Principles of Combustion—Principles of heating hothouses—Heating by hot water, hot air, and steam—Hot water boilers and pipes—Various methods of heating described. Part 3. Principles of ventilation—Effects of ven-

tilation—Methods of ventilation—Management of the atmosphere—Chemical combinations in the atmosphere of hothouses—Protection of plant-houses in cold nights—General remarks on the management of the atmosphere of hothouses—and ventilation with fans.

It will thus be seen that the work is so systematically arranged, that any particular department may be consulted ; and gentlemen who are about forming new gardens, and erecting hothouses—amateurs who are desirous of having their plants grown under the most favorable conditions—and even professional men, who have not become familiar with all the effects of atmospheric action—may find in it a fund of valuable information, leading to correct practice, and producing the best results.

As a specimen of the way in which Mr. Leuchars treats his subject, we quote the following on the proper construction of greenhouses, the great superiority of span roofs over lean-to roofs, and the ornamental character which such a structure should always possess :—

The principal distinction between a greenhouse and conservatory is, that in the former the plants are exhibited upon shelves and stages, while in the latter the plants are generally planted out in a bed in the middle of the house, prepared for their reception. In many instances, however, there is no other distinction than in the name ; as these structures are sometimes so arranged, that the middle portion is appropriated to the growth of larger plants planted out, while the sides are surrounded with shelves for the reception of plants in pots, as in a common greenhouse. And to this arrangement there can be no special objection, especially where the structure is of small dimensions, which admits of the sides being shelved for plants in pots, without destroying the character of the house, or the plants, by their distance from the glass. We have seen a few instances, a very few, where the two characters were amalgamated together, forming a most interesting conjunction ; but, unless the specimens exhibited be very large and well grown, their effect, when situated upon the centre bed of a common sized house, surrounded with shelves, is meagre and defective in the last degree.

Properly speaking, a greenhouse is not a receptacle for large plants, and hence it should have adequate means within it for standing the plants within a proper distance from the glass. This is absolutely necessary with regard to those classes of flowering plants that are fitted to adorn it, both in winter and summer. Some are of opinion that greenhouses are of no further service than merely to store away a miscellaneous assortment of rubbish during the months of winter, for the obvious purpose of preserving them until the

next summer, that they may turn them out under trees, or in out-of-the-way corners, to keep them from being burnt up by the hot summer sun; and, as a matter of course and of custom, the greenhouse is converted into a lumber-room, or something else. And there it stands, what is, or ought to be, the chief ornament of the garden, deprived of its character, for want of taste, and divested of its interest, for lack of skill. Visitors say, "Let us have a look at the greenhouse." "No," replies the gardener, apologetically, "it's not worth your while going in, for there is nothing there to see!" A humiliating acknowledgment, but full of truth.

It is foreign to our purpose to enter upon the present condition of greenhouse gardening, and the manner in which these structures are managed by gardeners. Our present object is to treat of their construction, and of the means of adapting them the most easily to the culture of flowering plants, either during winter or summer.

It is a well known fact, that plants that are grown in what are called lean-to greenhouses have exactly the character of the house in which they are grown—*i. e.*, they are one-sided; nor is it possible, without a vast amount of labor and attention on the part of the gardener, to grow them otherwise. In this respect the cultivator does not imitate nature, but rather the monstrosities of nature. Trees and shrubs only grow one-sided when their position precludes the access of light and air around them; but they grow naturally into a compact bush, which is universally allowed to be the most beautiful form that plants can assume.

Even a handful of cut flowers have their beauty, and are generally admired; but when seen upon the living plant, whatever shape or form the latter may possess, how much greater their charms! If, therefore, we add to these natural beauties the additional charm of a positively beautiful form, surely it will double their claim to our admiration. And we may here add the gratifying fact, that this claim is now generally recognized by all who can appreciate the superior beauty of well grown plants.

The principles upon which plant structures ought to be built, are somewhat different from those which regulate the erection of forcing-houses, culinary-houses, &c.; and as their purposes are different, their shapes and forms are generally also different. Plant-houses admit of a greater variety of shape and design than any of the kinds previously mentioned; and as they are generally erected in private grounds, for ornament and display, they should have a more artistic character than the others.

The size of the greenhouse may vary, according to the extent of the collection to be cultivated, but it should always have a length proportionate to its height and width. There is a great inconvenience in having the greenhouse very capacious; and where it is desirable to have a large collection of plants, it is best to have a conservatory for the growth of the larger specimens, or a stove for the palmaceous families of plants. We shall, however, allude to what is properly termed the greenhouse.

A first-rate greenhouse should be completely transparent on all sides; lean-to houses are decidedly objectionable, for the reasons already given. Houses that are only glazed in front, and have glass roofs, but otherwise

opaque, are also objectionable, as plants can never be made to grow handsome. They become weakly and distorted by continually stretching towards the light; neither do they enjoy the genial rays of the morning and evening sun, and only perhaps for a few hours during mid-day. If such houses be large and lofty, they are still more unmanageable, as no culture can keep the plants symmetrical and of good appearance.

A greenhouse should stand quite detached from all other buildings, and may be of any form the fancy may dictate, or the position suggest. It may be circular, oval, hexagonal, octagonal, or a parallelogram, with circular or curved ends. The house, to be proportionate, should be about fifty feet in length by twenty in width, and fourteen feet high, above the level of its floor; if more effect be required from the external view, its parapets may be raised, to give the house a loftier appearance.—(pp. 73-76.)

We might, had we room, copy several paragraphs, to show further the value of the work; but we must refer to the book itself for further evidence of this.

The volume is illustrated with upwards of 58 engravings, many of them excellent models for imitation by gentlemen who are erecting any kind of graperies, greenhouses, or hot-houses. We commend the work to every individual who has any interest in the cultivation of plants or fruits under glass.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

FRANCE.

A PEEP AT THE PARIS FLOWER-MARKET.—No lover of flowers, who visits the French capital, should fail to spend a morning at the Flower-market. Though somewhat different in character from similar exhibitions in our own country, it is certainly in no respect inferior. I was in Paris on the last three days of July—days remarkable in the political history of that city—and so agreeable was my reminiscence of former visits, that I resolved to spend the early part of one of those fête-days at the *Marché aux Fleurs*. Accordingly, I arose at the dawn of day, and, quitting my hotel in the *Rue Rivoli*, was soon at the *Quai aux Fleurs*, where the market is held. Long before I had reached the desired place, I was reminded of my approach by the return of earlier visitors. The thrifty housewife, with a *heliotrope* under one arm, and a rose beneath the other, was moving with a brisk step, her affections *pro tem.* divided between the darlings of her choice, herself apparently unconscious of the busy scene which surrounded her. Then the work-

man, who had risen long before the hours of labor, in order that he might present to the sharer of his toils a fresh and sweet token of his affection and esteem, was bearing home a less costly offering in the shape of a stock or a pot of musk. How refining and moralizing must be the influence of this love of flowers! I wish it were more general among the laborers in our own land. But I was aroused from reflection by my arrival at the market, which indeed presented a busy scene. It is a large paved square, planted with rows of acacia trees, whose soft and elegant foliage, trembling in the breeze, harmonized with the animated scene they overshadowed. In the centre of this square was the *bureau*, where I imagined the market-keeper dwelt, with the view of preserving order and taking toll. Near each end was a fountain, surrounded with a basin of water, apparently constructed for use as well as ornament. Around these and the *bureau* were lounging men in blouses, with large baskets, flat at one side to fit the back, lying at their feet, waiting to carry off the purchases. There was a walk in the centre of the square, and the plants were arranged on either side to face the walk. The stalls, which were principally kept by women, who were enjoying their morning's repast of bread and fruit, were set out with order and neatness. There were oranges, oleanders, magnolias, pomegranates, roses, myrtles, carnations, balsams, cockscombs, tuberoses, fuchsias, verbenas, amaranthis, mignonette, marigolds, asters, and indeed almost every plant of the season, mingled together in sweet and inextricable confusion. The plants certainly were not large; they were rather close and compact, laden with blossoms, whose odors rose on every air we breathed. Then the vast quantity of a sort, each seemingly a counterpart of the rest, so nicely surrounded with white paper, and placed so closely together that the whole reminded one of a large flower-garden. I could not look on such a variety of beautiful objects, without wishing to know the prices at which they were sold, and these I found were anything but extravagant. But I paid for my inquisitiveness. I was quickly beset by the men *en blouse* before mentioned, who seemed to take it for granted that I could not carry home my purchases. It was in vain I declined their services, though "they were sure Monsieur Anglais would not carry plants through the streets of Paris; and if he did not intend to purchase, he would not demand the price." Who could answer such arguments, backed as they were by reiterated cries from the venders, "Ce n'est pas cher, Monsieur, ce n'est pas cher." No, indeed, thought I, as I gazed on a pot of forget-me-not, offered for six sous, and contrasted its soft and delicate tints with the sunburnt countenances of those around, and the horny hands which upheld it; it is not dear; yours is no overpaid occupation; truly thou fulfillst the command of thy Maker, "In the sweat of thy face shalt thou eat bread." Having purchased this simple plant, and handed it over to the man *en blouse*, I was allowed to pursue my course unmolested, my new acquaintance acting as protector. One of the most striking features of the market was the bouquets. I had noticed them on entering; but I now caught sight of others, the flowers arranged with exquisite taste, and which far surpassed all that I had previously seen. These were lying at one corner of the market, close to a heap of cut flowers, with which a flower-girl was busily en-

gaged. Bouquets were made with great rapidity, and sold as rapidly as made. Retiring to a respectful distance, where it was sheltered by an acacia tree, I resolved to watch the movements of the fair *bouquetiere*, and thus obtain an insight into the difficult art of nosegay-making. Although slight variations were introduced, one general principle seemed to regulate the whole. One of the prettiest that was manufactured was round and flat, and arranged in this manner:—The first act was to collect together a handful of red roses—these formed the centre; around them was placed a narrow belt of mignonette; then a ring of white carnations; next in order came a band of purple pansies; heliotrope succeeded, not regular as the preceding, but scalloped; then came a band of pelargonium compactum, (salmon-colored,) raised a little above the other flowers; last in order was a row of dahlias and roses, placed alternately; and, surrounding the whole, fern-leaves.—(*Beck's Florist and Garden Miscellany.*)

ART. II. *Massachusetts Horticultural Society.*

Saturday, Nov. 16.—An adjourned meeting of the Society was held to-day—the President in the chair.

Josiah Crosby, West Cambridge, was elected a subscription member. Adjourned three weeks, to Dec. 7.

[At the meeting on the 2d of November, omitted in our last, Wm. P. Winchester, Cambridge, W. B. Johnson, Cohasset, Sidney B. Morse, Boston, and Nathaniel Martin, Brighton, were elected members.

Mr. Breck, Chairman of the Committee of Arrangements, reported that the whole amount taken at the Annual Exhibition was \$721 50; leaving a balance, after the payment of all expenses, of \$177 24, which was handed over to the Treasurer.]

Nov. 30.—*Exhibited*—FRUITS: From J. Washburn, fine Hubbardston Non-such apples. From S. L. Goodale, McLaughlin pears, and Ribston Pippin apples. From S. Hill, fine Glout Morceau pears. From J. Lovett, Minister and Gravenstein apples. From Hovey & Co., Sargeret and Beurré Langelier pears. From H. Vandine, Long Green of Autumn pears(?).

Fruits tested by the Committee: Beurré Langelier, from Hovey & Co.; a fruit of large size and handsome appearance—rich, juicy, and melting—and thus far has proved of first-rate excellence, keeping until January and February.

December 7.—An adjourned meeting of the Society was held to-day—the President in the chair.

On motion of C. M. Hovey, it was *Voted*, That a committee of five be appointed, to consider the expediency of procuring a bust of the late Hon. Theodore Lyman, to be placed in the library-room or hall of the Society;—and C. M. Hovey, J. Breck, J. S. Cabot, E. Wight, and J. Leach, were chosen the committee.

The thanks of the Society were voted to Dr. J. A. Warder, for numbers of the *Western Horticultural Review*, and to Messrs. Bauman, France, for catalogues; also, to P. Windsor, of Baltimore, for specimens of potatoes.

Geo. E. Adams, of Medford, was elected a member. Adjourned one week to Dec. 14.

December 14.—An adjourned meeting of the Society was held to-day—the President in the chair.

The Executive Committee reported the following appropriations for Premiums, for 1850:—

For Prospective Prizes,	\$750 00
For Flowers, Plants, &c.,	700 00
For Fruits,	500 00
For Vegetables,	150 00
For Gardens and Grounds,	200 00
	<hr/>
	\$2,300 00

December 21.—An adjourned meeting of the Society was held to-day—the President in the chair.

A letter, received from Mr. J. Gordon, was referred to the Committee on Gardens.

The President and M. P. Wilder were appointed to assist the Committee on Publication.

Adjourned one week, to December 28.

Exhibited—*Fruits*: From H. Vandine, Turkish Bon Chrétien, and Long Green of Autumn (?) pears; also, R. I. Greening and Dutch Codlin (?) apples. From J. Lovett, fine Glout Moreeau pears, and Golden Russet of Essex Co. and Sweet Russet apples, very handsome.

Fruits tested by the Committee: Belle Epine Dumas pears, from the President, fine; Columbia, good. Monarch, from Hovey & Co., not quite ripe.

December 28.—An adjourned meeting of the Society was held to-day—the President in the chair.

The President, Treasurer, and Chairman of the Committee on Finance, were appointed a committee to settle with Mr. Austin's executors.

Dr. E. Wight, C. M. Hovey, and Capt. Lovett, were appointed a committee to nominate a Committee of Arrangements for 1850.

The thanks of the Society were voted to Hon. R. C. Winthrop and J. M. Brown, for documents and pamphlets.

The several Committees on Gardens, Flowers, Fruits, and Vegetables, made their Reports, which were accepted, and the meeting was dissolved.

Exhibited—*Fruits*: From J. S. Cabot, handsome Baldwin and Greening apples, and fine specimens of Winter Nelis, Le Curé, Columbia, and Beurré d'Arenberg pears. From H. Vandine, extra fine specimens of Glout Moreeau and Long Green of Autumn pears. From B. V. French, White Seek-no-further apples, fine. From F. Tudor, specimens of Swan's Orange, Louise Bonne of Jersey, Duchess of Angoulême, and Seckel pears, remarkably well preserved, and of fair quality. From J. F. Allen, Black Hamburg,

Syrian, Muscat of Alexandria, West St. Peter, and Whortley Hall seedling grapes. From S. W. Cole, Baldwin apples. From George Walsh, Baldwin apples, and very fine Easter Beurré pears. From J. Washburn, Beurré Goubault pears. From C. Newhall, Lawrence pears.

Fruits tested by the Committee: Glout Morceau, from H. Vandine, very fine; Swan's Orange, Seckel, and other pears, from Mr. Tudor—very good for the late season at which they have been so well kept; White Seek-no-further apples, from B. V. French, fine.

The following are the reports:—

REPORT OF THE COMMITTEE ON GARDENS, AWARDING PREMIUMS FOR 1850.

The Committee on Gardens, in submitting this their first report, beg leave to state, that their duties being entirely new, and without any rules for their government, they have not been able to accomplish as much as they could have wished; yet they fully believe a new impetus has been given to more thorough and neat home cultivation, and that the objects of the society, in making the prizes, are being fully realized. The committee would here bear testimony to the general apparent improvement and neatness of nearly every place visited, and also to the very cordial reception they everywhere met with, making duty pleasant, and compensating for the tax upon their time. In making the awards, your committee have felt the difficulty of doing exact justice, but they have acted their best judgment, and been unanimous in opinion. They have not felt it imperative to give all the prizes according to the schedule, and have in some instances substituted gratuities, as being better adapted to the particular case, and have endeavored to express briefly the general or more prominent merits for which each gratuity or prize was made. In conclusion, the committee would respectfully recommend the adoption of the following rules and regulations, for the future government of the Garden Committee, and which the experience of the past season has clearly shown to be expedient and necessary.

1. All applications for a visit must be made to the chairman, on or before the 1st of May, stating extent of grounds, number of fruit trees, whether offered for a prize, and such a general outline as to give to the committee some sort of idea of the premises.

2. No fruit garden, or grounds, of less than one acre, and this well stocked and under fine cultivation, can occupy the time of the committee.

3. No *farm* will be visited, unless there should be connected with it a fine fruit garden, vegetable garden, flower garden, greenhouse, or graperies; in which case these *alone* will be examined.

4. It shall be the duty of the committee to select from the applications those which may seem most deserving of notice, and to visit as many places, and as often, as they may deem expedient and necessary.

5. In making all examinations, the utmost regard must be paid to economy and general thrift: in cases, however, of pleasure, landscape, or fancy grounds, more allowance must be made for taste and design, and a gratuity or complimentary notice may be made, at the discretion of the committee.

6. No place will be visited officially, and in reference to an award, without a written invitation.

7. All visits must be conducted without previous notice ; and if made out of season, or under unfavorable circumstances, due allowance will be made.

8. No person shall be a competitor for the highest prize, more than two years out of seven.

9. The committee may, at their discretion, give gratuities, or substitute gratuities for prizes, in any way best to serve the objects of the society, and meet special cases, (always, of course, within the limits of the appropriation.)

10. Competitors for the prizes, shall furnish to the committee, if required, a written statement of their mode of cultivation, quantity and kind of manure applied, amount of labor including their own, and other particulars called for, under the penalty of a forfeiture of such prize, if withheld.

11. The expenses of the committee shall be paid by the society ; and a record shall be kept by the chairman, of all places visited. *Respectfully submitted.* WM. R. AUSTIN. *For the Committee.*

The following prizes and gratuities have been voted for the past season:—

To O. Johnson, for the neatest, best kept, and most economical fruit garden, a prize of	\$25 00
To J. Gordon, for a productive and economical fruit garden, a prize of	15 00
To Messrs. Hovey & Co., for the well kept and thriving condition of their gardens, grounds, &c., a prize of	25 00
To the gardener of R. C. Hooper, for the general neat appearance of his greenhouse, garden, and grounds, a gratuity of	10 00
To Mr. John Geddes, the gardener of G. R. Russell, for a very neat and well kept vegetable garden, a gratuity of	10 00
Also, for a very neat and well managed grapery, a further gratuity of	10 00
To the gardener of J. P. Cushing, for the neatly kept and orderly premises under his care, a gratuity of	10 00
To J. F. Allen, for his extensive graperies, and great number of varieties, a gratuity of	15 00
To W. C. Strong and T. Needham, for well kept graperies during the season, a gratuity to each of	10 00
To W. R. Austin, for his neatly kept garden, well managed and promising condition of his fruit trees, a gratuity of	15 00

REPORT OF THE COMMITTEE ON FLOWERS, AWARDING PREMIUMS FOR 1850.

The Committee submit the following Report of Premiums for 1850:—

PREMIUMS AT THE OPENING OF THE HALL.

PELARGONIUMS.—Class I.—For the best six new and rare varieties, grown in eight-inch pots, to H. Grundel,	\$6 00
CUT FLOWERS.—For the best display, to J. Nugent,	3 00
For the second best, to J. Breck & Co.,	2 00

FUCHSIAS.—For the best six varieties, to E. Burns,	. . . . .	\$6 00
For the second best, to E. Burns,	. . . . .	4 00
CALCEOLARIAS.—For the best six varieties, to H. Grundel,	. . . . .	3 00
For the second best, to H. Grundel,	. . . . .	2 00
HEATHS.—For the best varieties, to H. Grundel,	. . . . .	3 00
For the second best, to H. Grundel,	. . . . .	2 00
VARIOUS SORTS.—For the best display of various sorts of Green-		
house Plants, not less than twelve pots, to H. Grundel,	. . . . .	8 00
For the second best, to E. Burns,	. . . . .	5 00
HYACINTHS.—For the best display, not less than twenty varieties, to		
J. Breck & Co.,	. . . . .	5 00
For the second best, to J. Breck & Co.,	. . . . .	3 00
TULIPS.—For the best thirty distinct varieties, to J. Breck & Co.,	. . . . .	8 00
For the second best, to Hovey & Co.,	. . . . .	6 00
For the third best, to J. Breck & Co.,	. . . . .	3 00
PANSIES.—For the best twelve distinct varieties, to Hovey & Co.,	. . . . .	4 00
For the second best, to Hovey & Co.,	. . . . .	3 00
For the third best, to J. Breck & Co.,	. . . . .	2 00
HAWTHORNS.—For the best display, to Winship & Co.,	. . . . .	3 00
For the second best, to J. Kenrick,	. . . . .	2 00
HARDY AZALEAS.—For the best display, to Hovey & Co.,	. . . . .	5 00
For the second best, to J. Kenrick,	. . . . .	3 00
SHRUBBY PÆONIES.—For the best six varieties, to H. Grundel,	. . . . .	5 00
For the second best, to J. S. Cabot,	. . . . .	4 00
For the best display, to H. Grundel,	. . . . .	3 00
HERBACEOUS PÆONIES.—For the best twelve flowers, having regard		
to the number of varieties, to H. Grundel,	. . . . .	5 00
For the second best, Hovey & Co.,	. . . . .	4 00
For the best display, H. Grundel,	. . . . .	3 00
PINKS.—For the best six distinct varieties,	} Not awarded.	. . . . .
For the second best,		. . . . .
For the best display,		. . . . .
ROSES.—Class I.— <i>Hardy Roses.</i> For the best thirty distinct vari-		
eties, to Hovey & Co.,	. . . . .	8 00
For the second best, to H. Grundel,	. . . . .	6 00
For the third best, to J. Breck & Co.,	. . . . .	4 00
For the best display, to Hovey & Co.,	. . . . .	3 00
Class II.—For the best twelve distinct varieties, to Hovey & Co.,	. . . . .	5 00
For the second best, to Hovey & Co.,	. . . . .	3 00
For the third best, to J. Breck & Co.,	. . . . .	2 00
Class III.— <i>Hardy Perpetual Roses.</i> For the best ten varieties, to		
H. Grundel,	. . . . .	5 00
For the second best, to Hovey & Co.,	. . . . .	4 00
For the best display, to Hovey & Co.,	. . . . .	3 00
<i>Prairie Roses.</i> For the best display, not less than six varieties, to		
J. Breck & Co.,	. . . . .	5 00
For the second best, not less than four, to Hovey & Co.,	. . . . .	4 00

For the third best, not less than four, to Winship & Co.,	\$3 00
CARNATION AND PICOTEE PINKS. —For the best ten varieties, to Hovey & Co.,	5 00
For the second best, to Hovey & Co.,	4 00
For the best display, to Hovey & Co.,	3 00
MAGNOLIAS. —For the best display through the season, to Winship & Co.,	3 00
For the second best, to J. Kenrick,	2 00
HARDY RHODODENDRONS. —For the best display of the season, to Hovey & Co.,	5 00
For the second best, to Hovey & Co.,	3 00
For the third best, to Hovey & Co.,	2 00
DOUBLE HOLLYHOCKS. —For the best display, to Hovey & Co.,	5 00
For the second best, to Breck & Co.,	4 00
DOUBLE BALSAMS. —For the best display, to T. Needham,	3 00
For the second best, to J. Nugent,	2 00
For the third best, to Hovey & Co.,	1 00
PHLOXES. —For the best ten distinct varieties, to J. Breck & Co.,	6 00
For the second best, to Hovey & Co.,	4 00
For the third best, to P. Barnes,	3 00
GERMAN ASTERS. —For the best display, to I. Spear,	4 00
For the second best, to J. Nugent,	3 00
For the third best, to L. Davenport,	2 00
HERBACEOUS PERENNIALS. —For the best display through the season, the Society's Silver Medal, to J. Breck & Co.,	5 00
For the second best, to P. Barnes,	4 00
For the third best, to Winship & Co.,	3 00
ANNUALS. —For the best display through the season, the Society's Silver Medal, to P. Barnes,	5 00
For the second best, to J. Breck & Co.,	4 00
For the third best, to J. Nugent,	3 00
CAMELLIAS. —For the best twelve varieties of cut flowers, with foliage, to Hovey & Co.,	8 00
CHINESE PRIMROSE. —For the best six plants, in not less than four varieties, in pots, to Hovey & Co.,	3 00
GREENHOUSE AZALEAS. —For the best six varieties, in pots, to Hovey & Co.,	6 00
For the second best, to Hovey & Co.,	4 00
FLOWERING SHRUBS. —For the best display, during the season, to Winship & Co.,	5 00
For the second best, to J. Kenrick,	4 00
For the third best, to J. Breck & Co.,	3 00

 The Premiums awarded at the Annual Exhibition, in September last, will be found at p. 472, and the Premiums for Dahlias at p. 523, of our volume for 1850.

GRATUITIES.

To A. Bowditch, for Forced Hyacinths, the Silver Medal,	\$5 00
To T. Needham, for Ceropegia elegans, the Silver Medal,	5 00
To J. Tidd, for Seedling Cactus,	2 00
To J. Breck & Co., for Iris susianna, the Silver Medal,	5 00
To Geo. Johnson, for Seedling Yellow Rose, the Silver Medal,	5 00
To T. Owens, for Orchids, the Silver Medal,	5 00

PREMIUMS AND GRATUITIES AT THE WEEKLY EXHIBITIONS.

To Winship & Co., for Bouquets, Cut Flowers, &c., at weekly shows, \$17 00	
To Hovey & Co., for the same,	11 00
To J. Breck & Co., for the same,	24 00
To A. Bowditch, for the same,	11 00
To H. Grundel, for the same,	8 00
To Miss Russell, for the same,	14 00
To J. Nugent, for the same,	16 00
To P. Barnes, for the same,	19 00
To L. Davenport, for the same,	11 00
To Miss Kenrick, for the same,	11 00
To John Hovey, for the same,	10 00
To E. Burns, for the same,	7 00
To W. Kenrick, for the same,	2 00
To W. E. Carter, for the same,	3 00
To J. A. Kenrick, for the same,	3 00
To Mrs. E. A. Story, for the same,	2 00
To Miss Barnes, for the same,	1 00
To T. Needham, for the same,	1 00
To E. Winslow, for the same,	1 00
To J. W. Brown, for the same,	1 00

For the Committee: D. HAGGERSTON, *Chairman*.

REPORT OF THE COMMITTEE ON FRUITS,

AWARDING PREMIUMS FOR 1850.

The Committee on Fruits submit a Report of their awards of the premiums offered by the Society, for the year now closing.

The Committee cannot but congratulate the Society on the favorable results, in relation to that branch of horticultural science with which they are connected, that have thus far attended its operations, and of an evidently continued approximation towards the attainment of some of the objects for which it was instituted, as manifested by a greater superiority, from year to year, in the fruits exhibited, thereby showing a more scientific and improved cultivation; by the greater number of varieties from year to year placed upon its tables, thus proving the success of efforts, either by collecting the seedlings scattered through our own country, or by importing from Europe its choicest kinds, to obtain for the use of its members and the public, all the varieties of every species of fruit that are worthy of an extended cultivation; on the continued interest of its members in these objects of the

Society, and upon its continued favorable consideration with the public as evidenced by an increased number of competitors for its premiums, and a more general attendance at its exhibitions.

The success that has thus far attended the Society, instead of causing any relaxation, should act as a stimulus to greater zeal and more vigorous and skilful efforts, on the part of its members, to the promotion, if not to the full attainment, of the ends contemplated by its founders.

An unusual quantity of rain through the spring and summer of the past year, followed by a remarkably pleasant, dry autumn—with no “killing frosts” until late in the latter season—affording ample opportunities for the trees to ripen their wood and perfect their buds, and enabling the grasses to retain their freshest green uninterruptedly from spring till late in autumn, have been some of its peculiar characteristics. April and May, in this vicinity, were cold and wet, accompanied with long-continued east winds and much rain at the time the fruit trees were bursting their flower-buds; whilst the summer was distinguished by less than the usual quantity of heat, and more than the usual supply of moisture. As was to be expected, the effects of these causes have not failed to be manifested, in the productions of our gardens and orchards, by a diminution in quantity, or deterioration in quality.

The past season cannot be considered as one propitious to either fruit trees or fruit. For both, there was probably too much wet—the vigor and growth of the former, and the flavor and richness of the latter, being injuriously affected thereby. Apples and pears in Massachusetts, though in some sections of it abundant, were, on the whole, both as regards quantity and quality, below an average. Peaches, in most situations, were in great abundance, but inferior in quality. Cherries were inferior, and plums below a medium crop. Grapes generally failed to perfect and ripen their fruit; those raised in graperies, even, being deficient in size, color, or flavor. Of the smaller fruits—the strawberry, raspberry, &c.—there was an ample supply, with, for the most part, a deficiency in richness, sweetness, and flavor.

A reasonable hope had been indulged, that opportunity would, the past season, have been afforded to test the quality of many of the new varieties of pears that, during the past few years, have by importations been added to our collections; but this expectation, though not wholly disappointed, has not been gratified to the extent anticipated. Specimens of some of these have been placed on your tables; and some new varieties, of native origin, have also been submitted to the examination of your Committee. Two varieties of seedling strawberries, raised by him, have been exhibited by the President of the Society. One of these varieties was a staminate of a dark red color, very fine flavor, good size, hardy, and very productive; worthy, if any staminate variety is, as your Committee think, of an extended culture. The other was a pistillate, of a light red color, possessing also many valuable properties. Specimens of twenty varieties of strawberries were, the past season, presented to the Society by Mr. L. E. Eaton, of Providence; many of them of recent importation, and new to your Committee. Unfortunately some of the varieties had received injury in the carriage, and their

quality could not be so accurately tested as was desirable. Some of them were of fine flavor, and—especially one marked Gen. Jacquemont—will, it is believed, prove desirable acquisitions. Another opportunity of testing Jenney's Seedling strawberry, has strengthened the Committee in their former expressed opinions of this variety. The plants are very hardy and productive; the berries very solid and heavy—when perfectly ripe, losing their acidity, and becoming very fine in flavor. In the opinion of your Committee, it is a very estimable variety.

August 2, 1850, Mr. J. Shed Needham, of Danvers, exhibited a box of berries, of the *white* high-bush bramble. These were of a pinkish white or rose color, not of very great size; evidently a variety of, or accidental sport from, the common high-bush blackberry, and worthy of note rather as a novelty, than as possessing any superior qualities. The plant was found in the woods by Mr. Needham, and by him transplanted to his garden.

Although possessing no claim to novelty, the great beauty and uncommon size of some Elton cherries, probably the finest and largest ever placed on the tables of the Society—raised by Mr. J. F. Allen, under glass—rendered them worthy of especial notice in this Report. For three years in succession, including that now closing, a small red cherry, very sweet, and of pleasant flavor—doubtless a variety of the Mazzard—has been exhibited by Mr. Solon Dike. This the Committee have judged worthy of a name, and having been requested by the exhibitor to name it, have decided upon calling it Dike's Mazzard. But, of all the seedling cherries that have been yet brought under the notice of your Committee, those produced and repeatedly shown by Mr. George Walsh, are by far the best. Of these, there are three varieties, and by Mr. Walsh numbered 1, 2, and 3. These cherries resemble each other, and have probably a similar origin. They are of a very dark color, large, sweet, rich flavor, and rivalling, in their beauty, size, and quality, that standard variety, the Black Tartarian. They are represented as good bearers, and not liable to rot. They have been disseminated, this year, by the distribution of buds, for the first time, and will now soon be tested in various different situations. Should they be found to succeed as well in different situations, and with common cultivation, as in the place of their origin, they will prove a valuable acquisition.

Another opportunity has been afforded, the past season, of testing the Reine Claude de Bavay Plum—a variety with a reputation for great excellence, imported at a high cost from Europe, within a few years. It is a plum of medium size, of yellowish green color, and sweet, pleasant flavor—a clingstone, ripening late in the season, and keeping into October—and, though thus far hardly maintaining the reputation that preceded its introduction, is a good fruit, and one probably worthy of cultivation. A new plum, called De Montfort, of a most delicious flavor, was presented to the Committee on the 24th of August, by Hon. M. P. Wilder. Red Currants, of large size, somewhat later than the Red Dutch, called Gondouin, were exhibited, the past season, by Josiah Lovett, 2d. They were of good flavor, and said to be productive.

Your Committee have, this year, had an opportunity, for the first time, of

trying the quality of some new pears, and also of further testing some of those more recently introduced. Among the former was a pear, said to be of native origin, presented by Messrs. Hovey, on August 31. It is a fruit of medium size, round oblong shape, yellow color, with a fine blush in the sun, and with russet at the stem; skin smooth; flesh melting, juicy, and of a very pleasant flavor; resembling, in its general appearance, the Golden Beurré of Bilboa.

On August 24, Mr. Francis Dana, who seems to have been very successful in producing new pears from seed, exhibited another seedling pear raised by him, that promises to be an acquisition to our stock of summer fruits. It was of medium size, pyriform shape, swelled out at the stem, somewhat rough, yet full of a rich, sprightly juice.

The Swan's Orange, or Onondaga Pear, has, the past year, been produced in greater quantities than before, in this vicinity; and, accordingly, better means of judging of its value for general cultivation have been afforded, though not sufficient, perhaps, to authorize the expression of an entirely confident opinion. Although this fruit will probably never be placed by connoisseurs in the very first rank for excellence—different specimens varying much in quality—yet its general good qualities, its size and beauty—in connection with the circumstances that the trees are said to be very productive, of vigorous habit, and early bearing—will, it is believed, render it worthy of an extended cultivation.

Beurré Langelier gives promise of maintaining in this country its European reputation, and of justifying, in a measure, at least, the pretensions made for it by its originator. It is a handsome fruit, of good size, yellow color, with a fine blush in the sun—melting, juicy, and of an agreeable taste—whose season is January and February, though some of the specimens this year ripened in November.

The pear Nouveau Poiteau—in size large or above a medium, of a dark green color, flesh buttery and melting, ripening in November—has fruited for the first time in this country, the past season; but, as only one opportunity has been afforded of testing it, any expression of opinion as to its merits would be premature.

Specimens of the Beurré Sprin have been, the last season, exhibited by Josiah Lovett, 2d; and of Beurré Goubault, and of Fondante de Malines, by John Washburn. These pears are of recent origin or introduction, and but few opportunities have as yet been afforded for testing their quality; a circumstance that, in the opinion of the Committee, renders it expedient for them to delay any statement respecting them for the present.

Although seven years have elapsed since it was fruited for the first time in this vicinity, the Doyenné Boussock, or Boussock Nouvelle, seems in a great measure to have escaped notice until recently, when attention was more particularly called to it by the production of many fine specimens, and those raised in different situations, and under not particularly favorable circumstances. At the last annual exhibition of the Society, pears of this variety, from William Davis, were among the most attractive objects on the tables. It is of very large size, great beauty, good quality, and appears

worthy of an extensive circulation. These remarks are also in some respects applicable to the *Beurré d'Anjou* and *Paradise of Automne*—fine pears, that do not appear to have received that attention from cultivators to which they are justly entitled.

Northern Spy Apples have been exhibited for the first time, by Dr. Wight, of Dedham. From their size, great beauty, and good quality, specimens of this variety, brought from and raised in Western New York, have been greatly admired; and strong hopes were indulged, as the trees are hardy and grow vigorously, that the variety would succeed well with us. The specimens exhibited, thus far, hardly give promise of the fruition of this hope. As, however, it is the first year of their production, perhaps they were not a criterion of what may be expected, and great improvement in size and quality may hereafter be attained.

Although omitted in perhaps its more appropriate place in this Report, a mention of the fact should not be neglected, that *Lewis* or *Boston Nectarines*, remarkable for size and beauty, superior to any that as yet have been brought under the notice of your Committee, were exhibited at one of the weekly exhibitions of the Society, the past season, by Mr. Stephen H. Perkins.

A strong desire on the part of the Committee to place before the Society all the information they possess respecting fruits of recent origin or introduction, and such opinions as their opportunities have enabled them to form of the qualities of such, has given rise to the preceding notices of some varieties; but, aware that specimens of fruit produced from young trees, of the first or even second year of bearing, are not always a true criterion of the qualities of the variety—and that, before a reliable judgment can be formed, specimens from trees arrived at some degree, at least, of maturity are necessary, and those, too, subjected to a variety of soils and situations, and different modes of culture—an equally strong desire on their part not to mislead, prompts a caution that implicit confidence should not be given to opinions, if not hastily formed, at least not grounded on sufficient data. With respect to the qualities of a fruit, especially winter fruits, much may depend upon the mode of ripening. With some, no care whatever is necessary, while others only arrive at their perfection under some peculiar process; and a knowledge of this fact is necessary, in order to warrant a perfectly correct conclusion with respect to the merits of a variety. Upon the whole, it is believed that it will prove the best and safest course for beginners to make their selections from well known and established kinds; unless, in their estimation, the gratification of a desire for novelties—an interest in watching the progress and development of some new varieties, and of contributing from their experience a share to the common stock of pomological knowledge—form a sufficient recompense for probably repeated and frequent disappointments.

The cultivation of the pear seems, for many years past, to have occupied the almost exclusive attention of horticulturists; and the interest in this fruit, both in this country and Europe, has led to the production from seed of almost countless varieties. While it is not intended or desired to underrate

this, one of our most valuable fruits, yet it is to be regretted that this almost exclusive devotion to its cultivation, and the production of its varieties, has caused the almost entire neglect of another species—certainly as useful, and, in an economic point of view, more valuable—the apple. Of this last, it is true, we possess numerous varieties, and some of great excellence, but for the most part of accidental origin, and without the application to their production of those scientific principles that, in the case of the pear, has conduced to so great perfection. Although, as has been said, we have numerous varieties of the apple, yet there are purposes and seasons for which suited varieties are yet to be supplied. We need, among others, an apple suited to our soil, climate, and general cultivation, and of superior quality, to succeed the Early Harvest; a late-keeping sweet apple; apples for the table, as well as those for culinary purposes, that shall retain their spirit and flavor until towards that season when the fruits of the succeeding year make their appearance. No better field for the exercise of the skill and judgment of the pomologist, it is believed, remains open, than attempts, conducted upon scientific principles and with a view to the supply of existing wants, to the production of seedling apples; and none that will better reward his efforts.

It should be kept in mind that the Committee, in making their award of prizes, have had reference not only to the superiority of the articles competing, but their adaptation to general cultivation; and that they have hesitated or declined to award a prize to a fruit that only arrives at perfection under the most favorable circumstances, that is disposed to canker, or from other cause is not suited to general culture, even when the particular specimens exhibited might be of superior excellence—an unwillingness to mislead the inexperienced having induced this kind of discrimination.

The Committee would especially notice the many fine specimens of fruit exhibited by the President of the Society; and they do so with the greatest pleasure, as he has declined taking any of the premiums.

With these remarks, your Committee now submit their award of the prizes offered by the Society, for the past year:—

For the best and most interesting exhibition of Fruits during the season, to J. F. Allen, the Lowell Plate, valued at	\$20 00
For the second best, to Messrs. Hovey & Co.,	12 00
APPLES.—For the best twelve summer apples, on or before the last Saturday in August, to O. Johnson, for the Red Astrachan,	
For the next best, to A. D. Williams, for Williams's Favorite,	4 00
For the best twelve autumn apples, on or before the last Saturday in November, to J. S. Sleeper, for Hubbardston Nonsuch,	
For the next best, to J. Lovett 2d, for the Gravenstein,	4 00
For the best twelve winter apples, on or before the last Saturday in December, to O. Johnson, for Baldwin,	
For the next best, to J. S. Cabot, for R. I. Greening,	4 00
BLACKBERRIES.—For the best specimens, not less than two boxes, to	
J. Lovett 2d,	5 00
For the next best, to C. E. Grant,	3 00

CHERRIES.—For the best specimens, not less than two boxes, to Otis Johnson, for Black Tartarian,	\$6 00
For the next best, to Geo. Walsh, for his seedling,	4 00
CURRANTS.—For the best specimens, two boxes, to Geo. Wilson,	5 00
For the next best, to O. Johnson,	3 00
FIGS.—For the best twelve specimens, to J. F. Allen,	5 00
For the next best, to Hovey & Co.,	3 00
GOOSEBERRIES.—For the best specimens, two boxes, to J. Lovett 2d,	5 00
For the next best, to J. Hovey,	3 00
A gratuity, for specimens of fine Gooseberries, to Dr. S. G. Howe,	3 00
GRAPES.—For the best specimens, grown under glass, on or before the first Saturday in July, to E. Burns,	10 00
For the next best, to T. Needham,	7 00
For the best specimens, grown under glass, subsequently to the first Saturday in July, to Hovey & Co.,	10 00
For the next best, to T. Needham,	7 00
For the best specimens of native grapes, (Isabella,) to A. W. Stetson,	5 00
For the next best, (Isabella,) to C. E. Grant,	3 00
MUSK MELON.—For the best Musk Melon, in open culture, on or before the last Saturday in September, to E. M. Richards,	5 00
For the next best, to Hovey & Co.,	3 00
NECTARINES.—For the best twelve specimens, to S. H. Perkins,	5 00
For the next best, to J. F. Allen,	4 00
For very fine Nectarines, to W. C. Strong, a gratuity of	4 00
PEACHES.—For the best twelve specimens grown under glass, on or before the second Saturday in July, to J. F. Allen,	6 00
For the next best, to O. Johnson,	4 00
For the best twelve specimens, in open culture, to G. Merriam,	6 00
For the next best, to J. F. Allen,	4 00
For fine Peaches, to E. King, a gratuity of	4 00
For the same, to Hovey & Co., a gratuity of	4 00
PEARS.—For the best collection, not exhibited before this year, with a written description of the same,	
For the next best,	
[There were no competitors who came within the rule, and no prizes were awarded.]	
For the best twelve summer pears, on or before the last Saturday in August, to Hovey & Co., for a native pear, unnamed,	6 00
For the next best, to J. Stickney, for the Madeleine,	4 00
For the best twelve autumn pears, on or before the last Saturday in Nov., to F. Tudor, for Swan's Orange, or Onondaga pear,	6 00
For the next best, to J. Lovett 2d, for Beurré Bosc,	4 00
For fine Andrews pears, to F. Dana, a gratuity,	3 00
For fine Marie Louise pears, to H. Vandine, a gratuity,	3 00
For fine Beurré Bosc pears, to S. Driver, a gratuity,	3 00
For fine Capiaumont pears, to E. Cleaves, a gratuity,	3 00

For fine Paradise of Automne pears, to J. Stickney, a gratuity,	\$3 00
For the same, to J. Lovett 2d, a gratuity,	3 00
For the best twelve winter pears, on or before the last Saturday in December, to H. Vandine, for Glout Morceau,	10 00
For the next best, to J. S. Cabot, for Columbia,	6 00
PLUMS.—For the best specimens, not less than two boxes, to George Walsh, for Green Gage,	6 00
For the next best, to J. Mann, for Green Gage,	3 00
QUINCES.—For the best twelve specimens, to S. Downer, Jr.,	5 00
For the next best, to H. Vandine,	3 00
RASPBERRIES.—For the best specimens, not less than two boxes, to J. Lovett 2d, for Knevet's Giant,	5 00
For the next best, to J. Lovett 2d, for Fastolf,	3 00
STRAWBERRIES.—For the best specimens, not less than two boxes, to O. Johnson, for Hovey's Seedling,	6 00
For the second best, to J. Richardson, for Hovey's Seedling,	4 00
For the third best, to Hovey & Co., for Hovey's Seedling,	3 00
For fine specimens of Jenney's Seedling, to W. P. Jenney, a gratuity of	4 00

As accidentally the offer of prizes for apricots were omitted, and fine apricots were repeatedly exhibited by Franklin King, the Committee award to him, as a gratuity, the Silver Medal of the Society.

For the Committee: JOSEPH S. CABOT, *Chairman*.

☞ The Premiums awarded at the Annual Exhibition, in September last, in addition to the above, will be found at p. 477 of our volume for 1850.

REPORT OF THE COMMITTEE ON VEGETABLES, AWARDING PREMIUMS FOR 1850.

The Committee on Vegetables, for the year 1850, report the premiums awarded by them, as follows:—

ASPARAGUS.—To F. A. Davis, for the earliest and best,	\$3 00
To J. Hill, for the second best,	2 00
BEETS.—To A. D. Williams, for the best,	3 00
BROCCOLI.—To J. Lovett, for the best three heads,	5 00
BEANS.—To John Gordon for the best Lima beans,	3 00
HORSE RADISH.—To A. D. Williams, for the best,	3 00
CABBAGES.—To A. & G. Parker, for the best Drumhead,	5 00
To A. D. Williams, for the second best,	3 00
CARROTS.—To A. D. Williams, for the best exhibited,	2 00
CAULIFLOWERS.—To J. A. Kenrick, for the best and largest,	5 00
To Lyman Kinsley, for the second best,	3 00
CELERY.—To J. Crosby, for the best and largest, blanched, gratuity,	3 00
CORN.—To A. D. Williams, for the best and earliest sweet corn,	3 00
To A. Bowditch, for the second best,	2 00
CUCUMBERS.—To H. B. Crooker, Thos. Needham, gardener, for the best cucumbers under glass,	5 00

To S. Bigelow, E. Burns, gardener, for the second best, under glass,	\$3 00
To A. D. Williams, for the best in open culture,	3 00
EGG PLANTS.—To A. & G. Parker, for the best display,	5 00
To J. Breck, for the second best,	2 00
LETTUCE.—To A. & G. Parker, for the best,	3 00
To J. Crosby, for the second best, gratuity,	2 00
POTATOES.—To D. Peirce, for the best and earliest,	3 00
To A. D. Williams, for the second best,	2 00
PEAS.—To S. Bigelow, E. Burns, gardener, for the best and earliest,	3 00
RHUBARB.—To L. Kinsley, for the largest and best,	5 00
To J. Lovett, for the second best,	3 00
SQUASHES.—To A. D. Williams, for the best Canada Squash,	3 00
To A. & G. Parker for the greatest variety exhibited,	5 00
TOMATOES.—To A. D. Williams, for the best and earliest,	3 00
VEGETABLES.—To A. Moore, for the best display and greatest variety at the weekly exhibitions, during the season,	5 00
To A. D. Williams, for the second best,	3 00
All of which is respectfully submitted. For the Committee: AZEL BOW-DITCH, <i>Chairman.</i>	

☞ The Premiums awarded at the Annual Exhibition, in September last, in addition to the above, will be found at p. 479 of the volume for 1850.

HORTICULTURAL OPERATIONS

FOR JANUARY.

FRUIT DEPARTMENT.

GRAPE VINES in early vineries will now begin to swell their eyes, and the temperature will require to be kept up on severe nights. Syringing should be performed daily in order to have them break strong. As soon as the shoots are well advanced the vines should be tied up loosely to the trellis, allowing the ends to depend, in order that all the eyes may be evenly broken. Vines in greenhouses will not require any attention now, as they will be at rest till the commencement of next month.

FIGS in pots may now be brought into the stove, or greenhouse, for an early crop.

PEACHES in pots may also be brought forward, by bringing them into the greenhouse.

SEEDS of gooseberries, currants, grapes, and other fruits, may now be planted in pots or boxes, and placed in the greenhouse or hotbed.

SCIONS of fruit trees of all kinds may now be cut, preserving them in a cool cellar, by placing the ends in earth or sand.

FLOWER DEPARTMENT.

CAMELLIAS will now be coming into general bloom, and will require liberal supplies of water, and occasional syringing over the foliage. Keep the soil free from moss by stirring or loosening the surface.

PELARGONIUMS will now commence a more vigorous growth, and the strongest plants will require to be repotted, their branches tied out, and pinched off at the ends to make them dwarf and bushy plants. Keep them in a cool, airy part of the house, as near the glass as convenient, and be rather sparing in the supply of water.

CHINESE PRIMROSES may now have a shift into a larger pot.

CALCEOLARIAS may be shifted again, if they have made a vigorous growth.

PETUNIAS for spring blooming should now be shifted into large pots, and trained up to a neat circular or flat trellis.

PANSY SEED may now be sown for early blooming in the open border. Plants in pots may now have a shift into a larger size.

SCHIZANTHUSES may now have another shift, as they soon suffer if pot bound.

ACHIMENES of the various kinds may now be started for early blooming.

DAHLIAS for very early blooming may be started the last of the month.

JAPAN LILIES to be grown in the house should now be potted, and placed in a cool situation until they have advanced an inch or two.

VERBENAS should now be repotted, and trained up to neat trellises. Seeds may be planted now.

OXALISES done flowering may now be placed away under the stage.

FUCHSIAS should now be pruned and potted.

HELIOTROPES should now be propagated for a spring stock.

HEATHS in small pots should now be shifted into a larger size.

CINERARIAS should now be repotted; keep them free from the green fly.

ROSES, taken up out of the ground in October, should now be pruned and brought into a warm part of the house, where they will soon flower.

AZALEAS will now require to be more liberally watered.

ALYSSUM and MIGNONETTE may now be planted for early blooming.

BEGONIAS will require pruning and repotting as soon as they begin to grow.

TREE PÆONIES in pots, now brought into the house, will bloom freely in March.

SALVIAS may now be propagated for a spring stock.

STEPHANOTUSES should be pruned, repotted, and started into growth in the warmest part of the house.

DAPHNES, done flowering, should be headed in so as to make handsome bushy plants.

GREENHOUSE PLANTS, of all kinds, will need attention now. Repot all that need it; and prune and tie up the branches to neatly made stakes.

THE MAGAZINE
OF
HORTICULTURE.

FEBRUARY, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Trees in Cities.*

By GEORGE JACQUES, Worcester, Mass.

OF the variety of topics discussed in Horticultural Magazines, that of planting trees in cities seems hardly to have received the attention that it deserves.

Upon a hot day in August, when the fierce rays of the sun have all things after their own way upon the unsheltered pavements of Washington Street, one has only to pass a few steps to Beacon Street Mall, and the contrast will at once teach him, more than any written language can impress it upon his mind, that trees are as essential to the comfort, if not health, of city life, as they are to the beauty of a landscape.

It is not my purpose to attempt to write an elaborate essay upon planting trees in cities, but rather to call out others more competent than myself to discuss the subject. At present, therefore, I wish to say only a few words.

1. *What trees are best adapted for shading the streets and parks of a city?*

In answering this question, I shall name the trees according to,—as it seems to me,—their comparative value. I begin with the American Weeping Elm. Of all large-growing trees, this, to my taste, is incomparably the most graceful, majestic and beautiful. The ease with which it may be transplanted, its rapidity of growth, and its exemption, (com-

parative exemption,) from the depredations of insects, also greatly enhance its claim to the first rank among city trees. Its forms,—in early life vase-like, in maturer years like an umbrella, or weeping willow, and in old age like the sturdy oak,—in every stage of its existence are the forms of beauty and gracefulness. For parks or wide streets, it is the tree of trees. For less space, narrow streets, &c., the horse chestnut perhaps ranks next, whether we regard its beauty, or the ease with which it may be transplanted, or the ability which it possesses of taking care of itself. In this latter respect, it is unsurpassed by any tree with which I am acquainted. My third favorite is the sugar maple. This fine tree, like the horse chestnut, has something prim and old-maidish about its growth; still it is very beautiful, and like fairer beings, not to be set aside for little peculiarities of habit.

Next to the sugar maple, I would name the Norway maple,—another of the family, differing chiefly from the foregoing in the size of its leaves, which closely resemble those of the sycamore. With this, I think the ash, white, black, and European, may properly enough be ranked. Next succeeding these, I place the silver maple and the European linden,—trees of great beauty and of very rapid growth, but liable to the attacks of the borer.

Of many trees, I have thus noticed nine which seem well deserving the attention of those who plant trees in cities.

2. The next query is, *Where to locate the trees?*

I propose, at present, to speak first of planting trees upon side-walks. In American cities, it is customary to construct streets with a wide carriage-way in the middle, and a walk for pedestrians on either side. Trees are usually planted on the line between these foot-walks and the carriage-way.

The middle of a side-walk, properly graded, should be level with, or a little higher than, the middle of the opposite carriage-way; and the gutters between the walks and carriage-way should be broad and shallow. Upon streets thus constructed, trees have a chance to grow much better than where the walks are high and the gutters deep, as we often see them.

Another question occurs:—Is the effect better where trees of *one* variety only are planted upon a long line of side-walk, or where two varieties are planted alternately—say first an elm, then a maple, then an elm, then a maple, and so on; or yet where several varieties are planted along, one after the other,—as first an elm, then a maple, then an ash, then a linden, &c., &c.

I am for *one variety only*,—all elms, all maples, or all something else. The effect of elms and maples alternating with each other, is not objectionable; but he who plants a long line of single, equidistant trees, has little enough of *unity* left in his work, without attempting to depart further from this essential element of the beautiful.

In this connection, I wish to say a word in regard to the width of sidewalks and streets.

We often see sidewalks very narrow, say only four or five feet in width. Upon such walks it is questionable whether to plant trees at all, as the space which they would occupy is worth more than their beauty or their shade. Even eight feet is a narrow width for a sidewalk; ten is better and does very well; but twelve, or even fourteen or fifteen feet, looks still better, where there is room enough left in the middle of the street for carriages. These narrow streets are an utter abomination, making one almost wish that hereafter no city should be entitled to a charter, unless its narrowest street exceeded forty feet in width. And, although wandering from my subject, I would add, that speculators, who hover around large cities, laying out cornfields and cowpastures into streets and building-lots, ought to learn that the narrower the street, the meaner, if not poorer, will be its occupants!—and that, however a street may have been originally planned, those who have control of it can far more easily contract than expand its limits, just as to cut down and destroy a beautiful tree, is easier than it is to cause one to grow.

Still another and more difficult question remains to be answered: How ought the trees in a city common or park, to be arranged?

Take as an example Boston Common. Here we have, for

the most part, a smooth grass surface, intersected by straight wide gravel-walks, and these lined on each side with trees placed along at equal distances from each other. But suppose no tree or walk were there, and a *carte blanche* were given to any one that he might arrange all things to his own fancy, what would *you* do, Mr. Editor? Would you plant *straight* rows of *equidistant* trees there? Probably not. For, although such an arrangement of fruit or shade trees may be in its place very convenient and useful, it can never please the eye which admires the picturesque beauty of trees growing in groups.

Suppose the trees upon the Common were gathered together in groups,—here a thicket, there a wide space of open lawn; or suppose the primitive forest,—such as perhaps once grew there,—had remained, and clearings been made with a bold hand to let in the sunshine, would you not prefer either of these conditions to the present one, beautiful as it may be?

As I have not leisure to write any more, I hope that you will take up the subject, and give us your own views upon the whole subject of TREES IN CITIES.

Worcester, Dec., 1850.

The communication of our correspondent is one of peculiar interest, and the suggestions he offers of great importance,—of so much importance, indeed, that we do not feel willing to attempt a full review of them, in the space we have now to spare, but would prefer at another time to devote a whole article to the subject. Yet we cannot allow the present opportunity to pass without a few words of comment, and at the same time to request the attention of our correspondents to Mr. Jacques's article, with the hope that we may have their views upon a subject so interesting to all. We know of no one so well able to aid in the laudable effort of improvement in the planting of trees in cities, as Gen. Dearborn, and we trust we may hear from him, and give our readers the benefit of his extensive experience and practical knowledge upon this subject.

Mr. Jacques's first query relative to the trees best adapted

for streets, is well answered by himself, and we heartily concur in all that he has advanced as regards the kinds, and their adaptability to the object in view. The American elm, as he truly remarks, for parks, is the "tree of trees;" but on no account should it be planted in a street of less width than *eighty feet*. This proposition we know will startle many who think an elm will grow anywhere, and is equally as suitable to a narrow as a wide street,—to a garden plot of a hundred feet square, as well as to a park of fifty acres,—and who always judge of the room it will occupy, by its size when set out. Those, however, who have seen the elm in its mature state, who have admired its majestic form, spreading its broad arms over pasture and field, know that without space its real beauty is lost, and that a full-grown tree in a forty foot street, is as much out of place as a berberry bush in the middle of a small flower bed.

For all narrow avenues, the other trees mentioned by Mr. Jaques, may be planted; but unless more than forty feet, we should be inclined to reject even the horse chestnut.

We hardly think Mr. Jaques has said enough in favor of the silver maple;—it is a rapid growing tree, of a free and graceful form, and its clean bark and reddish spray always give it a cheerful look, even in its defoliated state. As we have never known it to be troubled with the borer, we should place it next to the elm for street planting.

A few other trees Mr. Jaques has omitted: these are the Scotch elm, the Huntington elm, and the American beech,—all beautiful trees, and suitable for all but the narrowest streets.

The second query relative to the mode of planting, as well as style of arrangement, is equally as important as to know what the best sorts are; and here, too, we agree with Mr. Jaques.

There can be no question that true taste would designate that for streets or avenues, but *one* kind should be planted; that is, either all elms, or all maples, &c. We have in our grounds an avenue of silver maples, 1200 feet long, planted six years ago; they are twenty feet apart, and are now from

twenty to thirty feet high each, and some of them *thirty-six inches* in circumference at the base. When in full leaf, nothing can exceed the beauty of these two lines of trees. We also have another line of trees, forming one side of a street, 1200 feet long, planted with Scotch elms, limes, and silver maples alternately,—that is, first an elm, then a lime, then a maple, and so on to the end; the effect to our eye, of these trees, is not to be compared with the entire avenue of maples. Variety or novelty such a mixture may possess, but the true element of beauty is wanting. We may be attracted by the variety of foliage, by the difference of form, or by the contrast which such a mixture always affords, but the result cannot be otherwise than monotonous. On the contrary, an avenue planted with only one variety will always present, in its broad masses of foliage, in its harmonious lines, and its unity of character, a pleasing and lasting impression of natural beauty.

The last question is one which we must reserve for another occasion,—particularly the reference to Boston Common; and as a worse specimen of bad arrangement and bad taste is nowhere to be found, we shall endeavor to discuss the subject at some length. In the mean time we hope to have the opinions of our friends, upon the queries proposed by Mr. Jacques.—*Ed.*

ART. II. *Heating Hothouses and Greenhouses by Hot Water, scientifically and practically considered.* By R. B. LEUCHARS, Garden Architect.

(Continued from Vol. XVI., p. 485.)

By way of illustrating the misapplication of the principles on which hot water is made to circulate in pipes, and thereby warming all parts of a house more equally than by any other means, I will describe two apparatuses of different forms, which I have lately been called to examine, and though very

different in their construction, yet both manifesting the same want of knowledge in the principle, illustrated in my last paper, (Vol. XVI., page 482.) And as those forms and apparatus are by no means uncommon, it would be well for those interested in the matter to mark the errors which I would now point out.

In the first instance, the boiler was situated, as it usually is, at one of the back corners of the house, which was a common lean-to vinery, but intended also to keep plants during winter; on the back of the vinery was a cellar, and other domestic offices connected with the dwelling-house, the floor of which was four feet below the level of the floor of the vinery. As the apparatus was a good one, and the plant-house not very large, and being, besides, in a tolerably well sheltered corner, the proprietor very wisely thought he might have plenty of heat for his plants during winter, and have some from the apparatus to warm the aforesaid offices besides: with this view, the gentleman had spared no expense in procuring the apparatus, and having it erected in the best possible manner, his chief object being to have the whole warmed with as little trouble in the subsequent working of the apparatus as possible, as he had none but females to attend to it, except when he attended to it himself. The apparatus was accordingly erected in the following manner.

The boiler and furnace, as I have said, was situated in a corner, formed by the back wall of the grapery, and the end wall of the said offices, the ashpit floor being level with the floor of the latter. The flow pipe was led from the top of the boiler with a perpendicular rise of one foot, and on this level was carried across the end of the house, then along the front, and across the other end, thence through the back wall down to the floor of the cellar and offices, then carried along the floor till it reached the fire place, and rose perpendicularly to the boiler.

This apparatus had been erected two years previous to my seeing it, but no consumption of fuel and no kind of management could make it warm either the plant-house or the cellars. After a strong fire had been kept burning for a con-

siderable time, a little heat was generated into the pipe in the former place, but the pipe in the cellar was as cold when the fire was burning as when no fire was kept on. At the time of my visit, a common stove had been employed to warm the cellars, and as for the plant-house or vinery, the proprietor said, it might go to the deuce! And assuredly it did so, for there it was, the very embodiment of desolation and neglect, a few things that had once been plants, and litter strewed about that had once been vine leaves, were the only visible evidence of what it was intended for. The fact is, after much expense, the gentleman had met with nothing but disappointment, and as a natural consequence he had summarily abandoned a pursuit, which had been productive of neither profit nor pleasure.

Let us now look at the cause, and, having done so, the remedy is clear. The pipe, in descending from the vinery to the cellars, had a perpendicular fall of five feet six inches, and from thence again to the boiler, a perpendicular rise of three feet three inches. Now, one single glance at this erection would satisfy any one, who had the smallest knowledge of the principles already explained, that it could not work: that there would be no circulation, and circulation being the grand desideratum, it is clear that, without it, the apparatus is useless.

Here the two forces which should antagonize each other, were too unequally matched. The weight of water in the lower pipe was nearly double that of the upper, and when heat was applied to the boiler the difference would increase, so that the warming of the water in the upper pipe would only tend to lessen the power of circulation. The warming of the upper pipe arises from the ascension of the heated particles through the column of water above the boiler, to the highest point of the said column, and even if the pipes be lying on a dead level, as in the case under consideration, the heated particles will gradually find their way along the water in the pipe by convection,—but very slowly,—till they reach the point where the pipe descends,—when any motion in the water ceases to be perceptible, although it may be

slightly warmed by the conduction of heat by the metal of the pipe.

The column of water at the extreme end of the pipes must always have a preponderance over the column next to the boiler. And this preponderance must increase, as the pipes are reduced below the level of the boiler, for although the column *above* the boiler be reduced in weight by the application of heat, this decrease is not sufficient to counteract the retrograde motion caused by the superior weight of the column *below* the boiler, and, therefore, until the weight of the latter column be overcome by the weight of the opposite column, no circulation can take place.

Two remedies, therefore, presented themselves in the case in question. One, by increasing the weight of the column of water opposite to the boiler,—another, by reducing the resistance of the column below the boiler. This may be effected in three ways,—by raising the *upper* pipe to a higher level! By raising the *lower* pipe to a higher level! Or by reducing the boiler to a lower level. By raising the upper pipe, additional power is given to the upper column. By raising the lower pipe, the weight of the resisting column is reduced, and by lowering the boiler, both of these ends is effected, as additional force is given to the flowing column of water, and a proportionate force taken from the resisting column. And the water in the lower pipe, which before remained motionless, is pressed forward into the boiler, by the superior weight of the water above it.

The last of these remedies was the one which we adopted in the case in question, as being the most practical, and was done at very little cost; the boiler and furnace were sunk twenty-two inches lower than they were before: the balance of power was thus given to the upper column. The apparatus now works perfectly satisfactory, and the proprietor, who is an acute observer, is surprised that he did not see the error, that caused the impediment to its circulation.

I have already occupied so much space with this paper, that I must defer the other illustration until my next.

(*To be continued.*)

ART. III. *Notes on some of the new or recently introduced varieties of Fruits, which have been exhibited the past year.*

By the HON. J. S. CABOT, Chairman of the Fruit Committee of the Massachusetts Horticultural Society.

So many persons among us are engaged in the raising of fruit, and so much interest is manifested respecting the character of the new varieties, that, previous to the commencement of a new season, such statements as circumstances seem to warrant concerning the qualities of these varieties, that during the past season have been produced for the first or second time, may, perhaps, be considered not inappropriate,—and although to the initiated they should be but as “a thrice-told tale,” yet in reference to beginners, such remarks as a farther experience may appear to justify respecting some of the varieties that, already somewhat known, are yet but of recent origin or introduction, may be deemed not entirely out of place. To subserve these purposes is the design of the following communication.

It should perhaps be stated at the commencement, that specimens of fruit, particularly pears and apples, from a tree only in its first or second year of bearing, may be by no means true criteria of the qualities of such variety. If such specimens are high flavored and good, they may indicate strongly that the variety is valuable,—but if poor, they by no means prove that it may not in subsequent years, when the trees have arrived at greater maturity, become desirable. This perhaps is more especially true of those varieties that have, when at perfection, much sharpness or acidity. So too with some varieties, in order to produce their fruit in all the perfection of which the variety is capable,—some particular soil, exposure, or mode of cultivation may be required for the tree,—and with others, some particular process may be necessary to assist the ripening of the fruit, and from all this it follows, that no very conclusive opinion should be formed, and that no very accurate judgment can be expressed, respecting many varieties from trees, in only their first or second year of bearing.

The past year could not be deemed one propitious for fruit ; there was probably too much rain and too little heat, and to these circumstances has generally been attributed the fact that fruit was deficient in flavor. During the past season some new fruits have been produced for the first time, and additional opportunity has been afforded for testing others of recent origin or introduction that had before fruited, and of such, taking them for the most part in the order of their season of ripening, it is intended now to make mention.

STRAWBERRIES.—A new seedling strawberry from the President of the Horticultural Society, Mr. Walker. This strawberry was raised by Mr. Walker, from seed in his garden in Roxbury ;—it is a berry of large size, handsome, of a regular conical shape, dark red color and high rich flavor,—the plants grow very vigorous and strong, and are hardy. It is a staminate variety, and, for such, bears well, and promises, if any staminate variety is, to be worthy of general cultivation.

A strawberry called Gen. Jacquemont, was exhibited at the rooms of the Horticultural Society, that, so far as flavor only is considered, seemed to be a desirable variety; but as no information respecting it is possessed, except what could be obtained from an examination of a few specimens, no expression of opinion as to its merits would be justifiable.

Jenney's Seedling strawberry does not appear to be so generally cultivated as it deserves,—it is a good bearer, very hardy, and when perfectly ripe, of a fine flavor, losing that acidity which has rendered it with many objectionable.

Hovey's Seedling strawberry continues to maintain its claims to superiority, as the best of the large fruited varieties, taking all circumstances into consideration, for general cultivation, and thus far has not, either in public estimation or excellence, been superseded by any new variety.

During the past few years, many new varieties of strawberries have been produced from seed, but a few only of such have given promise, from a combination of good qualities, of becoming established sorts. Among such may be mentioned three varieties, raised by Mr. Richardson, of Cambridge, and named by him Richardson's Early, Richardson's

Late, and Cambridge. Under the care and cultivation of Mr. Richardson, whose soil seems peculiarly suited to this plant, all the three varieties grew vigorously and bore abundantly. The distinctive excellencies claimed for the different varieties, were, that Richardson's Early was an earlier and larger fruit than the Early Virginia, and being of a darker color and more regular form, handsomer than the fruit of that variety,—that the Late was fine in flavor, most profuse in bearing, and, ripening late, somewhat prolonged the season of the strawberry,—while for the Cambridge it was contended that its berries were larger than those of any variety in cultivation. Specimens of the different varieties exhibited seemed to support some of the claims thus made,—but as the plants of these varieties were sent out three years since, and they must probably have been subjected to the test of different soils and mode of culture, from some circumstances unexplained, no opportunity has been afforded, by an exhibition of specimens, to arrive at any satisfactory condition respecting their merit.

BLACKBERRIES.—The cultivated blackberry, so called, to distinguish it from the common high bush blackberry, is a very fine fruit, far superior to the common variety. It was originally found growing wild, in Dorchester, and from thence it was transplanted, and having been propagated is cultivated in several gardens. As in some situations it is occasionally killed down in winter, and as its very strong, stiff, thorny canes almost forbid any attempts at protection by laying down, &c., it may be questioned whether its culture will prove profitable for the market; but no one can see its beautiful fruit, of extra large size, or taste their delicious flavor, without desiring its possession. It is distinguished from the common high bush blackberry by the size of the bush and the fruit,—the canes, too, are fluted, growing to the height of eight or ten feet in a season, and of a proportionate size: it requires a rich moist soil, when it bears abundantly.

RASPBERRIES.—Knevet's Giant raspberry has been grown by a few amateurs and cultivators for some years, but its merits do not seem generally known or properly appreciated.

The fruit is of fine flavor, and large size,—the canes are hardy,—it is a good bearer, and the fruit bears carriage well,—preferable particularly in this last respect as well as in others to the Fastolf, whose fruit adheres so closely that it is impossible to separate it from the stem, without bruising.

A few years since a new Yellow Raspberry was introduced, that at first promised to supply the place of what had been considered a desideratum, a white or yellow raspberry of good quality,—the Antwerp, though for flavor a standard, being so tender and so poor a bearer as to have become like its congener the Red Antwerp, an outcast. But a short trial proved that the new introduction was worthless, and it has been discarded, leaving a white or yellow raspberry, worthy of cultivation, yet to be supplied.

GOOSEBERRIES.—Houghton's Seedling gooseberry, though not new, continues to be probably the best gooseberry for general cultivation that we possess,—the berries, though small, are sweet and luscious, and, what is a great recommendation, not subject to mildew or blight. Our climate does not seem suited to the gooseberry, neither, though highly esteemed in England, is it a favorite fruit. The lover of them, who wishes a few bushes for fruit for his own use, will probably find no variety better suited to his purposes than the Houghton Seedling.

CHERRIES.—Early Purple Guigne cherry, one of the earliest if not the earliest cherry,—handsome in appearance and rich in flavor, earlier and larger than the May Bigarreau, though scarcely known, is worthy of general cultivation.

The Belle d'Orleans, another early cherry, of a light red or amber color, with flesh tender and of good flavor, ripened the last season, and, so far as an opinion can be formed from trying a few specimens, seems to be a desirable variety.

A Seedling cherry, raised by Messrs. Hovey, fruited the past year, and promises to be worthy of preservation,—it is a Bigarreau, of large size, and of a light red or amber color.

Walsh's Seedling Cherries—These are three in number, ripening successively at intervals of about ten days, and are,

so far as known, the best seedling cherries yet produced in this vicinity, equalling, if not surpassing in quality, the choicest kinds of European origin. These cherries bear a strong resemblance to each other, are of large size, of a very dark or black color, and of a very rich sweet flavor, are said to be prolific, and the fruit not apt to rot on the tree, from wet or other causes. They are presumed to have originated from the fruit of a tree brought from the south of France, many years since, that has not yet been identified with any known variety. Until the past season, when buds of them were distributed by him, these cherries have been retained by Mr. Walsh in his own possession, and the only opportunities of forming an opinion respecting them, have been afforded by the examination of specimens presented by him. Should they, under general culture, and in different soils and situations, continue to preserve their present claims to superiority, they will, it is believed, be considered among the very best cherries grown.

CURRANTS.—Gondouin currants, so called it is believed from a town in France, where it was originated, fruited the past season for the first time; the berries are of good size, red color, and, from being rather later than the Red Dutch and so prolonging the season of this fruit, may prove valuable. The currants seem to have but little disposition to sport into varieties, seedlings generally bearing so strong a resemblance to, or showing so little superiority over, the parent as to be unworthy of preservation as distinct sorts. Occasionally a new variety, with some distinctive features, is produced. This was the case a few years since with May's Victoria, that was represented as a great improvement on the common, well known sort,—but after a trial of three or four years, it may be questioned, whether, under common culture, it is much, if any superior, to the old Red Dutch. The strings or bunches of fruit are longer than those of the common varieties, containing sometimes twenty-six or twenty-eight berries, and under favorable circumstances the berries are somewhat larger; but not larger than those of the common varieties under equally high culture and as favorable circum-

stances,—while in flavor it shows no superiority. As however it makes a variety where so little variety exists, it becomes desirable.

GRAPES.—Josling's St. Albans Grape, whose claims to superiority as well as to being a new distinct variety were sustained by expressed opinions in its favor of the highest authority,² has now been fruited for the past two years. It is a very rich high flavored grape, bearing so striking a resemblance to the Chasselas Musqué, as to give rise to the belief that it would prove identical with that variety. This, however, has not been as yet decided; it cracks and rots worse than the Chasselas Musqué, an objection to which that variety is so subject, and has not matured its fruit so soon by fourteen days, going to prove, if this be not owing to some accidental peculiarity of soil or situation, that the two varieties are different. Mr. Allen is of opinion that the Josling's St. Albans, if not the Chasselas Musqué, may prove to be the Raisin de Calabré, a variety similar to the Chasselas, but requiring fifteen to thirty days longer to ripen its fruit.

The Austrian Muscat is a new grape, of a slight amber or pinkish color, and of very fine flavor.

Mr. Allen, who has in his collection the greatest number of varieties of the grape probably in the country, embracing almost all the known varieties of any repute, for the purpose of ascertaining, by his own observation, the qualities of the several varieties, and thus enabling himself to arrive at just conclusions with respect to their merits, has, during the past season, fruited several new grapes, and the remarks on such, that follow, are mainly the results of his experience.

White Bual, a new white grape, with roundish berries, of medium size, bunch very large, with large loose shoulders, very good, and promises to be an acquisition. Its season of ripening is after the Chasselas.

Facure, a small round white grape, inferior in quality to the Chasselas de Fontainbleau.

Fromental, a dark grape, strongly resembling the Black Hanburgh.

Florentine, is a black grape, with round berries, of medium

size,—it is of the cluster family, resembling the early Black July, and ripening about the same time with that variety.

Falanchina, is a small, round white grape, inferior in quality to the Chasselas de Fontainbleau.

De Rhineland, is another new white grape, with small round berries, bearing a strong resemblance to the Chasselas de Fontainbleau, and that has the reputation of being hardy in open culture. Opportunity of ascertaining the truth of this last named quality, by actual experiment, has not yet been afforded.

White Rissling, a medium sized round white grape, of the cluster variety, hardy, good, but inferior to the Chasselas de Fontainbleau.

Deccan Superb, a very handsome, oval white grape, of large size,—in quality very unequal,—as some of the berries will be sweet and of rich flavor, while others will be insipid.

Prince Albert, a black grape, with very large bunches and round berries, rather under a medium size, but of good flavor: apparently it is a small bearer; at all events it does not bear young.

Xeres, the Sherry wine grape, has white berries, of medium size, very sweet, but not equal in quality to the Chasselas varieties.

Poiteau Noir and Bishop, are both very late varieties, requiring six months to mature their fruit,—and being late, are on that account valuable,—both bunches and berries are very large,—the latter of a black color.

St. Peter of Aliers has rather large berries, and resembles the Black July.

Chaptal, has oval berries, of a white color, with a muscat flavor,—sets its fruit badly.

Calabrian, is a small, white, round, sweet-water grape, of the cluster family, very inferior to the Chasselas de Fontainbleau.

Callaiba, represented to be black, turns out to be a small, oval white grape, unworthy of a place in the vinery.

Most of the above named grapes are of recent introduction, having fruited the past season for the first or second time, and several of them are of very recent origin,—that for

the most part, as appears by the remarks affixed to them, will probably prove unworthy of general cultivation.

Mr. Allen has, the past season, fruited three seedling varieties of the grape, raised by him. One of them is from seed of the Verdelho, impregnated by the Grizzly, Frontignan; it resembles its parents,—has a high rich musque flavor, and ripens early. Should its fruit by age improve in size, it will be an acquisition. Another of these seedlings is a very great bearer, and closely resembles the Black Hamburgh. The third is a small late white grape, probably unworthy of cultivation.

PLUMS.—The De Montfort, a purple plum of medium size, and purple color, fruited for the first time the past season. The flavor of the only specimen seen was delicious, and it promises, so far as an opinion may be formed from a single specimen, and in one year only, in a species of fruit where so few really very good varieties exist, to be an acquisition.

The Reine Claude de Bavay plum has been fruited the past two seasons in this vicinity; it is a plum of medium size, round oval form, green color, sweet, but not high flavored; it is a late plum, keeping into October,—disposed to shrivel rather than to rot on the tree, and that promises also to be worthy of cultivation. The tree grows vigorously, but being as yet but young and small, its bearing properties are not ascertained. By some mistake the Washington was first sent out from England for this variety, but trees of the true sort were received from Orleans, and from such the specimens, to which these observations apply, were produced. By some means the term “monstreuse” was in some instances applied to this variety, as constituting a portion of its distinctive appellation,—but this is an addition unauthorized either by the size of the fruit or its originator,—the true name being it is believed that above given.

PEARS.—Among pears of recent origin, that have fruited the past season for the first or second time, may be mentioned Groom’s Princess Royal,—a pear of medium size, bergamotte shape, dark green color, turning yellow when ripe,

melting, juicy, sweet, and pleasant; ripening in January. The trees seen do not grow vigorously.

Nouveau Poiteau, a new Flemish pear, large, or above a medium size, with a pyriform shape, somewhat flattened, skin rather rough, of a dark green color, with some brown spots or blotches; flesh greenish white, buttery, melting, sweet; whose season is October and November. The only specimens seen, were unequal in quality; while some were of a somewhat peculiar, but delicious flavor, bearing some resemblance to that of a citron melon, others were rather insipid. The trees grow very vigorously, and promise to bear early and abundantly.

Beurré Langelier is a new pear, with a reputation for great excellence, and that is of very good promise. It bore fruit the past season; a single specimen only having been produced the year previous. The fruit is of pyriform shape, above a medium size, and of very handsome appearance. The ground color of the skin is yellow when ripe, with a fine red in the sun; the flesh is fine grained, melting and juicy, of a pleasant flavor. The true season of this pear is January and February, though owing to accidental circumstances, some specimens this year ripened in November. The trees have a thick, handsome foliage, and are of very vigorous habit.

Doyenné Goubault, a pear recently originated at Angers, in France, has a yellow somewhat russetty skin, an eye not very prominent, and a short stem set in a rather shoal cavity, with a round, somewhat flattened form, and whose flesh is white and melting; fruited the past year. The specimens tasted, were deficient in flavor, but this may very probably be owing to the fact that they were unintentionally ripened somewhat prematurely by having been placed in a drawer near the pipe of a furnace.

Fondante de Malines is a tolerably good fruit, but one whose European reputation was not sustained by the specimens examined; such being, though melting and pleasant, rather deficient in flavor, owing perhaps to the same circumstance as that referred to in the case of the Doyenné Gou-

bault, both having been similarly treated, and therefore, in both instances, being a less correct criterion of quality, than specimens of the first year usually are.

Inconnue Van Mons, though not high flavored or of first-rate excellence, is a good pear, and, ripening in January, valuable. It is in color green, of a pyriform shape, medium size, not unlike that of the Dix,—melting and juicy.

Notaire Minot is a new pear, that fruited for the first time the past year. It is a very handsome fruit, regular in form, of a pyriform shape, green color, with a very bright, deep red in the sun. The specimens produced were but indifferent in quality, acid, and somewhat astringent. The tree which produced them grew in a stiff clay soil, that perhaps may be uncongenial to the variety, besides that the remarks previously made herein, with respect to specimens of the first year of bearing, also are applicable. These particular specimens were gathered before they were perfectly ripe, a circumstance that may have affected the quality unfavorably. Although present indications are not encouraging, further trial may prove it worthy of cultivation.

Lawrence is a pear that was first brought to the notice of cultivators seven years since, by specimens brought from New York. It has now fruited for three years, in succession, and promises to be worthy of cultivation here also. It is a melting, juicy, sweet fruit, ripening in November and December, at a time when there is a scarcity of good pears, and is on that account, as well as for its own merits, desirable. Its cultivation has recently been much extended on Long Island, for the New York market, and it is there held in high estimation.

Josephine de Malines is a new pear, about which very favorable expectations were excited, in consequence of the reports of its quality that preceded its introduction from Europe. The specimens produced the past season, as well as those of the year previous, do not, however, justify hopes of the realization of these expectations; but, as the specimens of the last season examined were produced under very unfavorable circumstances, such as would hardly warrant any

attempts at description or expression of opinion as to quality, and those of the previous year were gathered before ripe, a statement of the fact that it has fruited, is, on the present occasion, thought sufficient, and the deferring any further observations concerning it deemed advisable. This also applies to several other varieties of pears of recent introduction, that have for the first time fruited the past year, and of which, for the reason above stated, or because a very hasty and imperfect examination, of which no record was kept, was bestowed upon them, and an account must be delayed until another season has offered another opportunity of judging of their quality.

Among the pears of native origin, that give promise of being worthy of general cultivation, and of becoming established varieties, may be mentioned the Seedlings of Mr. Francis Dana, of Roxbury. One of these fruited three years since,—the tree then but five years from the seed,—and is a fruit above a medium size, of very pleasant flavor, ripening in November; an apparent tendency to rot at the core, if kept at all too long, will, it is feared, unless this was accidental, detract from its value. Another of these pears is an early fruit, ripening in September; for the examination of which, only one opportunity has been afforded. The specimens tasted possessed a good deal of character, were vinous, high flavored, and juicy. With regard to a third variety, no personal knowledge is possessed,—but reports from good judges are, that it is of great merit. Considerable attention has lately been given by cultivators to the raising of new varieties of pears from seed, that it is hoped will result in the providing of some better suited to our soil and climate, than are those of foreign origin, yet equalling or surpassing them in quality. True, we have already varieties in almost countless profusion, but very many of them, on trial, are found to be worthless, either because our climate or soil is unsuited to them, or that a desire for gain has induced a willingness to pander to the rage for novelties, by furnishing, under imposing names, worthless kinds; and though no addition to the number of varieties is desirable, the production of new

sorts from seed may furnish those that will be far in advance of such as are now cultivated, and on that account should be encouraged.

APPLES.—The Northern Spy apple was, for the first time in this vicinity, fruited by Dr. Wight, of Dedham, last season. Specimens of this fruit, sent from New York, by their beauty, size, excellence of quality, and capacity for being kept late in the season, created a very general desire for its possession. The trees when obtained grew vigorously, ripened their wood well, seemed hardy, and appeared to authorize the belief that the variety would succeed in this vicinity as well as in that from which it was introduced. The specimens produced do not, however, encourage such belief, being small and in every respect indifferent. It is of course too early, the first year of bearing, to decide that the variety will not answer or succeed; still, as the specimens produced were from grafts set in a thrifty, vigorous tree of mature age, and, though growing in grass ground, favorably situated, there is strong reason to fear that disappointment will be experienced, and affords ground, though not to reject it at once, to at least induce caution with respect to any very extensive cultivation of it. Perhaps upon a stiff soil, with very high culture, it would be more likely to succeed.

Manomet Sweeting is not a very new apple, yet one of recent introduction, and whose cultivation is still confined to Plymouth, the place of its origin, where it is highly esteemed for its qualities. An examination of specimens for several successive years, induces the opinion that the estimation in which it is held by those familiar with the variety, as one of the very best sweet apples of the season, is well founded. It is an early apple, ripening the latter part of August, keeping for some weeks, of a medium or above a medium size, red color, and rich sweet flavor. The tree grows strong and vigorously.

Cogswell is another apple that, though not new, is comparatively little known. It was, it is believed, procured some twenty years or more since, by Mr. Hyde, of Newton, from the interior or western part of the State, and by him somewhat disseminated, though its cultivation at this time is

neither general nor extensive. It is a very handsome apple, of large size; its color a yellow ground, nearly covered with blotches and stripes of a scarlet red; the flesh is tender, of a very rich flavor, and it is in eating from December to February. The tree is handsome, of a vigorous habit, bearing its fruit on the branches as it were on strings.

The White Seek-no-further is one of the very best apples grown,—in quality equal to, and not unlike, the Newtown Pippin, while it is very much more tender; upon trial, however, it does not seem suited to our climate. The fruit, which in situations congenial to it is fair, being here, though of good size, disfigured with black blotches or spots; it has a peculiarity of bearing its fruit only on the ends of its branches.

In addition to the foregoing, opportunity has been afforded during the past year, for testing other new or unknown varieties of the apple; but as such were not distinguished by name, or identified with any known variety, any general descriptions, where no striking peculiarity or superior merit existed, would be of little or no value; and if such was not the case, a want of information with regard to the habit and character of the tree producing them, as well as of their adaptation to, or unsuitableness for, general cultivation, would forbid more than a mere enumeration of their qualities; and therefore, further allusion to them seems uncalled for.

Salem, January 15th, 1851.

ART. IV. *Descriptions and Engravings of Select Varieties of Cherries.* By the EDITOR.

13. DAVENPORT. Prince's *Pom. Manual*, Vol. II, p. 154.

Davenport's Early. *Fruit and Fruit Trees of America.*

Davenport's Early Black. Kenrick's *American Orchardist.*

The Davenport (*fig. 5*) is one of the best of the early

cherries which succeed the Early Purple Guigne and the May Bigarreau. It ripens a little before the May Duke. It is of good size, of a rich flavor, and the tree is not only exceedingly vigorous, but forms a fine shaped head, is very hardy, and one of the most productive varieties cultivated.

The Davenport was raised in Dorchester by Mr. Davenport, a fruit cultivator and nurseryman, whose name it bears. Mr. Prince first fully described it in his *Pom. Manual*, and he states on the authority of the originator, that it ripened two weeks before the Black Heart, from which it probably originated. We esteem it better than that old sort, and the vigor of the tree and its other excellent qualities entitle it to general cultivation.

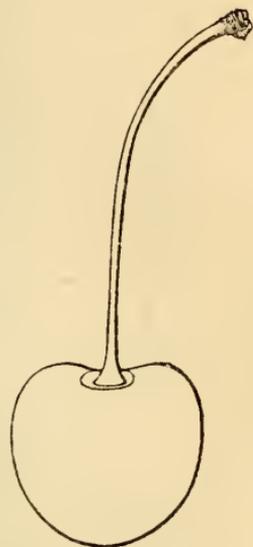


Fig. 5. Davenport Cherry.

Size, medium, about three quarters of an inch long, and three quarters of an inch in diameter: *Form*, roundish heart shaped, somewhat flattened towards the point, with a slight suture on one side: *Skin*, dark red, becoming purplish red when fully ripe, slightly mottled with pale red: *Stem*, medium length, about one and a half inches long, moderately stout, and inserted in a rather deep cavity: *Flesh*, deep red, tender, juicy, sweet and excellent: *Stone*, medium size, roundish ovate. Ripe from the middle to the end of June.

14. MOTTLED BIGARREAU. *Mag. of Hort.*, Vol. VIII, p. 283.

Manning's Mottled. *Fruits and Fruit Trees of America.*

Mr. Manning briefly described this fine cherry (*fig. 6*.) in our volume for 1842, along with forty-three other varieties. It is one of several seedlings which he produced in the Pomological Garden, and we believe the best of them. It is of good size, of beautiful appearance, with a pale amber skin, delicately mottled with red.

Though called by Mr. Manning a Bigarreau, in the common understanding of that term, which includes hard fleshed cherries, it does not belong in that class. It is so far hybridized with the tender cherries as to have a flesh between tender and firm, and as we do not admit of the arbitrary distinction based merely on the firmness of the flesh, but follow the classification of Mr. R. Thompson in the *Hort. Transactions*, (Vol. VIII, p. 248,) founded on the character of the leaves, the name is of no consequence whatever, and an alteration only tends to confusion.

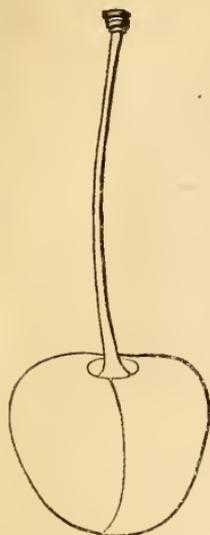


Fig. 6. *Mottled Bigarreau.*

The Mottled Bigarreau is a free and vigorous growing tree, with a regular spreading head, and an abundant bearer.

Size, medium, about seven-eighths of an inch long, and little more than the same in diameter: *Form*, obtuse heart shaped, flattened, with a shallow suture running all round, and an indented point: *Skin*, yellowish amber, covered with numerous large yellow mottlings, rayed with dark red, pale red on the sunny side: *Stem*, medium length, about one and a half inches long, moderately stout, and inserted in a rather shallow cavity: *Flesh*, pale amber, half tender, juicy, melting, rich, sweet and excellent: *Stone*, rather large, roundish ovate. Ripe from the end of June to the middle of July.

15. MANNING'S LATE BLACK. *Mag. of Horticulture*, Vol. VIII, p. 282.

This variety (*fig. 7.*) is another of the late Mr. Manning's seedlings, which he first described in our Magazine, in the volume above alluded to. It was produced from the Black Heart, and somewhat resembles that old variety in appearance, but is nearly a month later, ripening the middle of July, about the same time as the Downer.

Last year, a tree which we budded from scions received from Mr. Manning, produced a fine crop, and as a late cherry we consider a very good addition to a large collection. Mr. Manning describes it as "large," but probably owing to the heavy crop, our fruit was not quite as large as usual. If its size was equal to the Tartarian, it would rank among the most valuable sorts in a collection. The tree is vigorous, with a spreading head.

Size, medium, about three quarters of an inch long, and seven eighths of an inch in diameter: *Form*, roundish heart-shaped, narrowing to the point, and slightly compressed: *Skin*, deep, shining purplish red: *Stem*, medium length, about one and a half inches long, slender, and inserted in a shallow cavity: *Flesh*, dark purplish red, half tender, juicy, sweet and good: *Stone*, roundish. Ripe about the middle of July.

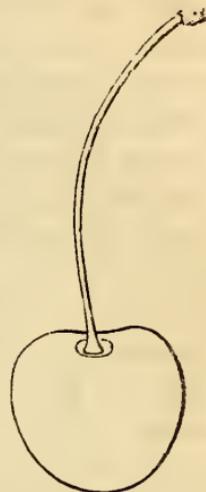


Fig. 7. Manning's Late Black Cherry.

ART. V. *On the Rhododendron, as an Ornamental Shrub.*
By R. B. L.

IN the formation of gardens and shrubberies, one of the greatest difficulties I have met with, is in obtaining the rich masses of broad leaved evergreens which characterize the pleasure grounds of northern Europe, and give the peculiarly pleasing and picturesque character to the shrubberies of England. When, in other days, I was wont to labor among those beautiful masses of Rhododendrons, Kalmias, Andromedas, Azaleas, &c., called *par excellence* American gardens, I thought, in common with thousands of English gardeners, how splendid must be the gardens of America where these plants were indigenous. You tourists of taste and learning take a trip across the channel; you visit the gardens of England, and

find yourselves, to your own amazement, walking in the midst of grounds, formed exclusively of your own native plants, which, it would appear, they know better what to do with than you do yourselves. In hundreds of places that I could name, there are avenues and carriage drives, many miles in length, bordered and overhung with rhododendrons; and in others, numerous acres covered with American plants. Rocky dells and old rabbit warrens are planted full of them, and which, without care or keeping, form those sylvan retreats that constitute the chiefest charm of an English homestead. If you want to see your native rhododendrons in their natural grandeur, do not look for it in the trim formal symmetry of a flower garden clump, or even in the nursery acres of Knap Hill, but go among the mountains of the north. Your American tourists seem to have a hygrometrical horror of crossing the Tweed, and some of you seem to have the impression *that it rains there every day.*

But to my subject; go among the Grampians, among the gorges of the mountains at Dunkeld, and on the base of Ben Lawres, at Taymouth. On the margins of the lakes, and among the recesses of the rocks in the Scottish Highlands, there your unrivalled native rhododendrons and kalmias are prized and planted in thousands, mingling their masses of dark green foliage with the native foliage of the forests, as if nature, and not art, had planted them there. Visit the banks of the Forth, at Melville House, and the woods of Tynningham in East Lothian, and see them in the plenitude of their glory. And what group of plants in the vegetable kingdom is capable of forming so magnificent a spectacle? No American could look upon these rhododendron plantations when in bloom, and not feel proud of the evergreens of his country, when he reflected that they were natives of its soil.

Why is it, that proprietors here will ransack half the globe for delicate novelties that will not thrive without protection, and let others take advantage of what they have at home? Why is it, that your pleasure grounds, however well and judiciously planted, have such a comfortless and desolate ap-

pearance for one half the year, with nothing to relieve the cold sterile monotony of bare and leafless branches, except perhaps a few balsam firs, or white pines, which seem as if they were doing duty for evergreens, till something better were planted? Just look at the plantations, usually called "*Shrubberies*," around some of the spruce little villas in the neighborhood of Boston; a bleak unplanted field on one side, and a swamp on the other; simply a barn, and a post-and-rail fence, with here and there a few fir trees, trembling at their own solitude and stunted proportions, adding only to the indescribable cheerlessness of the place, and freezing one's sensibilities to look at them. You may censure my severity, but you cannot deny that this is the character of too many American gardens. While the broad shining leaves of the rose-bay reflect the sun's rays on your mountain sides, and gorgeous masses of the kalmia glisten in your valleys like mirrors of glass, there they stand, braving the summer's heat and winter's cold, wasting their beauty in the wilds of your forests, while they remain total strangers to your leafless gardens, though they form the glory of the grounds of other countries.

We are daily hearing of the gorgeousness of English pleasure grounds; but take away the foreign trees and shrubs with which they are planted, leaving them nothing but native plants, and what would they have to form shrubberies? No evergreens would be left them but the native pine, which rarely finds a place in the pleasure ground; but they adorn their plantations with the hardy evergreens of other countries, and from America perhaps, more than from any other, more especially in the northern portions of the British Island, where the Portugal laurel, the sweet bay, the common bay, the Lauristinus, and other evergreens from the south of Europe are frequently destroyed by the frost in winter. The hardy rhododendrons however are never destroyed, even in the sterile gorges of Caithness, or on the cold bleak hills of Sutherland, whose bases are washed by the waves of the Northern Ocean.

I believe the principal reason that rhododendrons are not

planted as ornamental shrubs in this country is, because they will not stand the severity of winter. This may be accounted for from the fact, that those which have been planted with that view, have either been delicate hybrid varieties, raised under glass, or plants imported from nurseries in England. Now, rhododendrons taken from the London nurseries, and planted among the bleak hills of Badenoch, would be in a worse condition than if they were planted on the hills of New England. They would not survive the first winter they were set out; it has been tried over and over again. I happened to live for some years at a place situated on the southern slope of the range of hills that rises from the River Tay, and not a hundred miles north from Edinburgh; rhododendrons and similar plants were frequently sent from the London nurseries, and though planted with care, they seldom did much good, except they were kept under glass, while plants raised on the place, or taken from the nurseries in the neighborhood, thrived luxuriantly. The masses of rhododendrons at the country seats of gentlemen in Scotland, are generally planted from seeds sown on the place, frequently self sown, as the young plants spring up in great numbers among the old ones.

The removal, even of hardy trees from one part of the country to another, whose climate and soil may be somewhat different, produces a very sensible effect upon their growth; sometimes they will not grow at all, and the disappointment resulting from this fact, is annually experienced by many planters in this country. Evergreens in general are more affected by this change than deciduous trees, and rhododendrons, kalmias, &c. are more susceptible than any other hardy evergreens with which I am acquainted, and the consequence of this susceptibility has induced many to abandon the idea of planting them altogether.

To me, it appears evident that rhododendrons can never become useful as hardy ornamental shrubs, by importing them from Europe, or by raising delicate varieties under glass. Undoubtedly the best way is to procure seeds of the hardy native kinds, as the *máximum*, and *cátawbiense*. Sow

the seeds in pots or boxes, and protect them with some light covering for the first year or two, as they are peculiarly liable to be thrown out by the frost. Their small hair-like roots take very little hold of the ground, and render them liable to be thrown out, even when of a considerable size.

As a flowering shrub, there are few plants,—certainly no hardy species,—that can compare with the rhododendron; but as a greenhouse plant, it is generally an unsightly subject, and unworthy of the room it occupies in the house, except during the few weeks it is in bloom. It has nothing in its habit of growth to recommend it to the greenhouse. Its hard uncompliant branches almost defy the skill of the cultivator to bring it into anything like shape. It is either too low to be placed in the background of the arrangement, or too lanky to be placed in front. You may now and then see a handsome plant of the slender growing kinds, but for every one of such, you will see five hundred lean, lanky, bare, knotty skeletons, with a few solitary leaves at the extremity of the branches, the very tokens of desolation, stuck in some corner where it will not be seen—or only showing its few remaining leaves—as if it were ashamed of its own nakedness.

The delicate rhododendrons hold a rather equivocal kind of place among greenhouse plants. They are neither handsome enough, nor tender enough to be fit company for the camellias, and their somewhat coarse and uncouth aspect when out of bloom, almost forbids their association with other exotics. Some enterprising cultivators therefore, who have long been impressed with these views, have resolved to try what can be done in the way of acclimating them as hardy ornamental shrubs for the open ground, the only way in which these plants can be rendered most valuable in our gardens.

Among the most successful instances of this kind which have come under my observation, one may be seen at the residence of Mrs. Pratt, Watertown, where, some years ago, Mr. McLennan, the excellent gardener of that place, planted a large quantity of hybrid rhododendrons on a well prepared

border, sheltered on the west by a hedge. Some of the plants have made remarkable growths, and all are in good health and full of blossom buds. Mr. McLennan protects them with a slight covering of fir branches, during winter, more, however, to keep the sun from them than the frost. And when we consider that these are chiefly delicate hybrids, raised under glass, it will be freely allowed that Mr. McLennan has done something, not only worthy of the thanks, but worthy of the imitation, of all lovers of ornamental plants. I am aware that this has been done in various parts of the states. But this is the most successful instance with which I am acquainted, so far north as the city of Boston.

It must be considered, however, that this has been done by one of the most skilful gardeners in the country. Skill and experience are successful in many things, that would prove complete failures without it, and therefore, before the rhododendrons can become general as an ornamental shrub in our gardens, we must have them to stand as the Norway spruce stands, without the benefit of covering, or the skill of the experienced gardener. I might here make some remarks on covering plants, but as I have already occupied too much of your columns with this paper, I will reserve that subject till another time.

No person can be blind to the desirability of introducing foliated evergreens into our shrubberies; and no plants are better suited to the purpose than the native kalmias and rhododendrons. Suitable ground can easily be made for them as it is done in England, and plants in abundance can be procured from their native habitats, or, what is better, seeds may be obtained from thence, and the plants raised where they are to remain, and I would seriously advise all those who are alive to the disconsolate cheerlessness of their shrubberies, between the fall of the leaves in autumn and the expanding of the foliage in spring, to set about thinking of a remedy without delay.

Boston, January, 1851.

Had we not so repeatedly called the attention of all lovers of beautiful plants to the superior merits of the rhododendrons, kalmias, &c., which are natives of our own clime, for all purposes of ornamental planting, we should now be tempted to embrace so fitting an opportunity to do so. But though a great deal must yet be written upon this subject before the true value of these plants can be made apparent to all, we do not deem it necessary to say more now on this point; the views of our correspondent are correct, and fitly expressed, and we trust they may cause that due reflection which we are sure will result in a change of opinion regarding the real beauty of our own native evergreen shrubs; for all the fine hardy kinds are only varieties produced by cross impregnation from the common maximum, which grows abundantly in New England, and the catawbiense, which comes from the Middle States. Resisting the most intense cold, and forming, with their large glossy evergreen leaves, whole masses of foliage, they contribute, aside from their magnificent flowers, more to the ornamental effect of a pleasure ground or shrubbery, than all other sorts combined. We commend the above article to the attentive perusal of every reader, and shall endeavour to offer other articles in a future number in relation to our American plants, and the importance of giving more attention to their cultivation.—*Ed.*

ART. VI. *On the Culture of the Amaryllis.*

By NICHOLAS NOLAN.

MOST of the species of this beautiful family of plants, are natives of the Cape of Good Hope, China and South America. Some of them, as the *A. aúlica*, and the *A. balladóna*, are nearly hardy, while others require to be treated as exotics.

We will suppose the bulbs to have been procured in the beginning of January; pot them any time between that period and the beginning of April. They should not, however, be placed in a strong heat as is generally done, which has a

tendency to make them grow luxuriantly without pushing into bloom. I have seen a large collection of amaryllises, grown in a high temperature and well watered, produce strong leaves without blooming at all. In this case, the best way is to give them a sudden check, which makes them throw up their flower stalks, when water may be applied more freely.

The compost in which I have grown them very successfully, is a mixture of equal parts of leaf mould and loam, and a little sand; the pots chosen, should correspond to the size of the bulbs. In most cases, six or eight inch pots will answer the purpose, but if the bulbs are very strong, put them into pots of a larger size; in potting, do not place the bulbs too deep in the soil; one half at least ought to be above the surface of the mould; when potted, place them in a pit or cucumber frame, plunging the pots half-way to the rim; they ought to be grown rapidly and watered freely during their growth; on this, much of their success in flowering depends. Water them occasionally with soot water, quite clean, and be careful not to check their growth until the flower stem makes its appearance, unless they show no disposition to start, which will be in June and July. When the flowers begin to expand, take the plants into the greenhouse, and supply them freely with pure rain water. If they are allowed to get dry, the flowers will flag and they are done for the season.

Amaryllises are propagated by the side offsets or bulbs, and by seeds, to obtain new varieties. Growing them from seeds is a tedious business, as it requires some years to bring them into flower. To propagate them from bulbs in the spring, pinch of the offsets, and pot them in small pots; plunge them in heat with the others, and keep them moist. By the time the leaves turn yellow they will have formed good bulbs, which will flower the following season.

In potting the amaryllises they ought to be placed in the pots in which they are intended to flower. They should not be shifted often, or if possible, at all, after they show signs of forming a flower stalk; therefore pots of sufficient size should be chosen, as they require a good deal of nour-

ishment in their growing state. The half-hardy varieties should be planted in rich soil in the open ground, and be well sheltered during their growth if the weather is very cold and wet. Tie them to stakes to prevent them from being broken by the high winds, and take them up after the flower stalks and leaves are thoroughly decayed; put them on a shelf in a dry room, where they will not be subjected to severe frost. The first favorable opportunity should be taken, as soon as the spring opens, to plant all the half-hardy kinds in a warm sheltered place in the garden. On light rich soil, I have seen them do well by the side of a wall where they received the benefit of the radiated heat, as well as the protection afforded by it from cold winds.

A spot of this kind should, if possible, always be chosen for delicate bulbs; their greatest enemy is excessive moisture in the spring, before they have attained vigorous growth. But when once fairly started into growth, neither moisture nor the droughts of our seasons will in the least lessen their luxuriance or injure their bloom.

Chelsea, Mass., January, 1851.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

PEAR TREES AS ESPALIERS.—Whether should pears be planted as espaliers or as standards? This is a very important question, and one not sufficiently considered even by good gardeners. The French are more politic; where standards are planted they take measures to secure them against the effects of violent winds. Such fruits for example, as Duchesse d'Angouleme and Beuré Diel, have no chance on standards of maintaining their hold during a heavy gale, consequently, they get blown down at the very period, when of all others, it is most important for their perfect maturity, that they should remain upon the trees. Autumn gales are uncertain as to the period of their arrival, but we never escape them; and hence the necessity of guarding against them. How often do we not find pears condemned as gritty, tasteless, and sugarless, when the variety is not at fault at all, but when the evil lies in the treatment they have received. Such is most frequently the case with the larger kinds, which will hang on the trees very

well, when the branches are perfectly secured, but which are not able to sustain their position during high winds, when the boughs are at liberty to be blown about. On this account experience is decidedly against planting heavy pears as standards, unless the whole tree is firmly fastened, and numerous schemes have been suggested for this purpose. The French use a central stake of wood or iron the height of the tree; they then fasten strong wire to the top, bringing it out at the bottom, and securing it to the ground at five or six points, and at a similar distance from the bole of the tree, so as to cause it to exhibit the appearance of a cone. Wires are then fastened to the centre stake and brought out to the exterior lines of wire in a horizontal direction, as the branches may indicate. The latter are then firmly tied to these horizontal lines. It will be observed that the power of resistance is equal to the force of pressure, from whatever point the latter may come, and the numerous ligatures employed in fastening the branches in every part, protect the whole tree in the most perfect manner. I have also observed large and fine specimens of fruit secured individually. The French place more value upon pears than we usually do. Their pears are thinned with as much exactness as we employ in regard to our peaches, consequently their specimens are much finer, and the flavor is superior; but the latter is no doubt in some measure attributable to the climate. They do not permit their trees to grow into a thicket, consequently sun and air can penetrate every part, a matter worth the attention of gardeners who live in less sunny climes.—(*Gardeners' Chronicle*, p. 821, 1850.)

ART. II. *Domestic Notices.*

LIBERAL DONATION TO THE MASSACHUSETTS HORTICULTURAL SOCIETY.—MR. G. W. Smith of Boston, presented to the Society, through H. W. Dutton, the liberal sum of one hundred and fifty dollars; to be appropriated to the purchase of books for the library. The thanks of the Society were voted to Mr. Smith, and a committee appointed to report some appropriate card to distinguish the books purchased from Mr. Smith's fund, from those purchased by the Society.

ART. III. *Massachusetts Horticultural Society.*

Saturday, January 4, 1851.—The stated quarterly meeting of the Society was held to-day, the President in the chair.

The President, in opening the meeting, delivered the following appropriate address:—

Gentlemen: Laboring together, as many of us have done for nearly a quarter of a century, under, as we trust, the guidance of that all-wise Provi-

dence whose works have been our study and delight, we are again called to enter upon the respective duties assigned to us by the Society.

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

It gives me great pleasure, Gentlemen, to state that the purpose for which this Society was established has, so far, as it appears to me, accomplished all that its most sanguine friends expected; still there remains much to be done.

The future action of its members will be stimulated by the reminiscence of the past, and the recollection of the labors and donations of its founders and benefactors; these will cheer their path, and act as a talisman on their future aspirations, while the History of Mount Auburn will be a record, in all coming time, that the members of this Society, some of whom are now present, were the founders of that "Garden of Graves;" and that to its first President, General H. A. S. Dearborn, are the members of this Society and the public indebted for the beautiful and chaste arrangement of this—the last resting-place of so many of the great and the good.

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

The increasing taste for Horticultural pursuits requires prompt and corresponding action to enable us to keep pace with the times. The question with us now, is not *what can be done*, but rather *what shall be done first* to meet the demands of the community and the wants of the Society. An experimental Garden, enlarged and more extended annual exhibitions under tents, &c., are subjects full of interest, and may well occupy the attention, and hereafter require the deliberate consideration of the Society. But, gentlemen, a permanent TEMPLE of ample dimensions to meet all the wants of the Society and the wishes of the public, is the first thing that I would suggest for your consideration; let us obtain a suitable location, a HOME; for this purpose let us economize our resources, tax our time and our energies, and if needs be, our fortunes, for this desirable consummation of the wishes of our friends, and the founders of this Society; many of them saw only through the vista with the eye of hope; it is our duty and our privilege to carry out their designs, and to fill up the picture as it once presented itself to the vision of the Lowells, the Storys, the Lymans, the Brimmers, the

Courtises, the Bradlees, and the Princes. Without a Hall to exhibit, to advantage, all the specimens raised by horticultural efforts, we cannot fully accomplish our highest aim—the dissemination of a knowledge of and a love for Horticulture. Imbue the public with this, and the emulation that it will create between amateurs and the competition among cultivators for the market will be sufficient to fill, in a few years, the largest Hall we could desire to possess.

Having expressed my views thus frankly, on this subject, permit me to touch upon details by suggesting whether a Hall, in every way suited for Horticulture, might not be built and fitted up with reference to its soul-stirring kindred spirit Music, where the warbling voice and the “Bird Song” might be wafted, like the gentle zephyr, among the trees, the buds, the blossoms and the flowers, to ravish the ear, while the eye should be charmed by the gems of lovely spring, or the golden drops and purple hues of gorgeous autumn.

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

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

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

The address was referred to Messrs. C. M. Hovey, B. V. French, J. S. Cabot, Dr. E. Wight and H. W. Dutton, to report thereon.

Mr. Cabot, from the committee for establishing Premiums for 1851, reported the following list, which was adopted and ordered to be printed.

LIST OF PREMIUMS FOR 1851.

AMOUNT APPROPRIATED, TWENTY-TWO HUNDRED DOLLARS.

PROSPECTIVE PRIZES.

For objects to be originated subsequent to A. D. 1846, and which, *after a trial of five years*, shall be deemed equal, or superior, in quality and other characteristics, to any now extant.

For the best seedling Pear, the Society’s large Gold Medal, valued at	\$60 00
“ “ “ “ Apple, “ “ “ “	60 00

For the best seedling Hardy Grape, the Society's large Gold Medal	
valued at	\$60 00
" " " " Plum, the Appleton Gold Medal,	40 00
" " " " Cherry, the Lowell Gold Medal,	40 00
" " " " Tree Pæonia, the Appleton Gold Medal,	40 00
" " " " Herbaceous Pæonia, the Lowell Gold Medal,	40 00
" " " " Potato, the Society's large Gold Medal,	60 00

After a Trial of Three Years.

For the best seedling Strawberry, the Lyman Plate,	\$50 00
" " " " Raspberry, the Bradlee Plate,	40 00
" " " " Hardy Rose, the Society's large Gold Medal,	60 00
" " " " Camellia Japonica, the Society's large Gold Medal,	60 00
" " " " Azalea Indica, the Lowell Gold Medal,	40 00
" " " " Blackberry,	40 00
" " " " Gooseberry,	30 00
" " " " Currant, Red or White,	30 00

\$750 00

PRIZES FOR FRUITS DURING THE SEASON.

For the best and most interesting exhibition of Fruits during the season, the Lowell plate, valued at	\$20 00
For the second best do.,	12 00
APPLES.—For the best twelve Summer Apples, on or before the last Saturday in August,	6 00
For the next best do.,	4 00
For the best twelve Autumn Apples, on or before the last Saturday in November,	6 00
For the next best do.,	4 00
For the best twelve Winter Apples, on or before the third Saturday in December,	6 00
For the next best do.,	4 00
APRICOTS.—For best twelve, on or before the last Saturday in August,	5 00
For the next best do.,	3 00
BLACKBERRIES.—For the best specimens, not less than two boxes,	5 00
For the next best do.,	3 00
CHEERRIES.—For the best specimens, not less than two boxes,	6 00
For the next best do.,	4 00
CURRANTS.—For the best specimens, not less than two boxes,	5 00
For the next best do.,	3 00
FIGS.—For the best twelve specimens,	5 00
For the next best do.,	3 00
GOOSEBERRIES.—For the best specimens, not less than two boxes,	5 00
For the next best do.,	3 00
GRAPES.—For the best specimens, grown under glass, on or before the first Saturday in July,	10 00
For the next best do.,	7 00
Amount carried forward,	\$129 00

Amount brought forward,	\$129 00
For the best specimens, grown under glass, subsequently to the first Saturday in July,	10 00
For the next best do.,	7 00
For the best specimens of Isabella Grapes,	5 00
For the next best do.,	3 00
For the best specimens of Diana Grapes,	5 00
For the next best do.,	3 00
MUSK MELON. —For the best Musk Melon, in open culture, on or before the last Saturday in September,	5 00
For the next best do., raised by open culture, on or before the last Saturday in September,	3 00
NECTARINES. —For the best twelve specimens,	6 00
For the next best do.,	4 00
PEACHES. —For the best twelve specimens, grown under glass, on or before the second Saturday in July,	6 00
For the next best do.,	4 00
For the best twelve specimens, grown in open culture,	6 00
For the next best do.,	4 00
PEARS. —For the best collection, not exhibited before this year, with a written description of the same, the Society's plate,	10 00
For the next best do.,	6 00
For the best twelve Summer Pears, on or before the last Saturday in August,	6 00
For the next best do.,	4 00
For the best twelve Autumn Pears, on or before the last Saturday in November,	6 00
For the next best do.,	4 00
For the best twelve Winter Pears, on or before the third Saturday in December,	8 00
For the next best do.,	6 00
For the next best do.,	4 00
PLUMS. —For the best specimens, not less than two boxes,	6 00
For the next best do.,	3 00
QUINCES. —For the best twelve specimens,	5 00
For the next best do.,	3 00
RASPBERRIES. —For the best specimens, not less than two boxes,	5 00
For the next best do.,	3 00
STRAWBERRIES. —For the best specimens, not less than two boxes,	6 00
For the second best do.,	4 00
For the third best do.,	3 00
Amount carried forward,	\$292 00

PRIZES FOR FRUITS.

To be awarded on the first day of the Annual Exhibition in September.

Amount brought forward,	\$292 00
APPLES.—For the best twelve varieties, of twelve specimens each, the Society's Plate, valued at	20 00
For the second best do.,	15 00
For the third best do.,	12 00
For the fourth best do.,	8 00
For the best dish of Apples, twelve specimens, of one variety,	6 00
For the second best do.,	5 00
For the third best do.,	4 00
For the fourth best do.,	3 00
PEARS.—For the best twelve varieties, of twelve specimens each, the Lyman Plate, valued at	20 00
For the second best do.,	15 00
For the third best do.,	12 00
For the fourth best do.,	8 00
For the best dish of Pears, twelve specimens of one variety,	6 00
For the second best do.,	5 00
For the third best dish of do.,	4 00
For the fourth best do.,	3 00
ASSORTED FRUIT.—For the best basket of Fruit, of various kinds,	10 00
For the second best do.,	7 00
GRAPES.—For the best five varieties, two bunches each, the Lyman Plate,	15 00
For the second best five varieties, two bunches each, the Bradlee Plate,	10 00
For the best two varieties, two bunches each,	6 00
For the second best do.,	4 00
PEACHES.—For the best dish, of not less than twelve,	6 00
For the second best do.,	4 00
	<hr/>
	\$500 00

☞ The Prizes and Gratuities will be awarded on the following days:—

For Cherries, forced Grapes, forced Peaches, and Strawberries, on the last Saturday in July.

For Summer Apples, Apricots, Blackberries, Currants, Gooseberries, Summer Pears and Raspberries, on the last Saturday in August.

For Foreign and Native Grapes, Nectarines, Peaches, Plums, and Musk Melons, on the last Saturday in October.

For Autumn Apples, Figs, Autumn Pears, and Quinces, on the last Saturday in November.

For Winter Apples, Winter Pears, New Pears, and for the "Exhibition during the season," on the third Saturday in December.

☞ Competitors for Prizes are particularly referred to the Rules and Regulations, which will be strictly adhered to by the Committee.

PRIZES FOR PLANTS, FLOWERS AND DESIGNS.

AMOUNT APPROPRIATED, SEVEN HUNDRED DOLLARS.

DISPLAY OF GREENHOUSE PLANTS, IN POTS.

To be exhibited at the opening of the Hall, on the first Saturday in May:—

PELAGONIUMS.— <i>Class I.</i> —For the best six new and rare varieties, grown in eight-inch pots, a prize of	\$6 00
For the second best do.,	4 00
<i>Class II.</i> —For the best six new and rare varieties, grown in large pots, a prize of	6 00
For the second best do.,	4 00
ROSES.—For the best six varieties of Tea, Bourbon, Noisette, or Ben- gal, in pots, a prize of	6 00
For the second best do.,	4 00
For the third best do.,	2 00
CUT FLOWERS.—For the best display, a prize of	3 00
For the second best do.,	2 00
FUCHSIAS.—For the best six varieties, a prize of	6 00
For the second best do.,	4 00
CACTUS.—For the best six varieties, a prize of	3 00
For the second best do.,	2 00
CALCEOLARIAS.—For the best six varieties, a prize of	3 00
For the second best do.,	2 00
CINERARIAS.—For the best six varieties, a prize of	3 00
For the second best do.,	2 00
HEATHS.—For the best varieties, a prize of	3 00
For the second best do.,	2 00
GREENHOUSE PLANTS.—For the best display of not less than twenty pots, regard to be had to new and rare varieties, and well grown specimens, a prize of	25 00
For the second best do.,	15 00
For the third best do.,	10 00
HYACINTHS.—Prizes to be awarded second Saturday in May.	
For the best display, not less than twenty varieties,	5 00
For the second best do.,	3 00
TULIPS.—Prizes to be awarded the third Saturday in May.	
For the best thirty distinct varieties, a prize of	8 00
For the second best do.,	6 00
For the third best do.,	3 00
PANSIES.—Prizes to be awarded the fourth Saturday in May.	
For the best twelve distinct varieties, a prize of	4 00
For the second best do.,	3 00
For the third best do.,	2 00

Amount carried forward, \$151 00

Amount brought forward,	\$151 00
HAWTHORNS. —Prizes to be awarded the fourth Saturday in May.	
For the best display, a prize of	3 00
For the second best do.,	2 00
HARDY AZALEAS. —Prizes to be awarded fourth Saturday in May.	
For the best display, a prize of	5 00
For the second best do.,	3 00
SHRUBBY PÆONIES. —Prizes to be awarded fourth Saturday in May.	
For the best six varieties, a prize of	5 00
For the second best do.,	4 00
For the best display,	3 00
HERBACEOUS PÆONIES. —Prizes to be awarded second Saturday in June.	
For the best ten varieties, having regard to the number of varieties, a prize of	5 00
For the second best do.,	4 00
For the best display,	3 00
PINKS. —Prizes to be awarded third Saturday in June.	
For the best six distinct varieties, a prize of	4 00
For the second best do.,	3 00
For the best display,	2 00
HARDY ROSES. —Prizes to be awarded third Saturday in June.	
CLASS I.	
For the best thirty distinct varieties, a prize of	8 00
For the second best do.,	6 00
For the third best do.,	4 00
For the best display,	3 00
CLASS II.	
For the best twelve distinct varieties, a prize of	5 00
For the second best do.,	3 00
For the third best do.,	2 00
CLASS III.	
HARDY PERPETUAL ROSES. —For the best ten varieties, a prize of	
For the second best do.,	4 00
For the best display,	3 00
PRAIRIE ROSES. —For the best display, not less than six varieties, a prize of	
For the second best do., not less than four do.,	4 00
For the third best do., not less than four do.,	3 00
CARNATION AND PICOTEE PINKS. —Prizes to be awarded third Saturday in July.	
For the best ten varieties, a prize of	5 00
For the second best do.,	4 00
For the best display.,	3 00
HARDY RHODODENDRONS. —For the best display of the season, a prize of	
	5 00
Amount carried forward,	\$269 00

Amount brought forward,	\$269 00
For the second best do.,	3 00
For the third best do.,	2 00
DOUBLE HOLLYHOCKS. —Prizes to be awarded third Saturday in July.	
For the best display, a prize of	5 00
For the second best do.,	4 00
For the third best do.,	2 00
DOUBLE BALSAMS. —Prizes to be awarded second Saturday in August.	
For the best display, a prize of	3 00
For the second best do.,	2 00
For the third best do.,	1 00
PHLOXES. —Prizes to be awarded third Saturday in August.	
For the best ten distinct varieties, a prize of	6 00
For the second best do.,	4 00
For the third best do.,	3 00
GERMAN ASTERS. —Prizes to be awarded second Saturday in September.	
For the best display, a prize of	4 00
For the second best do.,	3 00
For the third best do.,	2 00
DELPHINIUMS. —Best six varieties through the season, a prize of	
For the second best do.,	4 00
For the third best do.,	3 00

BOUQUETS, WREATHS, DESIGNS, &c.

Prizes to be awarded at the Annual Exhibition.

VASE BOUQUETS. —For the best pair suitable for the Bradlee Vases, a prize of the Bradlee Plate, valued at	
	10 00
For the second best do.,	6 00
For the best pair for the Society's Marble Vases,	10 00
For the second best do.,	6 00
PARLOR BOUQUETS. —For the best pair suitable for the parlor,	
	8 00
For the second best do.,	6 00
For the third best do.,	5 00
For the fourth best do.,	3 00
CUT FLOWERS. —For the best display and best kept through the exhibition, a prize of	
	8 00
For the second best do.,	6 00
For the third best do.,	4 00
POT PLANTS. —For the best display, of not less than twenty pots, a prize of	
	12 00
For the second best do.,	10 00
Amount carried forward,	\$420 00

Amount brought forward,	\$420 00
For the third best do.,	8 00
For the fourth best do.,	5 00
COCKSCOMBS. —For the best six pots, a prize of .	3 00
For the second best do,	2 00
BALSAMS. —For the best six pots, a prize of	3 00
For the second best do.,	2 00
DAHLIAS. —Prizes to be awarded fourth Saturday in September.	

DIVISION A.

<i>Premier Prize.</i> —For the best twelve dissimilar blooms, a prize of	8 00
<i>Specimen Bloom.</i> —For the best flower,	3 00
<i>Various Colors.</i> —For the best yellow, buff, or orange; purple or maroon; crimson or claret; very dark; white; edged or tipped; scarlet; pink or rose; striped lilac, a prize of \$1 00 each,	12 00

DIVISION B.—CLASS I.

For the best twenty-four dissimilar blooms,	7 00
For the second best do.,	5 00

CLASS II.

For the best eighteen dissimilar blooms,	6 00
For the second best do.,	4 00

CLASS III.

For the best twelve dissimilar blooms,	5 00
For the second best do.,	3 00

HEREACEOUS PERENNIALS. —For the best display through the season, a prize of	10 00
For the second best do.,	6 00
For the third best do.,	4 00

ANNUALS. —For the best display through the season, a prize of	10 00
For the second best do.,	6 00
For the third best do.,	4 00

CAMELLIAS. —Prizes to be awarded second Saturday in February.	
For the best twelve varieties of cut flowers, with foliage, a prize of	8 00
For the second best do.,	5 00

SUMMER PHLOXES. —Prizes to be awarded third Saturday in July.	
For the best ten distinct varieties, a prize of	6 00
For the second best do.,	4 00
For the third best do.,	3 00

GREENHOUSE AZALEAS. —Prizes to be awarded second Saturday in March.	
For the best six varieties in pots,	6 00
For the second best do. do.,	4 00

FLOWERING SHRUBS. —For the best display, during the season, a prize of	10 00
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Amount carried forward,	\$582 00
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Amount brought forward,	\$562 00
For the second best do.,	6 00
For the third best do.	4 00

Gratuities to be awarded at the Weekly Exhibitions.

AMOUNT APPROPRIATED, ONE HUNDRED AND EIGHT DOLLARS,	.	108 00
For the best six Pot Plants, of different varieties, a prize of	.	\$2 00
For the second best do.,	.	1 00
For the best large Bouquet for vases or parlor, composed of flowers gracefully arranged, a prize of	.	1 00
For the best pair of Bouquets, of any description,	.	1 00
		<hr/>
		\$700 00

PRIZES FOR VEGETABLES.

AMOUNT APPROPRIATED, TWO HUNDRED AND FIFTY DOLLARS.

ASPARAGUS.—For the earliest and best, not less than three bunches, a prize of	.	.	.	.	.	3 00
For the second best do.,	.	.	.	.	.	2 00
BEETS.—For the best (pure blood beet,) during the season, not less than twelve roots, a prize of	.	.	.	.	.	3 00
BROCCOLI.—For the best three heads, a prize of	.	.	.	.	.	5 00
BEANS.—For the best and earliest peck of string beans, a prize of	.	.	.	.	.	3 00
For the best and earliest Lima beans, not less than two quarts,	.	.	.	.	.	3 00
For the best and earliest variety of shell beans,	.	.	.	.	.	3 00
HORSERADISH.—Best during the season, a prize of	.	.	.	.	.	3 00
CABBAGE.—For the best Drumhead cabbage, during the season, not less than three heads, a prize of	.	.	.	.	.	5 00
For the second best do.,	.	.	.	.	.	3 00
For the best Savoy cabbage, during the season, not less than three heads,	.	.	.	.	.	3 00
For the second best do.,	.	.	.	.	.	2 00
CARROTS.—For the best exhibited, a prize of	.	.	.	.	.	2 00
CAULIFLOWERS.—For the best and largest, during the season, not less than three heads, a prize of	.	.	.	.	.	5 00
For the second best do.,	.	.	.	.	.	3 00
CELERY.—For the best and largest blanched, not less than six roots, a prize of	.	.	.	.	.	5 00
For the second best do.,	.	.	.	.	.	3 00
CORN.—For the best and earliest sweet corn, not less than twelve ears, a prize of	3 00
For the second best do.,	2 00
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Amount carried forward,	\$61 00

Amount brought forward,	\$61 00
CUCUMBERS.—For the best pair under glass, previous to the first Saturday of June, a prize of	5 00
For the second best do.,	3 00
For the best and earliest of open culture,	3 00
EGG PLANTS.—The best display during the season, a prize of	5 00
For the second best do.,	2 00
LETTUCE.—For the best six heads, before the first Saturday in July, a prize of	3 00
For the second best do.,	2 00
POTATOES.—For the best <i>new</i> seedling, of superior quality, for the table, a prize of	10 00
For the best and earliest peck, previous to August 1,	3 00
For the second best do.,	2 00
PEAS.—For the best and earliest peck in June, a prize of	3 00
RHUBARB.—For the largest and best, previous to the first Saturday in July, not less than twelve stalks, a prize of	5 00
For the second best do.,	3 00
SQUASHES.—For the best pure Canada squashes, not less than six in number, a prize of	3 00
For the greatest variety exhibited, during the season,	5 00
TOMATOES.—For the best and earliest, not less than one dozen,	3 00
VEGETABLES.—For the best display and greatest variety at the weekly exhibitions, during the season,	5 00
For the second best do.,	3 00
For the best display and greatest variety at the annual exhibition,	10 00
For the second best do.,	8 00
For the third best do.,	6 00
For the fourth best do.,	4 00
For any new variety of vegetables suitable for the table, and worthy of cultivation, other than seedling potatoes,	5 00
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	\$ 142 00
For gratuities,	108 00
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	\$ 250 00

The regulations are the same as last year.

[Want of space compels us to omit the remainder of the doings of this meeting until our next.]

HORTICULTURAL OPERATIONS

FOR FEBRUARY.

FRUIT DEPARTMENT.

Though this is comparatively a season of rest from active labor, there is, notwithstanding, considerable to be done. The frost will of course prevent any out-door operations so far as the soil is concerned, but there is enough other work in a large garden to keep busy. Manure may now be got in

readiness. Stakes for trees and vines may be prepared, and labels for marking got out; cuttings of such trees, plants and shrubs as will grow in this way may now be made, thus saving many valuable hours when the season is more advanced, and other labor can be more advantageously performed.

GRAPE VINES in the greenhouse will now begin to show signs of pushing, and will start somewhat sooner than usual, owing to the severity of the early part of the winter. See that an even temperature is kept up while they are breaking: syringe daily, and tie up the shoots to the trellis firmly, as soon as the eyes have all pushed an inch. Cold vineries will need airing in very warm days, so as to prevent the great heat from breaking the vines too early. Cuttings may now be put in where there is a stock wanted. Vines in pots may also now be brought into the house for an early crop. Isabella and other hardy grapes may now be pruned.

PEACH and FIG TREES may be brought into the greenhouse now, and their fruit will ripen two months before the out door season.

BLACKBERRY, RASPBERRY and CURRANT Seeds may be sown now in pans or boxes, and placed in the greenhouse or hotbed.

SCIONS of FRUIT TREES may now be cut, and preserved in a cool cellar or shed, in earth or moss, until wanted for grafting.

STRAWBERRIES in pots, now taken into the greenhouse or grapery, and placed on a narrow shelf near the glass will bear a fine crop. Keep them liberally watered.

ORCHARDS may now be pruned, and the trees carefully scraped if they need it.

ROOT GRAFTING apples may be done, when everything has been got in readiness in the fall. Plant in boxes, place them in a cool cellar, and set out in nursery rows as soon as the weather will permit.

FLOWER DEPARTMENT.

This month is generally the most rigorous period of our New England winter, and tells most severely upon all exotic plants. All the means and appliances usually taken to preserve plants from injury during a long continuance of severe weather, in consequence of the large amount of artificial heat necessary to sustain the temperature, should be pursued with increased vigilance. In hothouses, the cultivator can have no excuse for destroying his plants by an excess or want of the essentials of vegetable life, since the atmosphere of the house, as well as the moisture, is completely under his control. We have seldom seen plants lost in winter by insufficient supplies of water, except where they were subjected to the parching heat of brick flues in the vicinity of the fire place. But the numbers otherwise destroyed, annually, are almost incalculable, especially such tender things as young calceolarias, and plants with succulent watery leaves, and tender roots. Every plant has a greater or less number of young tender rootlets on which the health and vitality are wholly dependent, and when the soil in which these are growing is suffered to become wet, and slight frost enters the house, the water in the earth congeals, and those roots inevitably perish. The soil, therefore, should be kept at a degree of dryness verging on abso-

lute want, and then the night temperature may be reduced with impunity, even below the freezing point.

PELARGONIUMS will require some attention. See that the green fly has not taken up his quarters on the leaves; if he has, smoke him out directly; if only a few plants are affected, take them out of the house into a back shed, or such place, cover them with a box or bariel, and fumigate; this is a good way to smoke individual plants. See to the training of the shoots, but do not top or pinch at this season, unless you wish them to flower late. Allow plenty of room between the plants for the circulation of air, and keep them free from dead and decomposing leaves. Those that have grown stronger than the others may receive a good shift, and towards the end of the month, all those intended for flowering specimens should receive their last shift. They seldom do so well when shifted later.

CAMELIAS should now be watered more freely, and liberally syringed over head. We find it a good plan to practise syringing even when in flower, though a few flowers may be thereby destroyed. Plants should not be repotted at this season unless they be very much in want of it, which, by proper attention, should not be the case. Inarching and propagating may be continued with. The same kind of treatment is applicable also to orange and lemon trees, a class of plants frequently half neglected. We have received an excellent article from our correspondent *Exoticus* on this subject, which we will endeavour to find room for in our next.

JAPAN LILIES may now be potted in a compost consisting of good loam and peat, rather sandy. They may now be increased by detaching some of the outer scales of the bulbs in separate pots, and planting them in the early part of spring in a sandy compost. The better way of propagating them, however, is to grow the specimens vigorously, and allow them to form psuedo bulbs or offsets, in the natural manner; the first method is only desirable for those who wish to increase them rapidly.

HYACINTH AND OTHER BULES, now coming into bloom, should be placed in the most light and airy part of the greenhouse, and watered more liberally. Those grown in glasses should have the water changed every three or four days. Putting a small piece of carbonate of ammonia (smelling salts) in the water at the time of filling the glasses, increases the vigor of the plant, and improves the bloom. Those kept in dwelling-houses should have as much light as can be afforded them, this being of more importance than air.

HEATHS, EPACRISES and hard wooded plants may be propagated successfully at this season.

FUCHSIAS, SALVIAS, HELIOTROPES, VERBENAS, and all kinds of bedding out plants, which the continuance of artificial heat has now forced into growth, may be put into pots and placed upon a shelf near the glass, for summer use.

SEEDS of *Mignonette*, *Viscaria*, *Rodanthe*, *Schizanthus*, *Nemophila*, *Clin-tonia*, *Phlox Drummondii*, and such annuals as will form a fine show in pots in spring, may now be sown if not already done, and *Ten-weck*, *Russian*, *Prussian*, and other stocks may also be sown, for turning out in the borders. Everything useful for adorning the bare, empty stages of the greenhouse in

summer, should be attended to; now is the time to begin providing for these purposes.

DAHLIAS, where rapid increase is desired, may now be taken in and slowly started; for propagation, they may either be potted, or plunged in earth, or old tan. But unless for propagation, it is yet too early to start them, as it only draws them up into long-stemmed, unsightly objects, when planted out. Now is the best time to sow dahlia seeds; sow in pots or boxes, and place in a warm spot near the glass, and they will succeed well.

RANUNCULUSES should be planted out this month, if the beds were properly prepared last fall; if not, omit it till March.

ACHIMENES, started last month, should now be potted off in proper soil, and if wanted for blooming early, they may be forwarded in a hotbed, if one is at hand.

ROSES in frames may now be brought into the house, and pruned, and they will give a fine succession of blooms.

CLIMBING PLANTS, such as *Kennedias*, *Maurandias*, &c., should now be neatly trained up to circular trellises, and they will make fine plants for exhibition in May.

PLANTS IN FRAMES will need looking after towards the end of the month. In fine weather air freely, and if any of them are too dry, give a little water.

GLADIOLUSES for early blooming, may now be started in pots.

AMARYLLISES, now beginning to grow, should be potted and placed in a warm situation, and sparingly watered.

Maintain cleanliness and neatness in the houses and among the plants, keeping the atmosphere moist, and admitting plenty of air during the day, to carry it off before the evening, and keep the temperature as low as is consistent with safety to the plants.

VEGETABLE DEPARTMENT.

With the month of February, activity in this department commences, and the industrious gardener will find much to do where a liberal supply of vegetables is wanted for the table; and even where very early forcing is not carried on, at this season, there is much to be done, in order to prevent hurry at the time of planting. All the tools should be got in readiness, sharpened if necessary, and mended if broken; manure and soils should be carted; frames and sashes put into good order, and all such work attended to.

HOTBEDS may now be made up. Properly prepare the manure by turning two or three times, and let the bed be made of good height so as to have abundance of heat. When it has been made a few days, and properly aired, to take off the foul gases, earth it over with good compost, and as soon as this is well warmed, seeds may be sown.

CUCUMBERS, *Lettuces*, *Radishes*, *Cauliflowers*, *Broccoli*, *Celery*, *Tomatoes*, *Cabbages*, *Egg Plants*, &c. should be sown immediately. Those which are to be transplanted to be put into pots, and the others directly in the soil. Give attention to air and water, and cover well with mats and straw until the weather is mild.

THE MAGAZINE
OF
HORTICULTURE.

MARCH, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Trees in Cities.* By the EDITOR.

WHEN we take into consideration the great number of trees which are annually planted in the streets of our principal cities and towns, it will at once be admitted that few subjects could be discussed in our pages, of more importance to the public than this: none certainly are more susceptible of improvement, and few more imperfectly understood. We are therefore glad that Mr. Jacques has drawn attention to it, by his excellent remarks in our last Number, (p. 49,) and invited others to give their views in relation to a subject which touches the interests of so many landed proprietors, which contributes so much to the comfort of pedestrians, and which adds so greatly to the local beauty of every city. Any person who has visited the towns of Springfield, Northampton and Worcester, or New Haven, Conn., will appreciate the truth of our remarks.

As an evidence of the interest which is manifested on the subject of *Trees in Cities*, we annex the views of a Boston correspondent, who has read Mr. Jacques's remarks:—

“I have been reading Mr. Jacques's Article on *Trees in Cities* in your last Number, and think it contains many desirable hints.

It appears to me, that rows of trees in narrow streets are

very much out of place ; they darken the houses and are very much in the way of carriages and pedestrians.

If you plant in streets, select those which are at least 60 feet in width, and place the trees at least 15 feet from the houses.

A row of trees, all of *one* variety and of *one* size, has too much "unity" for my taste ; they are too formal in their appearance, and look like a long file of infantry.

I should plant a variety of trees of the *same* character—say, round-headed, oblong, or pyramidal trees—then you have a *variety* without great contrast.

A graceful weeping elm placed next a prim horse chestnut would produce any thing but harmony. The horse chestnut and sugar maple would harmonize well together.

While on the subject of "Trees in Cities," I would suggest to the city authorities, the propriety of planting a row of beautiful trees in the *centre* of the wide part of the Neck. They would afford a delightful shade, and add greatly to the beauty of that wide avenue."

Such we doubt not, in the main, would be the opinion of all individuals of good taste, who possess any knowledge of trees, of their characteristic beauties, and adaptation to peculiar places, could we have an expression of their views ; and we hope that a full and free discussion of a subject of so much interest, will lead to the dissemination of a more correct taste in planting trees.

The question in regard to *variety* in the planting of avenues, is one on which much might be said. Our correspondent, differing both from ourselves and Mr. Jacques, is for *variety*, and thinks that there is too much, rather than "little enough" of "unity," when only one sort is planted. As this is a matter of taste, we might refer our correspondent to some of the ablest writers on the subject, in support of our position. If simply shade and shelter are all that are aimed at, it is of little importance whether a street is planted with a mixture of one or more kinds ; or if the individual beauty of the trees is only thought of, rather than their effect as a

whole, it is no great consequence how many kinds are selected. But all our ideas of an avenue are associated with grandeur, solemnity and depth of shade ; and if the mind is distracted by mere variety or contrast or novelty, its characteristic beauties no longer exist.

The suggestion of our correspondent in regard to the planting of a row of trees in the middle of the widest part of Washington street on the Neck, is a good one, and worthy the attention of the city authorities.

We now come to the consideration of Mr. Jacques's last query, viz: *How ought the trees in a city common or park to be arranged?*

"Take," says Mr. Jacques, "as an example, Boston Common. Here we have, for the most part, a smooth grass surface, intersected by straight wide gravel walks, and these lined on each side with trees placed at equal distances from each other. But suppose no tree or walk were there, and a *carte blanche* were given to any one, that he might arrange things in his own fancy, what would you do, Mr. Editor? Would you plant straight rows of equi-distant trees there? Probably not."

The mode of planting a piece of ground must, in the first place, depend wholly upon its intended use ; and, in the second, upon the extent of surface to be covered. Thus, a field of an acre or two, laid out as a common, for the various purposes of a parade ground, or for assemblages of large numbers of persons, for the accommodation of tents or pavilions, or without them, would require an entirely different arrangement than if it was required simply for the purposes of promenade, or for recreation. In the former instance, large open spaces would be necessary ; the walks would require to be somewhat geometrically laid out, and only few trees could be admitted, and these mostly in lines or squares. In the latter, it should be laid out with walks, in curved or wavy lines, diversified with groups of trees and shrubs, and so arranged as to afford a variety of scenes or views. Of this style of planting, unfortunately, we have few or no examples in this country. The public squares of Philadelphia, though

planted with a variety of trees, scattered here and there, are as bare of beauty, and show as little good taste in their arrangement, as Boston Common.

The same remarks apply to a larger extent of surface, whether of ten or of fifty acres; the adaptation or fitness of the design to the intended use of the grounds, being the first object to be taken into consideration.

With these general principles to be observed in laying out every piece of ground, we do not hesitate to say that we should not arrange the walks and trees in the same manner in which this has been done. Without going into a full detail how we would accomplish a new arrangement, if we had, as Mr. Jacques says, a *carte blanche* to do so, we will now merely state what we consider the worst features of its present arrangement. These are first, the double rows of elms and other large growing trees, which are now planted on each side of the *narrow* walks which cross the ground in every direction. Second, the *clumps** and *single* specimens of evergreens, which have been recently set out; and third, the confused arrangement of the walks, and the absence of all distinction as regards width, with two or three exceptions, between the main ones and those of secondary importance.

Such being the defects of the present plan, it may be asked what alterations we would propose, and what arrangement we would suggest. This, however, we cannot well show, without the aid of diagrams; but as a main feature, we would, after reserving a portion of it as an open space, to be kept smoothly mown for the purposes for which the Common was originally reserved by the city, plant the remaining portion in a picturesque style, somewhat as Mr. Jacques has suggested; not, however, with *shrubs* or *small trees*, so as to form "thickets:" for in all such public places we entirely disapprove of them, for various reasons which it is unnecessary to enumerate. We would plant trees only—but these should embrace every hardy species and variety indigenous to our own country, as well as those of foreign growth—

* One might almost suppose we had gone back to the days of "Capability Brown," to look at the compact masses of arbor vitæ planted on the high ground.

and we would dispose of them according to a part of the annexed diagram, (*fig. 8.*) which we reproduce from a former

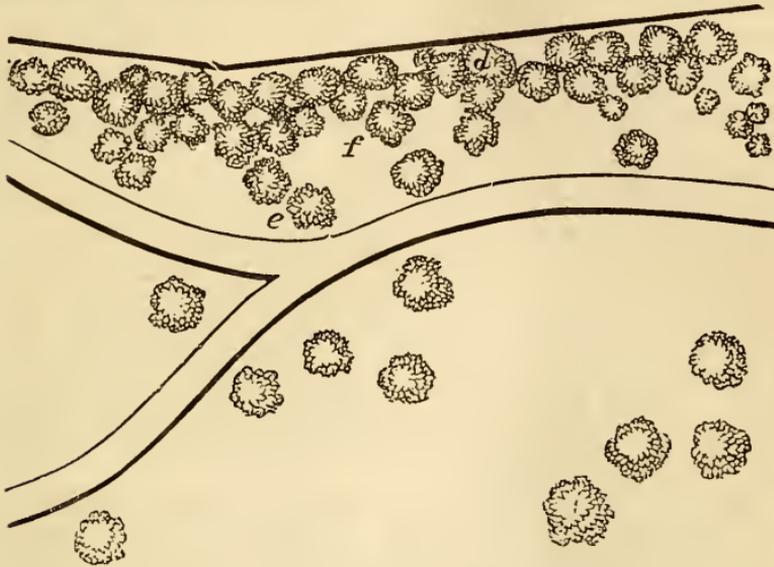


Fig. 8. Trees arranged in natural groups.

volume ; that is, we would *group* them as they appear in the portion *below* the walks, and we would have few or no trees, except elms, whose lowest branches were higher than *six feet* from the ground. Those tall, unsightly, lean trees, scarcely better than pollards, we would reject altogether. A single glance at our plan will, we think, show how greatly the general effect of the ground would be improved. The endless and unmeaning lines of trees, arranged in almost geometrical order, would give way to natural groups, whose broken outline and varied aspect can only afford that delight to the mind, which is the great result of landscape art.

These are our views, briefly and crudely expressed in so limited a space ; and though we may not expect to see much alteration in what has been already done, we may hope for improvement in the future. The discussion of the subject cannot be otherwise than interesting to all who desire to see a better taste displayed in the design and arrangement of our public grounds.

In another Number we hope to have something to say upon the present mode of performing the operations of street planting, &c.

ART. II. *On the propriety of Planting Belts of Trees on open, exposed Lands.* By R. B. LEUCHARS.

THE title of this paper is no doubt calculated to surprise those of your readers who have all their life-time been accustomed to wield the woodman's axe with an unsparing hand and an indiscriminating eye, who have faithfully followed the customs of their progenitors, in clearing from the ground the tenants of the ancient forests, because they were most convenient for fuel, or because they bore nothing which they could carry annually to the market in the shape of fruit, without considering how much they deteriorated the actual value of the land, not only for the purposes of culture, but for subsequent sale.

There is nothing that so much adds to the beauty, and increases the value, of selected portions of ground, especially in the vicinity of large towns, as an undulating surface, covered with belts and groups of trees. Even when covered with the native forest trees of the country, it is much increased in value, and far more so, when liberally planted with choice evergreens, and other kinds of ornamental trees and shrubs. It is this feature which shows the peculiar character of the scenery of Britain. It is this which adds so much to the beauty of Brookline, near Boston, and some spots on the Hudson, which want nothing but the "velvet turf," and the suffruticose evergreens, to be characteristic specimens of British landscapes. It is not my present purpose to enter into the science or minutiae of the picturesque, but to devote a few pages to the consideration of subjects connected with ornamental trees, and the propriety of planting them in certain localities, with the view of increasing the value of the lands.

In endeavoring to establish the propriety of what is here recommended, it is obviously useless to theorise upon what could or should be done; but fortunately we have not to search far for a striking illustration; in two places, which are in this respect the converse of each other, and showing conclu-

sively the respective value of these places for the same purpose ; the one so increased in value and beauty by its trees and shrubs, as to be an object of pride to the State, and an object of imitation to the country ; the other, possessing equal capabilities and superior attractions, is decreased in value almost to worthlessness, by the want of these natural embellishments.

It is useless to add, that Brookline is one of the localities which are here alluded to, and which is so well known to every one interested in landscape beauty that description would be superfluous. It owes none of its beauty, however, to its peculiar locality, but to the peculiar character of that locality—to its broken surface and to its umbrageous woods ; and by these features being heightened and increased by the art displayed in the numerous pleasure grounds and villa gardens, which give so delightful an air of richness, beauty and grandeur to the whole place. It presents a harmonious combination of the rusticities of nature, with the embellishments of art, carried out in a manner which I have seen no where else, inasmuch as it has been accomplished by a unity of tastes and interests, which is rarely found among a community even of wealthy men. Brookline is one of those places which a foreigner admires in spite of his prejudice, and which the lover of landscape beauty cannot leave without a certain reluctance and regret.

Without seeking for a converse example, we might point to that large tract of hilly ground which lies by the side of Chelsea Beach, formed by a congeries of hilly undulations, commanding a sea view of surpassing grandeur, and a land prospect, perhaps unequalled in the vicinity of Boston,—with a soil deep, rich and fertile, and an atmosphere healthy, salubrious and mild ; and yet, though this ground lies within a ten minutes' ride of State street, it lies at the present day, tenantless and bare—as if nature's very self had condemned it to eternal solitude in the midst of the busy haunts of men. It is strange, indeed, that in the search for sites for suburban villas, this desirable spot, the summer resort of thousands of the gay inhabitants of Boston, should have been so long neg-

lected. But visit the spot, and it will tell you its sorrowful tale. Listen to the breezes that mingle their dying echoes with the sound of the ocean waves, and they will recite to you the mournful story of its present lonely and desolate cheerlessness. In years gone by, the axe of the woodman divested it of the arborescent foliage that once covered its nakedness, and gave it a claim to the picturesque; "nor left a wreck behind," to give evidence of the barbarity that had destroyed its beauty, and condemned it to the abandonment of future generations.

It is pleasing, however, in this age of progress and speculation, to learn that this estate is once more to be planted with trees and shrubs, and to take its place among the picturesque suburbs of Boston. And this work has not only been projected, but is being carried out by men who have, in general, but very vague ideas of building land being increased in value by the plantation of trees—men who accurately balance the return, against the outlay. The ground which I have spoken of, has been purchased by a company of gentlemen of wealth and taste, for building lots, who are making beautiful roads over the ground, and planting thousands of the best trees and shrubs that can be procured in the nurseries. There cannot be a doubt that this measure will be advantageous and profitable, both to the present proprietors and those who purchase the lots for building; and had the same trees been planted a dozen years ago, the land would undoubtedly have been worth at least twice its present value.

The value of such landed property is enhanced in many ways by the plantation of trees—immediately, as well as prospectively. The purchasers of such land are now beginning to be more alive to the advantage of healthy trees, growing on their grounds previous to building. Besides the real, there is also an ideal, value attached to trees and shrubs, already established and in vigorous growth. It has an attractive and pleasing appearance. It is more encouraging to build on such a place, than one where you must plant, and live on it a dozen years, before you can eat the fruit of your

own garden, or sit under the shade of trees of your own planting. And how often do men, eager in search of fame or of fortune, spend every moment of their lives in the anxious pursuit, till they find themselves on the wrong side of three score, when they buy ground, build a villa, plant trees, and make orchards; but ere the trees have grown large enough to afford shelter or shade, or the orchard to produce fruit, the planter *has ceased to require them*.

But apart from these considerations, there are many other inducements to planting unsheltered and exposed grounds with trees. Adding value prospectively is in itself sufficient to induce any one, who has ground, to plant trees; it is one of the easiest methods of leaving the world better than we found it. It does not happen to many to plant trees, and cut them down at a mature age, but this only renders planting a more interesting performance, because he is planting for the benefit of his children. He is placing money in the bank of nature, which seldom fails in returning a good interest, if properly invested. To the man who securely enjoys his estate, planting is a pleasing operation. In his full-grown trees he finds a link which connects him with his fathers, and in his young trees, he finds another which carries him down to the next succeeding age. These are the feelings which make our hearts cling with a pious reverence to the paternal homestead, and render it—however valueless—dear to our children.

Trees are also powerful modifiers of the climate. They break the force of strong winds. They maintain an equability in the temperature of the air. They lessen the intensity of cold, and moderate intense heats. They afford the best means of concealing disagreeable and unsightly objects, and separating one place from another. They heighten the effect of agreeable objects, by combination and harmony. They contribute to the beauty of objects already beautiful, by giving them new forms, and a greater variety of light and shade. They add to the cheerfulness of the homestead, not only by their own pleasing forms, but by the invitation they give to birds, to come and sing among their branches. They

give an interest to objects and places, otherwise indifferent and uninteresting, and increase the value and beauty of flat, open grounds. Many a bleak and bare farm could be rendered interesting and agreeable to the eye, by planting a few trees along the boundaries of the fields, grouping them on the elevated heights, or scattering them on the less fertile portions of the surface ; all which would contribute to enhance its beauty, and, as a natural consequence, to enhance its worth.

There are many other topics connected with this question, to which I might advert. Indeed, the bearings of the subject are extremely diversified. Tree planting is beginning to be carried on, from a principle somewhat different from that which generally actuates these operations, as may be seen from several examples within our own knowledge, and which, it is hoped, will be carried out more extensively than it has hitherto been in this country. Reserving further observations till a future time, I would now merely add, that planting trees and shrubs on land intended for villas and suburban dwellings, is worthy of the serious consideration of those having such property—both in regard to beauty, utility, and prospective profit.

Boston, February 19th, 1851.

ART. III. *The Principles and Practice of Grafting.*
From the Gardener's Chronicle.

No subject will be read with more interest by all who are interested in Horticulture, than a full elucidation of the theory and practice of Grafting. In its most common forms, almost all cultivators are more or less acquainted with the art ; but in its varied and valuable methods, so generally in use among the experienced gardeners of France, we, as yet, know little or nothing. Even the English, who are well versed in nearly every department of horticultural science, are very far behind the French in the art of grafting ; and if

a better knowledge of the best system is important to them, how much more will our own cultivators be benefited by such a thorough acquaintance with its theory and practice, as will enable them to carry on its operations successfully?

With a view to afford this information to the English gardener, a translation of D'Albret's work on grafting has been commenced in the *Gardener's Chronicle*, to be accompanied with wood cuts, illustrating all his descriptions, in such a manner as to render the process as familiar as possible.

"The French," says the Editor, "have long been famous for the variety, singularity and ingenuity of their modes of budding and grafting. In Thouin's 'Monograph of Grafts,' all that was known to that great gardener was carefully represented and described. But to his pupil, D'Albret, belongs the honor of separating the essential and non-essential, and of reducing his master's long practice to greater method and precision. It is D'Albret, whom we are about to produce in an English dress, and we feel confident that our readers, of every class, will agree with us in thinking that by the publication of his views, a real service will be rendered to practical horticulture. It will then be seen that our cleft grafting, whip grafting, saddle grafting, inarching, crown grafting, and budding, form but a small part of the methods which the great continental gardeners find it useful to employ, one for one purpose, one for another."

With these prefatory remarks by Dr. Lindley, we introduce the commencement of the series of articles, which will be continued in our future numbers, and we may apply the same observations to our own countrymen, in regard to their importance, which Dr. Lindley applies to his, viz., "that it cannot be denied, that superior as English gardening is in some respects, it is very far behind that of France, in all that relates to the management of fruit trees. Of course, we say this in a general sense only; for we are bound to admit that in some cases the English gardener is not behind his continental friend. These cases are, however, the exception, not the rule; but we believe it is only necessary to

teach the gardeners of this country something more than the meagre routine which they learn while young, in order to place them at once on a level with their friends across the channel.”—ED.

A WORD ON THE HISTORY OF GRAFTING.—Many authors have written on grafting, and some of them have treated the subject with great clearness. Much has been contributed to it by the celebrated A. Thouin, who published in 1821 an excellent monograph, in which we find the best documents on its history; after his death, that work was incorporated with his “*Cours de Culture*,” published in 1827 by his estimable nephew, Oscar Leclerc Thouin. The author of this monograph states, that the discovery of the art of grafting is of the highest antiquity, but its inventor is not known. The Phœnicians transmitted it to the Carthagenians and Greeks; the Romans received it from the latter, and spread the knowledge of it in Europe, where it has become such as we find it at the present day. He adds, that the authors who have treated of the art in some detail are Theophrastus, Aristotle, and Xenophon, among the Greeks; Mago among the Carthagenians; Varro, Pliny the naturalist, Virgil, Agricola, in Italy, and Sickler, in Germany; Bradley, Miller, and Forsyth, in England; Olivier de Serres, La Quintinie, Duhamel, Rosièr, Cabanis, and the Baron Tschûdy among the French; and to these we now add, with veneration, the name of the late André Thouin, whose remarkable monograph contains all the principles and details essential for the guidance of writers and practical men with reference to the art of grafting; for my part I could wish for no other. During the last 13 years of his long and honorable career, he entrusted me with the execution of all the models of grafts which he had collected, to the number of 119,* in his “*School of Practical Agriculture*,” founded in the *Jardin des Plantes* of Paris in 1797. This fine and judiciously formed

* In a compilation published in 1825, we find a more extensive nomenclature, in consequence of the application of the same operations to different plants. This multiplicity of names seems to have been badly received by the public, the work being still in its first edition.

collection is altogether admirable ; but I shall here demonstrate only such portions of it as I consider most essential to amateurs and to practical men, who daily experience the necessity of propagating plants, either for the agreeableness of their flowers or for the quality of their fruits, produced by species or varieties which frequently cannot be propagated except by grafting them on wild stocks, or on such as are, in other respects, of little value or interest ; but they must naturally belong to the same family, as we shall subsequently explain.

OF THE UTILITY OF GRAFTING.—Gardeners and connoisseurs in horticulture are aware that by grafting, many trees can be made to assume very picturesque forms ; and it is the means of propagating numbers of woody, resinous, soft, or herbaceous plants, for use or ornament, of which very many give few or no seeds, and are difficult to strike from cuttings or layers ; by grafting we make sure of preserving the originals, whether valued for the quality of their fruits, the structure and form of their flowers, their colors, the perfumes which they exhale, or as regards the nature of their wood, the aspect of the trees, the shades and variation of their foliage, &c. &c. Productions obtained by chance, or by fertilization, either natural or artificial, or in consequence of accidental disease, and many other sports of nature, which would otherwise be lost, or could be but rarely, and after long delay obtained from seed—are readily perpetuated by the art of grafting. It may therefore be viewed as a celestial boon for increasing the amount of our enjoyment. By this mode of propagation we can accelerate the fructification of species or varieties of fruits which are annually obtained from seeds, without however increasing their size, as some have asserted, but falsely, as will be demonstrated by the following experiments. I budded annually, for 15 years, a St. Germain pear-tree trained as a pyramid. It received the first operation in August, a bud being taken from one of the lateral branches produced by the original, which had then been two years grafted. This bud was inserted about 10 inches from the base of the central shoot. Every year, at the same pe-

riod, a similar operation was performed; and when the tree had received the fifteenth, it was about 19 feet high. At the age of 18 or 20 years, all the lateral branches from the respective buddings produced an abundance of fruits, which differed nothing from each other, and their flavor was the same as that of the original sort. A similar experiment was also made at the same time on the Reinette Franche, with corresponding results.

I cannot therefore say that grafting increases the size of fruits. Their increase of size is always limited by nature, as are likewise all the variations which they sometimes take in form. Their fertility, the greater or less perfume and succulent quality of their flesh, are generally caused by the influence of the stocks which nourish them; nevertheless the situation in which these are placed, the quality of the soil from which they draw their nourishment, &c., frequently modify the assertion I have just made, inasmuch as a sort grafted on a stock originally disposed to give large fruit of indifferent quality, and forced to live in a bad locality, cannot possibly give the result we might reasonably expect, were it placed in a more favorable position.

ON THE AFFINITY OF GRAFTS AND STOCKS.—I shall only say a few words on the affinity of grafts with the stocks on which they should be worked, in order to assist in destroying the errors of some ancient authors, and which are still credited by some persons, who are led away with the false idea that they may successfully graft trees or other plants on each other, although these should have no family relationship. In consequence of this ignorance, it has been said, that in order to obtain black roses, you must graft on the black currant, and to have green, on the box. They would also wish to persuade us that all trees will take on the olive, and this on the fig; the vine on the walnut and cherry; the peach on the willow, and the apple on the great cow-cabbage, &c. &c. Happily, our modern authors, and the enlightened men of our age, have entirely rejected these false assertions. It is now well known that, in order to graft with success any woody or herbaceous plant, it is necessary that the plant fur-

nishing the grafts be of the same family as the stock; or, frequently, that both should belong to the same genus, or to varieties of the same species. There should also be some analogy between the saps of the two individuals, not only on account of their affinities, but also with reference to their proper juices. Thus we may graft, with success, the plum on the cherry, and *vice versa*, the apple takes on the pear, and *vice versa*; but although these genera are of the same family, nearly related, confounded, or united by some learned botanists, yet they rarely exist united two or three years. With regard to the vigor of the stocks, we prefer those that are strong and hardy for large trees, and the weaker for those of smaller dimensions. As to the persistence of the leaves, and the movement of the sap in the subjects to be united by grafting, it is in general necessary that they should nearly correspond. We have, however, some examples to the contrary. The *Prunus Laurocerasus* and *P. lusitanica*, both evergreens, live for some time grafted on the bird cherry, *prunus padus*, and are less sensible to the cold than those growing on their own roots. The *Eriobotrya japonica* and *E. glabra*, also evergreens, live a very long time grafted on the *Mespilus oxyacantha*. The cedar of Lebanon, *Larix cedrus*, grafted on the common larch, *Larix europæ*, lives upwards of ten years, but it remains stunted and dwarf. There are other well known facts of this kind, which I need not mention here, as they only prove exceptions to the general rule.

OF THE QUALITIES which branches and shoots ought to possess when cut from the trees, and the means to be adopted for preserving their vitality.—Many authors recommend taking the shoots produced at the extremities of healthy vigorous trees. The theory which they develope seems to be conclusive. It must, however, give way to the subjoined observations. Some years before the first transfer of the *Ecole des Arbres Fruitiers du Jardin des Plantes*, effected in 1824, I was obliged to take grafts from more than 400 of these trees, of the different sorts, which were found to be in a state of complete decrepitude, often covered with canker,

burns, &c. Such grafts put on healthy young stocks have all grown with remarkable vigor. These trees, from 20 to 26 years old, and of which many had attained the height of more than 36 feet, all bore fruit in prodigious quantity, and were free from original disease, when they fell under the axe in 1841.

The proper sorts of shoots for grafting and budding are not easily known by those not well experienced in the art. In taking shoots for buds, more especially, they make sometimes enormous blunders by cutting either too early or too late. In general the shoots ought to be of medium thickness, excepting those having slender wood, and in that case the thickest ought to be preferred; all ought to have made the greater part of their growth, in order that a considerable number of the buds on the lower part of the shoots may be completely formed, for such only should be reserved for budding, seeing that the bark adjoining these will be also in a firm state, for if the parts are too tender and too herbaceous when placed in the incision made in the stock, they are apt to be decomposed by the abundance of sap in the latter, which ought always to be in greater flow than that of the shoots which furnish the buds.*

The shoots of this description being separated from the trees, the herbaceous extremities are immediately cut off, as are likewise the leaves attached to the eyes reserved, taking always care to preserve at least one-fourth of their petiole.

The shoots should not be exposed to the free air, and they should be kept in a cool moist place till such time as they can be budded; but whatever means may be employed for preserving their vitality, we should avoid too close packing, in order to prevent the fermentation of the substances employed for that purpose.

We know that the moss of our woods (*hypnum*) is very proper for this purpose. We, gardeners, often furnish ourselves with a large hollowed-out cucumber, in which we

* I am anxious to impress upon my readers the necessity of paying particular attention to this observation; it is general for all the operations, and I shall pass it over when I come to treat of them.

place the shoots. In this situation they may be preserved in a good state for 10 days. If for a longer period, they must be put in a bottle, which must be filled up with honey, and then corked and sealed hermetically. In this state they will be preserved as fresh as possible during the journey.

Scions, for grafting in spring, are of course much more easily preserved than buds. For these they prefer the extremities of strong shoots, or any other part of which the thickness is about equal to that of a quill, and of the length of from 16 to 20 inches, with prominent eyes, not excepting the terminal, which ought always to be preferred, if it has not burst its envelopes.

It has been long remarked in many countries, that, in order to preserve grafts, especially for transportation, they ought to be separated from the parent tree before they have commenced to vegetate. In the climate of Paris, the month of February appears to us to be the best time for taking them off; they ought then to be placed in a northern exposure, in a horizontal position on the soil, and covered over with some of that adjoining, to the depth of about $2\frac{1}{2}$ inches. They should remain in that position till their buds are well swelled, by which time the stock intended for their reception will be much more advanced, a necessary condition, as I have already explained. If the cuttings for grafts have to be sent to a distance, it is best to send them off as soon as they are taken from the tree. If the journey require only three weeks or a month, it will be sufficient to tie them up in packets, putting some dry moss between them, in order to prevent them from being bruised, and then insert their bases in a ball of moist clay, covered with fresh moss, the whole tightly enveloped in a thin coating of straw. But if the cuttings have to be sent to a great distance, so as to require several months on the way, they should be enclosed in a box, in small parcels, all laid with their tops in the same direction, their thick ends being covered with clay and fresh moss, the whole compactly fastened with laths likewise coated with moss. If for a long sea-voyage, care should be taken to close

the box hermetically ; but if not, some holes may be made in the top to prevent the shoots from becoming mouldy. I have sent grafts packed in this way to St. Petersburg, New York, &c., and they have always arrived in good condition.

ART. IV. *On the Production of new varieties of Corn by Hybridization.* BY J. H. JAMES, Urbana, Ohio.

THE article in your December number on the Old Colony Sweet Corn, and the remarks given on hybridization, recalled to my mind a letter written by Dr. Gideon B. Smith of Baltimore, many years ago, which, after a little search, I found in the Albany Cultivator for 1838, p. 64, and here send you :—

“ Judge Buel.—In the last number of the Cultivator I observe the following remark by the Conductor—‘ The idea of improving our corn by artificial crossing, is novel, yet perfectly philosophical.’

“ Some ten or twelve years since, I instituted a series of experiments in crossing different varieties of corn, and was perfectly successful. The variety of corn in Dr. Brown’s list, (page 43 of same number) No. 16 Pennsylvania eight-rows, called Smith’s Early White, was the result of one of the experiments. It was produced by what we call the Tuscarora or “ New York cheat ” with the Sioux, (No. 9 of Dr. Brown’s list.) From the parentage of this new variety you would naturally expect a mulatto color ; but I will explain why it is pure white as I go along. I had two objects in view, the one to get the large white grains of the Tuscarora on the small white cob of the Sioux ; and the other to produce a variety earlier than either, if possible. To accomplish my object, I planted a piece of ground, say the eighth of an acre, with both varieties, one in each alternate hill ; but as the Tuscarora was known to me to be from fifteen to twenty days later than the Sioux, I planted the

latter fifteen days after the former was planted. Now, the process of crossing is performed in the following manner. The variety that has the cob that I wish to retain, is used as the female, and as the tassels (male flowers) appear, they are carefully cut off and suppressed; the variety whose grain I wish to get, is used as the male, and its tassels are allowed to grow. It is unnecessary to interfere with the female flowers (the silk.) The ears of corn produced by the Sioux hills had the form and size of cob of the Sioux, but the grain was a beautiful sulphur color, and of the form of the Tuscarora, though smaller. This corn I planted the next year, and the result was a beautiful variegation of the grains, of pure yellow and pure white, though all the grains were alike as to size and shape. The cream color had evidently returned to its original elements. I then carefully selected the white grains, and planted them the third year, and the result was, the establishment of the variety called 'Smith's Early White.' (I do not understand how or whence Dr. Brown obtained the name of *Pennsylvania* eight-rows.) My experiments established the fact, satisfactory to my mind, that you can place the grains of any variety of corn upon the cob of any other variety, by the process detailed above; and that there is no object more worthy the attention of farmers, than improvements of this kind. You have only to regulate the time of planting each variety to correspond with the time of flowering. I ought to observe that if you do not destroy the tassels of the variety that has the objectionable *grain*, the crossing will not be so perfect, because the *impregnation* will be from two males instead of one, and consequently the grains produced will be various. The crossing is equally important in producing the large late kinds, small and early. You can get the tall Virginia corn, (that is, the grain of it,) upon the early dwarf stalks. Indeed you may vary it, almost at pleasure. As you will perceive above, it requires three years to accomplish the object perfectly. The first year affects the crossing; the second year certain characteristics return to their original elements, such as the color and somewhat of the flinty quality; the third

year, the new variety is produced perfect—and will remain so, so long as it shall be kept distinct from other varieties.

“Another experiment was combined by me, with the above, viz,—the first matured ears of good form and size were always selected for seed. By this process I was able in five years to make my new variety from fifteen to twenty days earlier than the Sioux, or any other variety. I had green corn on my table, for some years, two weeks earlier than the hotels who obtained early corn from Norfolk. I beg to observe that the Smith’s Early White has but eight rows and the Sioux (the female parts) twelve. Now to account for this. After I had produced the variety, I was still desirous of putting it upon a smaller cob: hence I planted it with the Sugar corn—using the latter as the female. The result was the eight rows. I also once took a notion to give it a red cob, and had no difficulty in doing so, by using the red cob sugar corn as the female; but I re-crossed and got rid of the red cob again, because it stained the lips and fingers while eating it. Excuse this from an old admirer. GIDEON B. SMITH, *Baltimore, April 6, 1838.*”

By this letter you will see that these experiments were long since made public by Dr. Smith, and it is partly to give him the due credit to which he is entitled for them, that I send the letter, but more particularly to call attention to the different results shown by his experiments as to the change of stalk and other qualities of the staminate plant. According to Mr. Pope’s experiments he found the stalks vary somewhat in the second year, but I am inclined to think he was mistaken in this, and that the difference was caused by a difference in the seed, or most likely by a poverty in the soil, of these particular hills: and the more so as he described his variety as now having the uniform characteristic of southern corn. My own observations in these matters accord entirely with Mr. Smith’s. I have made no special experiments to hybridize varieties of corn by artificial impregnation, but I have for a long time noted the results of accidental crossing in my garden, and profited by them. For

more than twenty years I have cultivated a small variety of corn, called Mandan, because the original supply, of which I obtained a few grains from Daniel Gano, of Cincinnati, was brought from the Mandan villages on the Upper Missouri, by an officer of the army, just then returned from these villages, which at that time were far beyond our frontier and rarely visited. The variety has smaller stalks than any other, and as it is very early is well suited to garden culture. During the time I have cultivated it, the grains have several times changed their character, but I have never perceived the slightest variation in the size of the ears, in the cob or in the stalk. Several years ago I found a portion of it crossed with the sugar corn, which I saved and have since cultivated, not however to the exclusion of the original.

This cross impregnation is very active in the culture of wheat, and explains what our farmers term *running out*. They procure a grain and sow it with success for a year or two, when it ceases to attract attention because it has lost the qualities which caused it to be sought. It has in fact run out, because they or their neighbors have cultivated other kinds in close proximity, which have transferred their qualities to the new kind and in fact displaced the grain. If grains or other seeds are planted entirely remote from other varieties of the same kind, they will reproduce themselves without change, and the varieties would never run out. But in the common mode of culture, a mixture is almost unavoidable, and if the grain fields were carefully culled, valuable varieties might often be found well worthy of exclusive propagation.

This cross impregnation, which acts at once upon grains both in their color, their form and their quality, produces no change in the external appearance of fruits or in their qualities, but the seed of the fruits will follow the kinds from which the cross comes, and hence the disappointments that continually beset us when we attempt to reproduce fruits from seed. This I suppose to be true of all fruits, but the length of time needful to give us tested observations, prevents our having a proper series of ascertained facts. It is

promptly manifest in the Tomato; we may select very choice specimens to propagate from, and yet, from the unknown cross impregnation, we may be, and I find myself apt to be, continually disappointed. But I am getting on to matters not intended when I began, and I desist.

Urbana, Ohio, Jan. 22, 1851.

ART. V. *The Pitmaston and Isabella Grape: Open Air Culture.* By A. JOHNSTON, JR., Wiscasset, Me.

DEAR SIR,—Upon opening your December number of the “Magazine of Horticulture,” for a quiet “sit-down” of enjoyment at my own fireside, I was *extensively* abashed at finding myself at full length therein, in an article entitled, “How to raise Isabella Grapes;” just as though I could teach the good people of the old Commonwealth anything about “Grapes!” You say, however, “From the Maine Farmer,” and so I feel relieved from a *yard* or two of explanation. I know I shall be excused by the horticulturists of the old Bay State, on the ground, that my conversation was not addressed to them, but to our own benighted brethren of the State of Maine.

I write now simply to correct a few errors, probably of the printer, and add a few remarks which seem to be necessary to that “article,” so that nothing may be lacking in the “how” to raise Isabella Grapes.

On the 551st page, read, “all the laterals and tendrils were again *pruned* off,” not *pinched*. In 1849 (same page) read *seventy-five*, only, were allowed to grow; not twenty-five: on the 553d page, at top, read *bunches*, not *branches*.

I said nothing about “summer pruning” in that article, and many of my horticultural friends have inquired whether they should indulge that habit. I allow *never more than two bunches* to grow on the same spur, or little *new* branch, and always stop this *bearing shoot*, *by pinching*, in the middle of the third joint beyond the outermost bunch, about the

last of June or first of July. Other shoots, *stragglers*, I allow to remain, if they are not in the way, and do not shade the fruit too much. I keep the vine pretty *snug*, however, especially at the top of the trellis, as a great growth there would injure the fruit below. I never pluck a single leaf, with the mistaken notion of giving the fruit *more sun*. They do not want the direct rays of the sun on the fruit, but on the *leaves*, and it is curious to observe how the leaf twists about to present a fair surface to the sun, and how singularly the foliage shrinks away from the fruit, and seems to stand aside to allow of more sunlight, in autumn. The leaves seem to grow stiffer and close up more, as soon as the fruit begins to color. I have never seen any statement of this fact, but cannot doubt, as I have observed the same thing, of the Isabella vine, for years. All our native vines will not bear the close pruning, that seems so necessary to the foreign varieties, being of a much more hardy and luxuriant habit. They look as though crippled, by *severe* pruning, and yield, next to nothing, by such treatment.

I have been misunderstood, too, as regards showering or watering. I never put a drop of water on the foliage of the vine, until the fruit has "set," and has grown to the size of "*good sized peas*." I do not use a great quantity of water, but apply it with some force through a syringe. I use more, perhaps, than would be necessary in ordinary cases, as my vine is near the street, and the dust collects very fast upon the foliage and fruit, which would damage it much, if suffered to remain.

There is one more "item," perhaps of consequence, which I omitted in its proper place. The passage way to my dining room, from the street, is close by this vine, a little yard six feet wide and twenty feet long. The last spring (1850) I dug over all the old clay soil, added two cartloads of pasture loam, and one half of a load of old cow manure, mingled the whole together and then laid down a *stone flagging* (stones about four inches thick) as a walk, from the gate to the door. This walk is sixteen feet long by three feet wide. It would heat with the sun and *remain warm all night*. It

is, no doubt, of very great service to the vine. I never have seen a spot of mould, mildew, blight, or any other thing, that needed "doctor stuff" on this vine, its foliage, or fruit: and I invite all lovers of this fine fruit, if they chance to travel this way in the season, to stop a moment, and satisfy themselves, that grapes of excellent flavor, good size, and perfectly ripe, *can* be grown in the State of Maine, in the open air, without trouble, at very slight expense, and a minimum amount of knowledge. I consider it much more difficult to raise a crop of plums or pears, the certainty of the crop being taken into account.

I purchased of Hovey & Co., in the spring of 1849, a little vine, in a small pot, called "Pitmaston White Cluster." It was very small, though it "leaved out" very pert and thrifty. We often laughed at the peculiar "ambitious" look and sturdy growth of our little new comer. In the fall I laid it down, two arms, about two feet long each. The next spring (1850) I unbound it as usual. It had the same important look when the eyes began to push, but I little thought what was going to happen. Passing by, one day in June, I was astonished to see *eight* very handsome bunches of grapes well set and quite large. It had scarcely been there a twelvemonth. I cut out seven of them and hesitated some time over the eighth. It was suffered to grow. It rapidly gained on the Isabellas, and ripened off, first rate, October 1st, a full week before them, of a rich amber color, semi-transparent, free of pulp, and of most agreeable flavor. The vine grew also, beyond any vine I ever have seen—with fine stout wood, short joints, and maintained the same smart look the whole season. I laid down seven canes of it in November, pruning off three others. The seven are nine feet long, each. This is a vine, *as is a vine*, sure enough. It may bear ten bunches this year, but I have no doubt it will set forty, at least.

One word about the border. Fifteen feet long, three wide, and three deep. Drained by a layer of old brick and mortar, six inches thick. Soil made of one load of old cow-manure, two loads of coal-pit earth from the pasture, two

barrels of *ashes*, leached, a lot of bones, say a barrow load—all these well mingled together and overlaid with very old tan, say four inches thick; watered with six or eight gallons of soap suds once a week; precisely similar situation as the Isabella vine. The coal-pit earth, as we term it, is the mound of earth remaining around an old coal-pit; consists of old turf, ashes and small charcoal dust. The kind I use is at least twenty years old; it is a most desirable soil for the grape, always moist without being wet, and dry without being parched.

I never have seen Mr. Allen's treatise on the Culture of the Grape until within a month. It is a valuable work for those who have glass structures; but I can never be made to believe that a putrifying carcass is desirable for the vine. I buried a goose, once, feathers and all, at the roots of a vine, and I never think of it without feeling "goosey" about it. I like the bones, hair, hoofs, &c., of animals, but not the decaying flesh.

I am building a miniature grapery, (cold house,) 21 by 9 ft. This is every inch of land I can spare. It will be a very tidy affair, glass front, top, ends, and will cost \$3.50 per foot *only*. I cannot explain without diagrams, and it would not interest you. I may venture again one of these days to say "my say." A. J., JR.

Wiscasset, Me., January 24th, 1851.

Those of our readers who read Mr. Johnston's excellent article on the Isabella grape, will be glad to welcome him again to our pages. They will find the present article no less interesting than the previous one. To all cultivators of the grape it is invaluable; and if all amateur cultivators were as observing as Mr. Johnston, and could "say their say" as he does, in regard to their practice, we should soon have an accumulation of facts which would be of the greatest value. We trust Mr. Johnston will send us the whole details of his *cheap vinery*, diagrams and all, that we may lay them before our readers.—ED.

ART. VI. *The Fameuse Apple.* By C. GOODRICH, Burlington, Vt.

THE FAMEUSE APPLE.

Pomme de Neige — *Downing.*

Chimney Apple — of Lake Champlain.

Snow Apple — of Ogdensburgh, Detroit, &c.

DEAR SIR:—In the January number of your Magazine you have a drawing and description of the Fameuse Apple, both of which are very accurate excepting in size, which is rather large. It is a great bearer in alternate years; its history I think not correct.

It is here one of the most common as well as oldest varieties; hundreds of barrels are sold in a single season in this town alone. It is very variable in size, quality and time of ripening, so much so that it is generally said "there are two sorts;" but I am satisfied the difference is from culture, as I have had apples from scions taken from the best bearing trees I could find in Montreal (which I marked when filled with ripe fruit) and grafted on old trees producing poor apples of the same sort, without the slightest variation from those growing on the old stock in which they were grafted.

This variety requires a deep, rich, loamy soil, rather moist, and if inclining to clay it is still better. The soil on the Island of Montreal seems particularly adapted to it. In this valley they vary so much, depending on soil and culture, that they can hardly be recognized as the same apple. On light warm soil, with the best culture, I have never seen as good specimens as those produced on heavier and colder soils. The best in this valley are in St. Albans, where the soil is a deep strong loam, and rather moist. All American writers call it a Canadian apple; of this I think there is no proof. One hundred and twenty years since, the French planted this variety on the Eastern shore of Lake Champlain, opposite Fort Frederick on Crown Point, at a place called "Chimney Point"—more than fifty years before any other permanent settlement. From these old trees scions have been scattered

through Vermont, and called the "Chimney apple." A very intelligent and highly educated French Seigneur, residing on an old seignory eighty miles below Quebec, informed me that this was one of the first varieties of apples planted on the place; that the trees were very old and were brought from France. The early French settlers planted the same variety at Ogdensburgh, Detroit, and other places on Lakes Erie and Ontario, where it has been known as the "Snow apple;" also at Kaskaskia, Illinois, more than one hundred and fifty years since, where the old trees are still productive, and apples from them sent to St. Louis, &c. The same apple may be found in the markets in France, and in London of the growth of France.

It is hardly to be supposed that a seedling apple was produced in Canada at so early a day as to be distributed more than one thousand miles in every settlement made by the French one hundred and fifty years since; and until our Canadian friends can give us some history of it of an older date, I cannot admit their claim to it.

The Fameuse apple seems to be of a distinct class, as much so as the Esopus Spitzenburg, the Rhode Island Greening, or the Pearmain. The Rev. Mr. Dewey, first minister of Bennington before the Revolution, had trees from Sir William Johnson's "Castle" in the "Indian Country," which he called the "Johnson apple," evidently a seedling from it: six years since, his grandson sent me scions from them. This apple is smaller and ripens later than its parent. The St. Lawrence, a seedling of a recent date, is another. Rev. Dr. Wheeler of this town has a seedling from seeds planted by himself, which has fruited three or four years, which he thinks superior to its parent, and doubtless there are many others resembling it.

Burlington, Vt., Jan. 1851.

We are much indebted to our correspondent, Mr. Goodrich, for so complete a history of the Fameuse apple. We have ourself had doubts of its being a native fruit; but as all our pomologists have generally considered it an American variety

we did not wish to raise a doubt without having some facts to warrant it: from what is here advanced, however, respecting its history, it would seem conclusive that it is a foreign fruit, introduced by the early French settlers at the same time as the White Doyenné, St. Germain, Bon Chrétien, and other of the old pears which are found in the same localities as the Fameuse apple. We shall take an early opportunity to look up the Fameuse in the French pomological works.—ED.

ART. VII. *On the Treatment and Cultivation of Orange and Lemon Trees.* By R. B. L.

THE Orange is, without exception, the most popular of all flower-bearing and fruit-bearing plants. So great favorites are they among all classes of the community that there is scarcely a family, in which a taste for flowers has found a place, that some one or other of this genus is not to be found in their possession. With the mere florist or seeker of rarities, the preference for particular flowers is as fleeting and inconstant as that for dress; it changes with the season, and the favorite of one year is set aside the next, to make room for something else; and the third year it becomes little more than a despised and abandoned outcast, not lessened in its beauty, but displaced by the intolerant rage for novelties, which excite a more attractive, though no less transitory influence, till they also, in their turn, sink into oblivion, and their places in the affections of the flower fancier become occupied with other favorites.

Some of these neglected favorites, possessing more than ordinary merit, are all in a sudden recalled to notice, placed in their former position, or even elevated a little higher. They are improved by attention, and invested with additional charms. They hold their sway over the enthusiastic mind for a season, and are again cast down from their high places in Flora's temple. I could name at least a dozen floral beauties,

that have been in and out of the fashion — “like Sir Roger de Coverley’s coat and doublet”—at least a dozen times during the last dozen years.

The orange and its allies, however, are a class that have maintained their position in the public favor not only for years, but for ages, undiminished, sometimes indeed subjected to neglect by enthusiastic votaries of fashion, but they have never lost the favor of people of taste; nor has this been a misplaced favoritism, for it is impossible to find, among all our exotic trees, a more imposing and more truly beautiful object, than a healthy well grown orange tree, covered at one and the same time with foliage, flowers and fruit. What lover of the beautiful can look upon this noble and elegant tree, with its arborescent yet graceful habit of growth, its deep glossy green foliage, its deliciously sweet-scented flowers, and its conspicuously rich colored fruit, carrying one, with a kind of ideal enthusiasm, among the orange groves of southern Europe, to the orange gardens of Nice and Genoa; and we might add, the orange gardens of the southern States of the Union, though these are only the epitome of what they might be.

It is difficult to discover the original habitat of the orange. Although largely cultivated on the shores of Italy, it does not appear to be a native of Europe. The oranges of St. Michael’s, in the Azores, are generally considered the best that come to our markets; they are not, however, indigenous productions of that island, but were sent there by the Portuguese, as they were originally sent to the southern States of America by the Spaniards. In the middle of a forest, on the banks of the Rio Cedeno, Humboldt found wild orange trees, bearing large and sweet fruit, which were probably the remains of some old Indian or Spanish plantations, for the orange cannot be reckoned amongst the spontaneous vegetable productions of the American continent.

The orange, when full grown, attains to the height of from twenty-five to thirty feet, and when healthy is most graceful when full grown. We have seen many oranges cultivated

under glass in Great Britain, above twenty feet high, planted in the floor of large conservatories. At Castle Temple, near Glasgow, in Scotland, there is a citron tree which completely covers a wall thirty feet in length and nearly twenty feet high, and when we saw it some years ago it was covered with large fruit, a noble sight. We have often seen them trained on the back wall of greenhouses, vineries &c., and producing large crops of fruit.

The orange family live to a great age, and even under artificial culture they are known to be many hundred years old. In one place in Britain we have seen trees that were planted as far back as the time of Henry the VIIth; and several others that were planted in the time of Elizabeth, and are still in a healthy and flourishing condition. In Andalusia there are extensive orchards of orange trees of great age, which have for centuries formed the principal revenue of the monks. In Cordova, the seat of Moorish grandeur and luxury, there are orange trees still standing, said to be seven hundred years old.

The orange is a plant that will bear many hardships and much ill treatment under artificial culture; and its tenacity of life is often tried to the utmost; for though almost every one values his orange trees, they are nevertheless subjected to very bad treatment if not absolute neglect. Unlike many other plants they will linger for many years in a condition between death and life, and in which they would be quite as valuable dead as alive. Before entering, therefore, into a practical consideration of their culture, it might not be improper for us to take a glance at the treatment to which this genus has hitherto been subjected, even by those who have gone so far as to construct houses for their reception, as well as by those who treat them as they do their garden seeds, and such portable and perishable ornaments of the parterre, viz., set them out in the sun in the months of summer, and stow them away in a cellar for the rest of the year.

There are but few instances in this country where houses have been erected for the exclusive culture of the orange; nor is it anywhere cultivated under glass for profitable pro-

duct ; neither is it a fruit that can ever compensate the cultivator where this is the object of its culture. The orange can only be grown profitably for edible fruit where the climate and soil are perfectly suitable ; not a high arid temperature like our southern summers, but a moist, mild, salubrious and equable temperature, like that which characterizes the islands of Malta and the Azores, where the finest oranges are grown.

It appears to have been the opinion of gardeners in olden times that the orange was a peculiarly domesticated kind of plant ; that it was different in its habits and requirements from other plants that were kept in glazed houses, since it was not supposed to require a glazed house at all, and hence many of the structures called orange houses, of the last century, were merely ordinary buildings with slate roofs and large windows in front, without any windows on the ends or back. Many structures of this kind may be found all over Great Britain. A fine specimen of this kind of orange house still stands at Wanstead Grove, in Essex, and is still the winter receptacle of large orange trees. Another stands at Woburn Abbey, in Bedfordshire, now more appropriately changed into a sculpture gallery. It would appear therefore to be generally supposed that orange trees did not require much *light*, at least in winter, and this notion seems to have descended so faithfully from one to another, that we find it practically acted upon at the present day ; whether from choice or necessity, I must leave those who practice it to decide ; certain it is, that orange trees are shut up from the influence of the light in winter and exposed to its unshaded brightness in summer, and this, too, from the fact of a practice which springs from the wisdom of experience. This fact involves us into a somewhat curious and interesting enquiry, why plants that are invariably, according to the same practice, set out and exposed to the full influence of the summer air, and very often of the burning sun, should thrive best when excluded from these influences, in the months of winter, when these influences were so much weakened by natural causes. It is rather difficult to reconcile these discrepancies,

unless it can be called, as many other things are, *the practice* which is generally adopted, and just because it is so, the plants are compelled to reconcile themselves to it, whether they will or not.

Admitting that orange trees prosper and produce fruit abundantly in localities where they are occasionally subjected to a great degree of solar light and heat, as on the shores of Italy, in the Azores and other islands, yet it is easy to see that in these places they possess great advantages over those cultivated in glass houses, in pots and tubs, or even planted in the ground. Those places where oranges thrive best, are not only exposed to the moist and equalizing breezes of the seas that surround them, but their climate is also more genial and salubrious of itself, and hence we find that orange trees do not thrive best in warm climates but only where the climate suits them. In some parts of our southern States, where the summers are hotter than the south of Europe, and the winters sufficiently mild for its culture, the orange will not thrive at all, and yet there are many plants that flourish with the orange on the Apennines which bloom abundantly in our gardens, and stand our severest winters unhurt. Another curious fact rises out of this enquiry regarding the nature of the orange. In some parts of the south of Italy, the orange will not thrive though nearly in the same latitude. In Florence and Tuscany it is only found in carefully cultivated gardens, but there are none of the orange groves that are so plentiful farther west ; but the olive, the grape and the pomegranate are in abundance to compensate for the want of the orange.

A consideration of these facts would seem to imply that the successful culture of the orange depends more upon the nature of the soil and the congeniality of the climate, than upon the latitude of the place, or mere heat of the atmosphere ; and that a climate may be suitable for the ripening of grapes, maize, tobacco, rice and other tropical crops, and yet be very unsuitable to the growth of the orange. Many attempts have been made to grow oranges in the southern States, though with little success ; and though some fruit is

produced, it is only for looking at, and is scarcely more fit to eat than a lemon ; and though I have seen growers enthusiastic in favor of fruit produced by their own trees, the fruit is as unlike the oranges of St. Michael's, as the Fox grape is unlike the Muscat.

Many attempts have been made to acclimatize the orange and to make it stand frost without protection. These attempts, however, have been without success, although it thrives well in China and Japan, where the climate is sometimes severer than in England. The *Aucuba japonica* and the Chinese *pæonies* withstand a frost that would destroy the orange, and yet I have seen the orange bear ten degrees of frost without injury. In viewing the question, however, in relation to the climate of New England, which is not only more protracted and severe, but its alternations of heat and cold much greater, and more injurious to all kinds of exotic vegetation, it is necessary to have recourse to expedients in exotic culture, which milder winters and cooler summers render quite dispensable.

It is too much the custom, however, of those who grow a few orange trees from fancy, and who are not acquainted with their nature, to regard frost as the only enemy to be contended with, in our severe winters ; and hence the only object seems to be, to place them out of the reach of frost, no matter where or how ; and in choosing a place of protection, no other idea but the fear of frost influences their selection. It is very right to regard frost as an enemy in such cases, and it requires considerable care to contend against it successfully ; but it is a sad mistake to regard it as the only enemy we have to encounter ; for there is one no less destructive, and though slower, is more subtle in its process, namely, artificial heat. This is true in a very extended sense, and in regard to many other plants of a similar nature, though to none more certainly than the orange and its allies ; and hence it is essential to guard against one of the greatest enemies of the orange, though it is the direct opposite, and also the greatest antagonist of frost.

When the plants of any kind are placed in cellars, from

which the light and air, comparatively speaking, are excluded, it is absolutely necessary to their welfare that they should be then in a dormant state, and be kept so during the period of their confinement. Activity on the part of the leaves is not necessary to their preservation. This fact is very convincingly proved, by cutting a branch of an evergreen and covering it with snow during the winter. So long as it remains covered with snow, it will keep fresh and healthy, but if taken from under the snow, even in midwinter, and exposed to the air, it will soon die. Instances of this nature might be multiplied, but this is sufficient to illustrate the point in question. All kinds of plants do not retain moisture through the winter to the same extent, and those species that are usually grown under glass, coming from a climate which is evidently warmer than that in which they require protection, are less likely to mature their tissue, and are consequently more subject to the influence of frost, as well as more susceptible of the influence of artificial heat.

The purpose of the present article being to bring into notice the peculiarities of this class of plants, we will now enter into some practical considerations in regard to their culture.

Boston, February 4th, 1851.

(To be continued.)

ART. VIII. *Notes on Winter and early Spring Flowering Greenhouse Plants.* By HORTUS.

THE following selection may be useful to those of your readers who wish to form a collection of really suitable and satisfactory plants for decorating greenhouses during winter. It is a very prevalent custom to cultivate greenhouse and hothouse plants in the same structure. When this is the case, it is not possible to do justice to the whole. To suit the latter, a temperature must be kept up highly injurious to the others. In the annexed list, all tender hothouse plants

are excluded, and artificial heat will only be requisite to keep the thermometer above the freezing point. In severe weather, a minimum temperature of 34° at night, and in bright sunny days a maximum of 60° day, will be sufficient.

The love of flowers is greatly increased when success attends their cultivation. Many people, in forming a collection indiscriminately, spend money in purchasing, and afterwards sacrifice time in cultivating, plants of little or no use for the purposes intended, and the pleasant pursuit is given up in despair.

LUCULIA GRATISSIMA.

This is frequently treated as a hothouse plant, but it is found to do equally well in a greenhouse. It blooms freely, forming trusses similar to the common hydrangea, of a pink color, and powerfully fragrant. Cuttings of young wood, rooted in spring, will form good plants for flowering the following winter. After they have completed their growth, they should be placed out of doors to form flower buds, and housed previous to cold weather. Like the chrysanthemum they may be propagated after the flower buds are formed, striking the cuttings in small pots, where they remain to flower. They succeed best when limited for pot room. When exposed out of doors, the leaves will look brown, but soon regain their color when brought into the house.

CORONILLA GLAUCA.

This is an old and much neglected plant, but very beautiful when covered with its fine trusses of yellow, fragrant flowers. It is of easy culture. Cuttings, rooted in early summer and placed out of doors for a month or two, will flower during the months of November and December.

OXALISES.

The oxalises, *Bowiei*, *versicolor*, *purpurea*, &c., are fine flowering plants. Potted during the month of September, watered sparingly until leaves are formed, and placed near the glass while growing, will insure abundance of bloom: they remain many months in flower; when this is past, they

should be ripened off and kept in a state of rest until the following potting season arrives.

CESTRUM AURANTIAECUM

Is a favorite plant, with the habit of night-smelling jasmine. The flowers are produced in clusters, of an orange yellow, or apricot color, with a fine perfume of orange-peel; these are succeeded by white berries, giving the plant an highly ornamental character; the points of the young shoots require frequent topping to induce laterals, and preserve a bushy habit. It propagates readily by cuttings.

CINERARIAS.

These furnish a fine display of flowers for eight or nine months in the year, if properly managed, and are valuable for furnishing flowers for bouquets, &c. in winter. They are of every shade of color, and many of them fragrant. Seeds sown in April will afford a succession of flowers from November to April, and cuttings or offsets, rooted in August, will succeed these. When growing, they like shade and moisture; frequent syringing over the leaves benefits them much, and keeps them clean. Rooted offsets can be abundantly obtained, by plunging an old plant in light soil, and keeping it moist.

EUTAXIA MYRTIFOLIA

Is a most profuse bloomer; flowers, light yellow color. It requires to be well stopped back while growing; every shoot should have the point pinched out as the growth commences. The flowers do not retain their perfection many weeks. It is easily raised from cuttings in summer.

CHORIZEMAS.

These are graceful growing plants, giving a profusion of papilionaceous flowers, chiefly of red and yellow colors. They require a well-drained turfy soil, and watered sparingly towards autumn, to harden their wood. Young shoots, about two inches long, will root readily if taken off with a *heel* of old wood. They require frequent syringing, being very lia-

ble to the attacks of red spider. During their early growth, they should be kept in the house ; afterwards, placed out of doors until autumn. *C. cordata*, *C. ovata*, *C. varium*, *C. varium nana*, and *C. Hendersonii* are desirable varieties.

LACHENALIAS.

The *Lachenalias* *péndula*, *tricolor*, and *lútea*, are very attractive early spring flowering plants. The bulbous roots should be potted about the end of August, and moderately supplied with water until they have fairly started into growth. The flower stems rise from the centre, at the base of the leaves, to the height of six or nine inches, nearly covered with tube-shaped, drooping flowers, of a yellow color, which remain a long time in perfection. When the leaves fade, they should be kept dry and cool, until potting time arrives.

EPACRISES.

This genus contains many varieties, flowering successfully from December to May. When the flowers fade, they should be pruned close, and shifted into larger pots, if requisite. They grow well in fibry loam. The pots must be well drained. A few pebbles or small pieces of charcoal mixed in the soil will insure porosity. After potting, they may be placed in a quiet situation out of doors, and frequently pinch out the point of luxuriant shoots to maintain uniformity. *E. grandiflora*, *E. nivàlis*, *E. pulchélla*, *E. impréssa*, and *E. miniàta* are among the best.

PRIMULA SINENSIS.

The Chinese primrose is a well known plant, of great beauty, and prolific in flowers. The chief colors are white, and different shades of purple ; those with fimbriated flowers are most valued. By sowing seeds at intervals from June to September, a succession of flowers will be had from November to May. The largest and best colored only should be reserved for seed. They do not ripen seed well before May or June. They require to be grown in well-drained pots, and progress rapidly in summer in a cool frame or on a shaded shelf in the greenhouse. Water must pass freely through

the soil; they like plenty of it, but not when stagnated about their roots. The double varieties (white and purple) should be in every collection.

January 22d, 1851.

(*To be continued.*)

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

EPIPHYLLUM TRUNCATUM AND ITS VARIETIES.—I consider that these ought to be brought more into notice than they are at present. If we take into consideration their time of flowering, along with the beauty of the blossoms and the graceful appearance of the plants, we must come to the conclusion that, as a whole, we have little to equal them during the dark days of winter. What have we better for decorating our conservatories and drawing-rooms throughout November, December, and January? By exciting some, and retarding others, I can have a prolongation of bloom during these comparatively flowerless months. But, alas! how often do we meet with plants, all but annihilated, with scarcely a leg to stand upon except a wooden one, of a pale sickly appearance, either soddened with water, or starved for pot-room, pent up in a dark corner of a stove or forcing-house, when they ought to be in the open air ripening their wood for a future display of flowers. The method I adopt to insure success, as regards their treatment, is as follows: I grow none on their own bottoms; they are all grafted on *Cereus speciosissimus*, which I consider a better stock than *Pereskia aculeata*, as the grafts are not so liable to be outgrown by the stock on the former as on the latter. Select some clean healthy plants that have been struck from cuttings the previous year for stocks. In March introduce them into a stove or pit where there is a heat of from 50° to 70°. When they show signs of growing, with a sharp knife make incisions in the angles alternately all round from four to six inches apart, and place one graft on the top, fastening it with a spine of the stock, and proceed in the same manner with the sides. I prefer the grafts from one-year old shoots, they require nothing farther than shading, and keeping rather close for a month or six weeks. In the course of two months they will begin to show signs of growing, then give them more air and light, and keep the stocks divested of all suckers as they appear. As regards height, they may be from one foot to six,, that all depends upon taste and convenience. A plant grafted one foot high will form a handsome bush, two or three feet across, hanging over the sides of the pot, and supported with a wire trellis underneath; cylindrical trellises are the best for showing tall plants to advantage. As regards culture, presuming the plants have done flowering, and are stored away on a shelf in the greenhouse, or any other convenient place, free from damp, and kept rather dry at the roots, they will require nothing more till about the middle of March. Then they must be

brought to the potting-shed and repotted; this operation requires to be performed very carefully, as the shoots are easily broken. The soil that I find best suited for them is, two parts decayed turf, one decomposed cow-dung, and one river sand, or, what is better, the grit that is washed by the rain on the sides of turnpike roads. These well incorporated, together with a little leaf-mould and some pieces of charcoal, make a suitable compost; the pots must be well drained, three inches at least for large plants. Then proceed to shift them very carefully, by rubbing part of the old mould away, and pressing the new rather firmly among the roots; re-adjust the trellises, and the work is completed. Afterwards place them in a gentle bottom heat, either in a stove or pit, and give a good watering, allowing the thermometer to range from 50° to 70°; giving them a syringe in the morning when there is an appearance of a fine day, and they will soon start into growth. Then, light, air, and moisture are beneficial to them at this stage, frequently turning the plants, so as to balance them on all sides, giving manure water once a week when they are in a growing state, and regulate the young shoots; pinch some out where they are coming too numerously, in order that the plants may be equal on all sides. After they have made their growth, or towards the end of July, remove them to a greenhouse, or cold pit, for a short time, preparatory to placing them out of doors; withhold manure water at this stage, and keep them rather dry, in order that the wood may get thoroughly ripened; they will require protection from wind and rain; place them on coal ashes in a south aspect, at the bottom of a wall or hedge, till they have set their flower-buds. Towards the middle of September, remove them to a light airy place in the greenhouse, and introduce them into the stove or forcing-pit, in succession, as the demands of the family may require. I have proved by this management that there is no difficulty in getting them to bloom freely.—(*Gard. Chron.*, 1850, p. 821.)

ART. II. *Domestic Notices.*

PROCEEDINGS OF THE POMOLOGICAL CONGRESS AT CINCINNATI.—C. M. Hovey, Esq.: Dear Sir. In the last number of the *Magazine*, just come to hand, (Jan.) in your article on "Pomological Gossip," page 23, in speaking of the delay in publishing the proceedings of "the third session of the Pomological Congress," you say, "The Cincinnati Horticultural Society offered to publish the entire proceedings, and we trust they will soon appear." Had you attended the same, you would have known the reason why the Cincinnati Horticultural Society did not publish the proceedings. As the remark implies, if it is not a direct charge of, a want of *good faith*, which unquestionably would not have been made had you understood the matter, it seems proper therefore that an explanation should be made.

When the Cincinnati Horticultural Society were informed that the Congress would hold its next meeting in this city, a vote was unanimously passed that the Society would provide a *Hall* for its *session*, and extend all other means within its power to facilitate the object of the *Congress*; of this its

President was duly informed, and by him politely accepted. On the morning appointed by the *President's Circular* for the meeting of the Congress, a Committee of the Horticultural Society was in waiting, at the appointed place, to escort the delegates to the Hall. After organizing, the previous offer of the Society was renewed and cordially accepted, when an adjournment was moved to meet in the evening, and carried. At this meeting a vote was carried to hold its future meetings on the ground of the State Agricultural Fair, under the patronage of the State Agricultural Board; of course, the tendered aid and farther civilities of the Cincinnati Horticultural Society were declined. The notes of its Transactions were carried by its Secretary to Cleaveland.

You will understand that this explanation is not made to find fault with any one, but simply to exonerate the Cincinnati Horticultural Society and its members from the seeming implication of a want of courtesy and good faith. Very respectfully yours, A. H. ERNST, *Spring Garden, Cincinnati, Jan. 21, 1851.*

[Comment is unnecessary. We did not understand the matter until we read the above communication. Had we known the facts, we should not have made the remark quoted by Mr. Ernst.—ED.]

LARGE PEAR TREE.—There is in Newport, R. I. a very large and old pear tree, in *perfect health*; it must be at least *two hundred years old!* it is *nine and a half feet* in circumference (or three feet three inches in diameter) and certainly over *one hundred feet* high. It bore fifteen bushels of fruit, and there are three sorts upon it, ripening in succession. (The pears are of pyriform shape, bay green, and a baking variety.) It was estimated to contain *five cords of wood* at the time of the Revolution, and was partly cut through, (the place is not entirely healed over yet) for fire wood by the Hessians at that time, and was only saved by the interference of the family. *Yours, A. SMITH, Newport, January 12, 1851.*

WORCESTER HORTICULTURAL SOCIETY.—The annual meeting was held on the first of January, and the following officers elected:—

President—Stephen Salisbury.

Vice Presidents—Dr. W. Workman, Wm. T. Merryfield and E. F. Dixie.

Trustees—Geo. T. Rice, Dr. S. Flagg, S. H. Colton, E. Earle, W. N. Bickford, D. W. Lincoln, C. Paine, S. Allen, W. C. Capron and C. Brigham.

Librarian—C. Harris; *Treasurer*, F. W. Paine; *Secretary*, Dr. S. Flagg.

Mr. J. M. Earle, the former President, declined to be a candidate for re-election.

The Society have resolved to build a Hall the present year, on a lot on Front Street. The annual Exhibition will be held at the same time as the Cattle Show, that is, on the 17, 18 and 19th of September next.

HORTICULTURAL SOCIETY IN VERMONT.—A convention of gentlemen interested in Horticulture, in the Counties of Addison, Chittenden, Franklin and Grand Isle, in Vermont, and Essex and Clinton Counties, in N. Y., assembled in Burlington on the 11th inst., and proceeded to organize a Society There was a large show of fruit, and the specimens very fine, including

many new varieties and seedlings. The following persons were elected officers:—

President—Rev. John Wheeler.

Vice Presidents—David Reed, R. S. Robinson. M. F. Palmer, Buel Landon, J. W. Bailey, M. Watson.

Secretary—Wm. C. Hickok.

Treasurer—Prof. Chaney.

Professor of Botany—J. Torrey, D. D.

Prof. of Entomology—Rev. Z. Thompson.

Prof. of Horticultural Chemistry—Rev. John Mattocks.

Our correspondent Mr. Battey, of Keeseville, was chosen chairman of the Standing Committee, and we have no doubt he will keep us informed in regard to the future progress of the Society. The region of country within the limits of the above counties, is one of the finest for fruit growing in the United States.—ED.

HORTICULTURAL EXHIBITION OF THE ESSEX INSTITUTE, SALEM. This flourishing association, whose Annual Exhibitions we have often given so full an account of, held its Annual Show last year in September, and according to the Report, recently published, it was, notwithstanding the unfavorable season, unusually attractive.

The display of fruit was very fine, especially that of pears, which, for their variety, beauty and perfection, says the Report, may well challenge comparison with any similar exhibitions of the season. Two thousand dishes or baskets of fruit were placed upon the tables, embracing six hundred and seventy varieties, of which *three hundred and twenty-seven* were pears; of apples, one hundred and eighty one; of peaches, including seedlings, eighty-two; of plums, twenty three; nectarines, figs, &c.

The committee remark that a comparison of the exhibition of 1850 with the first of the kind held in Salem, in 1841, "shows a very gratifying as well as rapid increase of interest in the cultivation of fruits and flowers." Three hundred and fifty plates of fruit were then placed on the tables, including only *one hundred and fifty-three* varieties of all sorts of fruits.

Nineteen towns of Essex County were represented, by the contributions of one hundred and ninety-one individuals. The show of flowers was large and fine.—(*Report.*)

ART. III. *Massachusetts Horticultural Society.*

Saturday, January 4th, 1851.—The following annual Report of the Finance Committee was read and accepted.

The Committee of Finance, in accordance with the provisions of the By-Laws of said Society, submit the following Report of its financial condition, as it exists this day, as per Treasurer's accounts, which the Committee find correctly cast and properly vouched:—

RECEIPTS FOR THE YEAR 1850.

Balance in the Treasury, January 1,	\$242 02
Rent of Store,	1,000 00
Rent of the Hall for the year,	561 20
Assessments of Subscription Members,	837 00
Interest of the Massachusetts Hospital Life Insurance Co.,	175 00
Dividend of the Worcester Railroad,	159 00
Coupons of the Conn. and Passumpsic Railroad Bonds,	150 00
Gross Receipts of the Annual Exhibition,	721 50
Receipts from the Treasurer of Mount Auburn Cemetery,	3,292 07
Legacy of the late Theodore Lyman,	10,000 00
Miscellaneous Receipts,	107 24
	<hr/>
	\$17,245 03

EXPENDITURES AND INVESTMENTS FOR THE YEAR 1850.

Taxes on Real Estate,	\$204 00
Painting Hall, and Store repairs,	325 00
New drain and proportion of common sewer,	136 00
Printing and advertising,	307 00
Drafts on Mr. Prestele for plates,	203 87
Expenses of the Annual Exhibition,	544 26
Premiums and gratuities,	1,452 00
Salaries and care of Hall,	476 00
Interest on mortgage,	600 00
Josiah Bradlee, Esq., borrowed money,	1,000 00
Furniture, &c. for Library Room,	415 00
Mechanics' bills, repairs, job work, &c.,	252 00
Insurance,	140 00
Purchase of 53 shares Worcester Railroad Stock,	4,982 00
“ of Bonds of Connecticut and Passumpsic Railroad,	4,930 00
Investment of Bradlee Fund Mass. Hospital Life Ins. Co.,	500 00
Lord's bill of show bottles for exhibition,	87 00
Miscellaneous items,	450 91
Cash on hand December 31st, 1850,	239 99
	<hr/>
	\$17,245 03

OUTSTANDING CLAIMS AGAINST THE SOCIETY, JANUARY 1st, 1851.

Unpaid bills, estimated at	\$600 00
Premiums and gratuities for 1850,	1,500 00
“ “ on former years,	200 00
“ “ for gardens,	150 00
	<hr/>
	\$2,450 00
Mortgage on Real Estate,	10,000 00

ESTIMATE OF THE PROPERTY OF THE SOCIETY.

Real Estate in School street,	\$36,000 00
Furniture, 3 Chandeliers,	\$200 00
2 Bradlee Vases,	150 00
2 marble Vases,	90 00
Jones Vase,	75 00
Glass Ware, &c.,	800 00
Safe, &c.,	250 00
Flower Stands, Tables, &c.,	250 00
Library and Furniture,	1,700 00
Colored Plates for the next No. of Transactions,	203 87
	————— 3,718 87

PERMANENT FUNDS.

Appleton Fund,	\$1,000 00
Lyman " (old,)	1,000 00
Lowell "	1,000 00
Bradlee "	1,000 00
Lyman Legacy, invested in Worcester Railroad, and Connecticut and Passumpsic Railroad Bonds,	10,000 00
	————— 14,000 00
	————— \$53,718 87

In conclusion, the Committee beg leave to state that the Legacy of the late Theodore Lyman has been invested, as they believe, in sound interest-paying Stocks, sure to yield at least six per cent; and that the Bradlee Fund has been filled and permanently located, agreeably to the original design of the donor. In the valuation of the property of the Society, the estimates of fixtures, furniture, &c., have been somewhat reduced, but the real estate, considering the repairs and improvements of the last year, is probably more valuable than at any former period. All of which is respectfully submitted, by

MARSHALL P. WILDER, } Finance Committee.
JOSIAH STICKNEY, }

On motion of C. M. Hovey, it was voted, That the Society confirm the doings of the Finance Committee, in regard to a transfer of Stock made by one of said Committee to the Society.

It was voted, That in addition to the appropriations already made, FIFTY DOLLARS, and ten copies of Colman's *European Agriculture*, be granted to the Vegetable Committee for gratuities, for the present year.

Mr. C. M. Hovey, Chairman of the Library Committee, submitted the annual Report, recommending, in conclusion, an appropriation of one hundred and fifty dollars; which was accepted.

The Committee appointed to nominate a Committee of Arrangements for 1850, reported the names of the following gentlemen, and they were unanimously elected:—

Joseph Breck, Chairman; D. Haggerston, Josiah Lovett, C. M. Hovey, E. Wight, A. McLennan, P. B. Hovey, Jr., E. A. Story, A. Bowditch, W. R. Austin, O. Johnson, L. Winship and A. Parker.

Adjourned two weeks, to January 18th.

Exhibited.—FRUITS: From J. Gordon, very fine Easter Beurré pears, and Hubbardston Nonsuch apples. From J. Washburn, Peck's Pleasant, and Tolman's Sweeting. From Josiah Stickney, fine Minister apples. From D. T. Curtis, Dix pears, in very good preservation. From E. S. Rand, Cross pears. From C. E. Grant, Isabella grapes, in fine preservation. From J. F. Allen, Whortley Hall, Syrian and West's St. Peter's grapes.

January 11th.—*Exhibited.*—FRUITS: From Geo. Jacques, Worcester, handsome specimens of the Sutton Beauty apple; they were, however, not very high flavored.

January 18th.—An adjourned meeting of the Society was held today,—the President in the Chair.

The Treasurer reported that \$3,000 had been received from the Mount Auburn Cemetery, and that the balance would be paid before the next meeting, when the Committee would present their Report.

Mr. H. W. Dutton announced to the Society, that he had the pleasure of presenting the liberal donation of \$150 from Mr. G. W. Smith, to be appropriated to the purchase of books for the Library. Messrs. Dutton, Leach and Cabot were appointed a Committee to report upon the same.

Adjourned two weeks, to February 1st.

Exhibited.—FRUITS: From D. T. Curtis, pears raised at Nahant, and preserved by him, as follows; Seckel, Louise Bonne of Jersey, and Duchess of Angouleme, all in good condition. From F. Tudor, Bezi de la Motte and Duchess of Angouleme, finely preserved. From O. Brewer, unnamed apples. From Hovey & Co., Inconnue Van Mons pears.

Fruits tested by the Committee.—Bezi de la Motte, well preserved, retaining their juice and flavor; Inconnue Van Mons, juicy and pleasant, but not high flavored.

HORTICULTURAL OPERATIONS

FOR MARCH.

FRUIT DEPARTMENT.

MARCH brings with it an increase of labor in this department, and whether a cold or a warm month, still there is much that ought to be done, unless the cultivator is willing to be overworked and hurried throughout the rest of the spring. Commence, therefore, immediately to complete everything which will lessen the hurry of April, always the busiest month to the enthusiastic gardener.

Grape vines in the greenhouse, after the increase of fire heat, caused by the extreme cold of last month, will have advanced rather more rapidly than

is best for their future health, and every means should be taken to strengthen and invigorate the recent growth; air early, and syringe rather sparingly, after the vines are well broken. See that all the laterals are tied in as often as they require it, for a few days' neglect may be attended by the loss of a shoot or bud breaking from its own weight, just where it is most wanted. Vines in cold-houses will begin to break by the last of the month, and care should be taken that the house is seasonably opened and closed. Vines in the open air should all be pruned this month; omitting none, if possible to finish the work. Cuttings or eyes may now be put in, in a good bottom heat.

PEACH TREES, in pots, brought into the vinery last month, will now be setting their crop, and will require careful watering, an abundance of air, and but little extra heat. Famigate for the green fly, and keep a sharp look-out for that pest, the spider.

FIG TREES, now brought into little heat, will commence bearing and mature a good crop.

GOOSEBERRY and CURRANT PLANTATIONS may be made the last of the month, if the weather is pleasant and the soil in good condition. Now is the time to prune.

RASPBERRY PLANTATIONS may be uncovered at the close of the month, unless very unfavorable weather.

PYRAMIDAL, ESPALIER and WALL TREES, of all kinds, may be pruned now, taking advantage of mild weather to accomplish the work. These kinds of trees cannot be hurried over, but if handsome, regularly shaped specimens are wanted, it is a work of no ordinary attention.

ORCHARDS may yet be pruned, if not already done; finish the work by scraping off the rough bark only; not to scarify the trees, as is often done to their great injury.

ROOT-GRAFTING may yet be done with safety.

SCIONS may still be cut, finishing with the cherries first, as they push the earliest. Secure all safely in a cool place, in boxes of earth or moss.

Attend to securing stakes, labels, &c., and do everything to facilitate operations next month.

FLOWER DEPARTMENT.

The severe weather which has characterized the greater portion of the past month, will have rendered our last remarks under this head peculiarly applicable. And the excited state in which a long continuance of fire heat always leaves the subjects under its influence, and the necessity of still applying it to maintain the requisite temperature, renders it necessary for the cultivator to adopt all the expedients at his command, to lessen, at least—if he cannot entirely obviate—its injurious effects. Many imagine that in the earlier months in the year, the plant culturist has little to do, and that the business of his profession is materially curtailed. There may, indeed, be little to do in the garden or in the grounds, but it is an erroneous idea to suppose that the necessity for activity of mind or of body is in any degree

lessened. When all nature is bound up in icy fetters, and all the operations of other departments suspended, then does the indoor department require the more energetic and watchful care—then is the unwearying zeal, and energy, and skill of the cultivator indispensably requisite for the successful culture of exotics.

One of the principal points to be attended to in this month, is the prevention of undue development, or improperly elaborated growth, to which greenhouse, and also what are termed hothouse or stove-plants, are more particularly liable than at any other season of the year. The greater portion of plants cultivated in pots, in our gardens, may be classed under one denomination, since there are scarcely any intermediate gradations of hardiness recognized between the most delicate and the most hardy. This is sometimes the consequence of not having the necessary accommodation, and sometimes of not having the necessary knowledge; for when the former is not afforded, we generally see the hardy and tender—the robust and the weak—the shrubby and the herbaceous, indiscriminately mixed together; natives of the Brazilian swamps are placed alongside of the hardy shrubs from China and Japan. And even the delicate epiphytal flora of the tropics may be seen on the same shelf, and undergoing the self-same treatment as the all but hardy coniferæ of Mexico, California and New Holland. On this account, many fine plants are lost, or perhaps called unworthy of culture, because they make no progress in their growth, and no effort to produce flowers. And when we consider also, that our winters are much colder than those under the same latitude in the opposite hemisphere, and hence more artificial heat rendered necessary, we will see more forcibly how essential it is for cultivators of plants under glass, to exercise especial vigilance at this critical period of the year.

CAMELLIAS.—Excitability should by all means be suspended, or reduced to its minimum amount, by a low temperature and free admission of air. Those that have nearly done flowering should be allowed a period of rest. A few weeks' partial dormancy is of immense benefit to the plants, especially to those that have been forced into bloom by artificial heat. There is always a certain amount of exhaustion after a camellia has bloomed freely; but, when in good health, it is a willing plant, and the wood bud for the succeeding year generally commences close upon the blooming process, if means be not taken to arrest it—which should, if possible, be done. This is easily effected by admitting plenty of air, and withholding the usual quantity of water from the roots of those in the last stage of flowering. They should be watered less frequently, as the last flowers are expanding—allowing the soil to become pretty dry before water is given—but keep syringing daily overhead. Grafting, inarching and other methods of increasing the kinds, may be continued, with those that are in proper condition for these purposes.

CALCEOLARIAS.—Continue shifting these plants into larger pots, as they increase in size. In a batch of seedling calceolarias, some will always be much stronger in their growth than the others, though it often happens that the weakest plants produce the finest flowers. The smaller plants, there-

fore, should be treated kindly, and encouraged as much as possible in their growth. We have generally little faith in the coarse, cabbage-looking plants, for they seldom produce what we call fine flowers. The largest and most forward plants may be shifted into six inch pots, in which they will flower—those in three inch pots may be shifted into four inch, as they may require. We find the best sized pots for flowering calceolarias in, are six inches; if the plants are very strong, they may be placed in a size larger, but very few will require this size. Let the whole batch be kept on a cool airy shelf in the greenhouse, and close beneath the glass.

PELARGONIUMS.—All those intended for spring flowering should now receive their final shift. No good will attend later shifting, if the plants are expected to bloom well. They will now be growing rapidly, in consequence of the application of so much fire heat lately, which renders abundance of room among the plants, and also among the branches of each plant, absolutely necessary. Do not be sparing of the admission of air, during the day, to counteract as far as possible the action of the night confinement. Now is a good time to water with liquid manure, little and often. Plants do not like to be either saturated or satiated any more than animals, so treat your plants as you would like to be treated yourself.

Calceolarias and pelargoniums are especially subject to attacks of the green fly at this season—which must be sharply looked after. See our antidotal recommendations for getting rid of this pest, in last month's Calendar.

PROPAGATION should now begin in good earnest. On the provision now made, the display of summer flowering and bedding-out plants will depend. Those who do not possess facilities for storing, during the winter, the necessary supply for the flower garden, must now multiply all the kinds with rapidity. This work must be carried on during the month, as it cannot be accomplished at any one time. The present month is about the best of the year for general purposes of propagation among all kinds of stove and greenhouse plants.

SEEDS, of the various kinds of annuals, biennials and perennials, should be sown during the month, for planting out in May and June. A good supply of stocks and asters must also be sown, for planting out in beds and borders.

DAHLIAS must now be taken from their winter repositories and examined; if rapid propagation be required, place them in a hotbed, and take off the cuttings when they are about two inches long, but do not cut out the shoot from the tuber—as the shoot will not again spring up, and you deprive yourself of further increase. Old roots, that are not intended for propagation, should not be placed in heat till towards the end of the month—so that they may be just fit to plant out, when the season approaches.

RANUNCULUSES may now be planted, presuming the beds have been previously prepared, and the ground covered with litter to keep out the frost. Choose a fine dry day for planting, and spread a few leaves over the beds until they begin to spring up, or a frame, if convenient—but keep a sharp look out for vermin, which are sometimes very destructive to these tubers at this starving season.

ACHIMENES should all be put in soil this month, as it is easy retarding them by topping. They will come into bloom after the geraniums and calceolarias have done flowering. The better way of treating them is to lay the corms on the surface of the mould in well drained pots, or pans—not covering them, but merely scattering a little sand over them, leaving them nearly half exposed, or very barely covered. They spring much sooner and stronger, and throw up numerous stems instead of one or two—than when they are buried in the soil. Keep the strong sun from shining on the young leaves, especially when they are moist. This also applies to all tender leaved plants.

JAPAN LILIES, HYACINTHS, and other bulbs must be treated as directed in our last month's Calendar.

ROSES that are in a growing state must now be freely watered with weak liquid manure, and the young shoots properly trained. Examine those that are in frames, and see if they are suffering from drought or moisture, and treat accordingly.

HYDRANGEA JAPONICA, for early blooming, may now be brought from the frame, or wherever they may have been wintered, and placed in a favorable place in the greenhouse; head in all the long straggling shoots.

PLANTS, in frames, will need especial attention this month; air freely in all fine weather, and protect from severe frost.

Guard against the green fly, and vermin of all kinds. Air freely, and keep the atmosphere always sweet and healthy. Moisten it in the morning, but let it quite dry towards evening; and at nightfall all the moisture in the house should be dried up. This will enable you to lower the temperature at night, which is of great importance to the health of the plants.

VEGETABLE DEPARTMENT.

With the advance of the season, a press of work accumulates, and unless the gardener is active, and at the same time attentive, he will be likely to overlook some, among the many things which demand his care at this season; and a month lost now is often fatal to the success of a good crop. Where there is much forcing going on, the closest attention is necessary; a sudden change in the weather may destroy all that has been already done. A frame left uncovered too late, or kept shut too long while the sun is pouring his burning rays on the tender seedlings, are each attended with the same fatality to the plants; and constant watching will only insure success.

Continue to sow seeds of radishes, lettuces, cabbages, &c., for a succession, and transplant such of those planted last month as are now of proper size. A few tomato plants put into pots, one in each, and cramped for room, will set their flower buds early, and if turned out in May, will soon show fruit.

CUCUMBERS should be hilled out this month; keep up a bottom heat by good linings, and earth up the plants as they require it. Water freely with water, warmed to the temperature of the bed, and cover thickly with mats or straw, on cold frosty nights. Be careful to let off all rank steam from new made beds; sow seeds for a succession.

THE MAGAZINE
OF
HORTICULTURE.

APRIL, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Ornamental Trees, adapted for Parks, Lawns and
Pleasure Grounds.* By the EDITOR.

HAVING in our last two volumes given our readers select lists of some of the finest ornamental shrubs and most beautiful weeping trees, we now proceed to offer a list of a few of the most desirable forest trees suitable for ornamental planting.

We do not intend to enter into the general subject of landscape planting, or to discuss the importance of giving more attention to this pleasing art. It is sufficient to know that there is a sad want of taste for ornamental planting, all around us, and that it becomes us, as well as all who appreciate the necessity of fostering and increasing a love for beautiful trees, to impress as often, and as forcibly as possible, upon every possessor of landed property, the increased value, to say nothing of the increased beauty, which liberal planting will be sure to add to his estate. It would seem almost a superfluous work to reiterate this fact; but when we notice the bleak and exposed appearance of the numerous villas and cottage residences which have sprung up not only in the immediate neighborhood of our large cities, but which are scattered everywhere throughout the country,—when we see them standing without scarcely any protection, exposed to the glare of the summer sun and the blast of the winter cold, without any attempt to shade them from the one or

shield them from the other,—we are tempted to ask why this should so be? Why so little appreciation of the beautiful in ornamental landscape? Why, with that inherent love of nature which every individual possesses, so few attempts to realize it by art? Why, when so much wealth has been lavished upon the massive Gothic, Grecian, or Italian mansion, or wasted in redundance of ornament upon the more humble cottage, so little has been bestowed upon the grounds around them? Why such buildings should stand with scarcely a tree near them, or at least such apologies for trees as are too often planted, and which, alone, surround too many of our suburban residences? We are, we repeat, induced to ask, why all this gross neglect?

Such, however, is the present state of ornamental planting, and a great improvement in taste must be effected before we can expect better results. Two things, we are assured, have had a great effect to prevent, in many cases, more attention being given to planting; and these have been the want of a general knowledge of the kind of trees suitable for the purpose, and the practical information necessary to insure the welfare and success of the tree. Elms,—elms,—and these alone seem to make up the sum of ideas with too many in regard to ornamental trees. But even elms would not always be so objectionable, if handsome, well-shaped and healthy trees were selected; on the contrary, they are generally miserable specimens, of huge size, torn from their native swamps, with but few roots, and ugly tops, which are made still uglier by cutting them off to bare poles. These are set out, at a great expense, live a year, or linger perhaps for a longer time, when they are dug up and replaced with others, which in their turn undergo the same change, till, finally, after years of delay and loss of time, they begin to grow, and, after a while perhaps, make decent trees.

Now contrast these with young healthy *nursery* trees, whose roots are one mass of fibres, and whose tops, not subjected to the amputations of the saw, or the hacking of the knife, form beautiful and graceful heads. Set these out properly, and they take hold of the ground at once; no mu-

tilation of the branches is necessary,—there will be no replacing of dead trees, and in ten years' time the little elm, maple, or ash, of a dozen feet, will tower up into a full-grown, vigorous and majestic tree, thirty or forty feet high,—always an object of beauty, from the day it was transplanted, and ever interesting from the varied forms which it assumes in its progress towards its complete development.

It is, in truth, lamentable to see how little progress has been made in planting forest trees, for the last thirty years. We believe we state what is true, when we affirm that, generally speaking, notwithstanding all that has been written upon this subject, no very perceptible improvement has been made, especially in *street* planting, during the above period. We have in our eye, dozens of places, where, certainly for more than ten years, the process of planting and replanting has gone on, during this time, and there are now not only numerous miserable looking specimens, but actually gaps in the long rows of trees, which, after having been set out with the *warrantee* of the planter, have been reset and reset, until the disappointed proprietors have given up the task of securing a live tree, for more than one year, as hopeless. Such being, in reality, the condition of tree planting, is there not room for radical reform in this very important branch of rural improvement ?

But we have nearly forgotten that we started with an object to enumerate some of the most beautiful ornamental trees, and not a dissertation on their management in landscape scenery ; and, as our space is limited, we must at once to our subject.

It is, perhaps, unnecessary to premise that our remarks are intended more for the uninitiated,—the new beginner,—than for the experienced planter or professional man. Already the principal portion of all our hardy trees, both native and foreign, should be well known to them, and their merits and defects, in landscape scenery, properly appreciated. To such, our list may appear to contain nothing new,—as indeed there are but few of recent introduction, among the larger class of deciduous trees. The pines, firs, cedars, and other evergreen

trees, to which we shall devote an article hereafter, have been greatly enriched by the addition of new species from the Northwestern coast, from California, from the snow-clad mountains of South America, from the northern parts of Europe, and from the snowy regions of Asia. These, when once generally introduced, will change essentially the features of our winter landscape, and give an additional charm to the scenery of our suburban residences.

OAKS.

It will undoubtedly strike some as rather *outré*, that we should begin with the oak; but, notwithstanding this, we make no apology for doing so. In point of picturesque beauty, as well as utility, it has always been, and probably ever will be, classed first among ornamental trees. Its great characteristics are, the firmness of the wood, the stoutness of its limbs, the peculiar ramification of its branches, the variety, as well as beauty, of its foliage, and last, the longevity of its existence. Gilpin, who has so elegantly portrayed the individual as well as collective beauties of the forest trees of Britain, thus sums up the qualities of the oak:—

“It is, confessedly, both the most picturesque tree in itself, and the most accommodating in composition. It refuses no subject either in natural or artificial landscape. It is suited to the grandest, and may with propriety be introduced into the most pastoral. It adds new dignity to the ruined tower and gothic arch. By stretching its wild moss-grown branches athwart the ivyed walls it gives them a kind of majesty coeval with itself; at the same time its propriety is still preserved, if it throws its arms over the purling brook, or the mantling pool, where it beholds

‘Its reverend image in the expanse below.’”

Milton introduces it happily, even in the lowest scene:—

“Hard by a cottage chimney smokes
From between two aged oaks.”

The species of the oak are very numerous, and Mr. Emerson, in his *Trees of Massachusetts*, describes eleven as

growing in our state. Loudon enumerates in all about one hundred and fifty. Of these, however, we only name a few of the most beautiful, which deserve introduction into all plantations of any extent.

1. THE WHITE OAK, (*Quercus álba.*) This species forms a fine ornamental tree, "beautiful," says Mr. Emerson, "in every stage of its growth; at first, light, slender, delicate and waving; at last, broad, massive and grand, but always graceful." It grows throughout the state, and some fine single specimens are found in Essex county. It likes a sheltered situation, and when so situated it advances with a rapid growth and soon attains a good size.

2. SWAMP WHITE OAK, (*Quercus bicolor.*) This is one of the most common trees in the neighborhood of Boston, where it is found in forests, covering the low moist grounds. But as generally seen it does not impress the observer with its real merits. Crowded in dense forests, or standing in bleak and wintry situations, it forms an ordinary tree, and it is only when growing isolated, in a generous soil and a somewhat sheltered aspect, that its beauty becomes apparent. Its leaves are nearly entire.

3. OVER CUP WHITE OAK, (*Quercus macrocárpa.*) This is, perhaps, the noblest of the oaks for ornamental purposes; its foliage is large, ample and luxuriant, and its acorns, which are of immense size, form conspicuous objects on full grown trees. It is erect in its growth, throwing out its numerous branches horizontally. It is a rare species in this state, and until Mr. Emerson noticed it, it was supposed not to exist here. It is found in Stockbridge, Berkshire county.

4. THE SCARLET OAK, (*Quercus coccínea.*) This species, though possessing less general beauty than the others we have enumerated, is, perhaps, fully as well entitled to an equal rank as an ornamental tree. In spring or summer it has little to distinguish it from the common red or the black oak. But in autumn, when the forest assumes its varied hues, nothing can vie with it in the richness and brilliancy of its scarlet foliage; it is then that it stands out the most conspicuous of all our American trees. To this and the

scarlet maple have the forests of America been most indebted for the fame of the brilliant coloring of its autumnal scenery.

5. THE COMMON ENGLISH OAK, (*Quercus pedunculàta*.) This is a very ornamental tree, more particularly on account of the deep green of its leaves, late in autumn, when it contrasts so verdantly with the brown and yellow tints of the changing foliage of the maples, oaks and elms. It is irregular in its growth, with a spreading head, and soon attains a good size, when planted in good soil.

6. THE FASTIGIATE ENGLISH OAK, (*Quercus pedunculàta fastigiàta*.) A very beautiful and stately tree, so erect in its growth as to resemble a Lombardy poplar. Three or four trees in our grounds, planted six or seven years, and now upwards of fifteen feet high, have attracted great admiration. The foliage, like the parent, holds its color very late in the autumn. As a picturesque tree it is less valuable than the other species; but introduced sparingly into plantations, its conical form breaks the uneven line of round-headed trees, and adds much to the effect of a group.

7. THE PURPLE-LEAVED OAK, (*Quercus pedunculàta purpurea*.) Another variety, novel from the dark purplish tinge of its foliage, which in spring forms a striking contrast with the deep green of the other oaks. A tree in our collection fifteen feet high, and six or eight years planted, produced nearly a quart of acorns, in 1849, from which we have raised several seedlings. It is a rapid growing variety among oaks.

8. THE LUCOMBE OAK, (*Quercus Cèrris Lucombeàna*.) This in Britain is a sub-evergreen variety, produced from seed, by Mr. Lucombe, in 1762. It is there a very rapid growing tree, attaining the height of twenty feet in eight years, and its deep, glossy, finely dentate foliage, its erect and well shaped head, as well as the graceful disposition of its branches, place it among the finest oaks for that climate. Here it does not grow very rapidly, and being rather tender, it occasionally, while young, loses the ends of its annual shoots. Several of our trees, seven years planted, have

not yet grown more than ten feet. We cannot generally recommend it, therefore, until further trial, for this latitude; but south of Philadelphia it must form a most elegant tree.

ELMS.

The elm is so universally known, and so universally planted, to the exclusion of other trees, that it has by general consent become *the* tree for all ornamental purposes. Indeed, one would suppose by an inspection of our principal country towns that we had become elm-mad, to use such a phrase. If a piece of ground is to be enclosed as a public promenade, it must be intersected and surrounded with rows of American elms. If a cemetery is to be laid out, its principal trees must be elms. If a city street is to be planted the trees must be elms; and finally, if the possessor of some little rural cottage with a *yard* in front wishes a tree, it must be an elm. Go where you will, three quarters,—if not nine tenths,—of all the trees are elms. New Haven, from the abundance of its fine specimens, has received the cognomen of the “City of Elms.”

Now as we have already admitted,—and are willing to admit,—that for extensive parks and ornamental plantations, the elm, judiciously introduced, is the “tree of trees,” we by no means would have it inferred that we would plant it everywhere, without regard to place, fitness, or expression of the scene. Mr. Emerson has made no truer remark than that the American elm is so generally planted “that it is possible to be weary of seeing it.” It is so, and we do sincerely hope that when the merits of our many native trees are fully known, this kind of monomania for the elm, to the exclusion of other beautiful trees, will give way to a better taste and a higher appreciation of our oaks, beeches, maples, &c.

9. THE AMERICAN ELM, (*Ulmus Americana*.) To say anything in praise of the beauties of our native elm would be as superfluous as to attempt to “paint the lily,” or “add perfume to the rose.” Milton and other poets have sung the

praises of the elm, but not *this* elm, and it remains a task to be accomplished to portray, in equal power of language, its transcendent merits. Gigantic in its proportions, yet graceful in every curve of its limbs; massive in its trunk, yet light and airy in every sweep of its branches, it shoots up in the shape of a majestic vase, or spreads out its arms in the form of immense plumes. In either of these, or indeed in any of the varied shapes which it affects, it is ever beautiful.

This peculiarity of the elm to vary in its form, is so great that it is an object with our nurserymen to select such as are remarkable for their beauty and perpetuate them by grafting. This could be done without adding much to the expense of raising the trees, and we are sure they would find an increasing demand for all that might be grown in this way.

10. THE ENGLISH ELM, (*Ulmus campestre*.) It is somewhat remarkable that this noble elm has not been planted more extensively in our neighborhood. With the exception of several trees in Boston and Roxbury, very few of this species are to be seen. In Britain this is, next to the oak, one of the most magnificent trees. Gilpin, in his *Forest Scenery*, objects to the English elm, as a picturesque tree, on account of its great resemblance to the oak; yet he remarks that its defects chiefly apply to its skeleton. "In full foliage its character is better marked. No tree is better adapted to receive grand masses of light. In this respect it is superior, not only to the oak and the ash, but perhaps to every other tree. Nor is its foliage, shadowing as it is, of the heavy kind. Its leaves are small, and this gives it a natural lightness; it usually hangs loosely, and is in general very picturesque."

In general form the English elm is upright, having one principal stem, and the branches are thrown off abruptly at nearly right angles. It has none of the drooping habit of the American elm, and its spray is shorter and more dense; in this respect approaching the oak. But separate from its grandeur of form, it possesses another characteristic which greatly enhances its value. It is clothed with a deep green foliage *several weeks* longer than the American elm, being,

in fact, the last to change its color. We have often considered it one of our greatest enjoyments to stroll through the mall on Boston Common, of a sunny afternoon in the last days of autumn, when every other tree was divested of its foliage, and witness these last green leaves "of summer."

The English elm grows nearly as rapid as the American.

11. THE WYCH OR SCOTCH ELM, (*Ulmus montana*.) Another of the foreign elms, a native of Scotland, where it is esteemed as one of the finest trees. Sir Thomas Dick Lauder pronounces it "one of the most beautiful trees in the British Sylva," and "one of the noblest of park trees." It grows less upright than the English elm, forms a spreading head, and its branches are slightly drooping. The leaves are larger, thicker, rougher, and of a darker green than either of the above species. It was from this variety that the elegant weeping elm was produced.

It likes a good rich loam, and in such a situation grows rapidly and forms a beautiful tree.

12. THE HUNTINGTON ELM, (*Ulmus montana vegèta*.) A seedling from the *montana* about a century ago, in Britain. It is one of the most rapid growing of all elms. Trees only ten years old have attained the height of thirty-five feet. It is the best of all the elms for timber. We have several fine trees of this variety, and they are now nearly twenty feet, though only small imported trees four years ago. It is very erect in its habit, with a foliage between the American and the Scotch, and a very smooth clean bark while young. We believe it will become a favorite tree, for ornamental planting.

MAPLES.

The maples, with English writers on trees, have not been elevated to a very high rank, either for their picturesque beauty or utility. Gilpin says it is "an uncommon tree, though a common bush." This may be true of the foreign maples, or such as may have passed under his eye, but with all his nice appreciation of the beautiful in nature, he could have never made this remark had he ever beheld our rock or white maple, in the pride of their full growth and maturity.

According to Loudon, there are but few specimens of the true rock maple in Britain; the largest one mentioned in his *Arboretum* was only forty-five feet high. It does not appear to thrive with its native vigor in that climate.

But, with us, few trees surpass, in the magnificence of their form, the beauty of their foliage, or the autumnal coloring of their leaves, the maples. Towering up to the height of seventy or eighty feet, in the majestic proportions of their fine heads, they fall but little below any of our ornamental trees in their combined or individual characteristics.

13. THE ROCK OR SUGAR MAPLE, (*Acer saccharinum.*) This is the grandest of the family. It rises with a straight stem, and forms eventually a massive and leafy head, sometimes pyramidal, at others full in the middle, tapering both towards the base and top, and again assumes a broad top, enlarging as it proceeds in growth; but, in all its forms, noble, majestic, and beautiful, a fit compeer for the oaks and elms.

The crowning beauty of the rock maple is the varied and exquisite coloring of its autumnal leaves; these change, while yet well attached to the branches, and often before the first frosts, to a chamois, apricot or golden fawn colored hue, brilliant beyond the power of description. Viewed from the shady side a few hours before sunset, on a clear day, they seem like huge columns of golden flame, wreathed into the varied forms of trees, rather than the living specimens.

One thing we must caution the planter, never to set out rock maples unless raised from small trees under nursery cultivation. Trees from their native wilds, unless very small, rarely assume a handsome and pleasing form.

14. THE WHITE OR SILVER MAPLE, (*Acer dasycarpum.*) Michaux, who had seen this tree in its greatest perfection on the banks of the Ohio, thus describes it:—"There, sometimes alone, and sometimes with the willow, which is found along these waters, it contributes singularly by its magnificent foliage to the embellishment of the scene, The brilliant white of the leaves beneath forms a striking contrast with the bright green above, and the alternate reflection of the two

surfaces in the water, heightening the beauty of this wonderful moving mirror, aids in forming an enchanting picture."

The silver maple forms a much more loose and branching head than the rock; the branches are more horizontal, and often drooping at the extremities. It has little or none of the stiff habit of the rock, but throws out its limbs in more flowing lines than the former species. It grows sixty to seventy feet high.

In its rapid growth it is scarcely excelled by any tree; the dimensions of several which we planted in 1844, then three years old and seven feet high, are now eight to twelve inches *in diameter* at the base, and from twenty to thirty-five feet high. We must recommend it as one of the most rapid growing, beautiful, and desirable trees for streets, parks, or pleasure grounds.

15. THE RED OR SCARLET MAPLE, (*Acer rubrum*.) This is one of the most common maples, growing abundantly in all low grounds nearly throughout the state, adding by its scarlet blossoms to the gayness of the spring forests, and setting off their brilliancy by its masses of glowing scarlet foliage in autumn. As an individual tree it has less of the picturesque, or beautiful, than those before named. Its form is rather stiff and clumpy, its leaves small, and its branches have not that capacity for receiving masses of light and shade so characteristic of the oak and elm. But scattered in among plantations of trees, grouped with the rock, the silver, and other species, its autumnal foliage is sufficiently varied, brilliant and striking, to give it a good claim as an ornamental tree. It likes a rich, moist land, and in such a situation grows rapidly and attains the height of thirty or forty feet.

When we commenced our article, it was merely to give a list of some of the best ornamental trees; but our interest in the subject has increased as we proceeded, and owing to its length we must now reserve its completion for another number.

ART. II. *Notes on Several Varieties of Fruits cultivated in Buffalo, N. Y.* By Col. B. HODGE, Buffalo.

PERHAPS a few rambling notes on fruits cultivated here, may not prove uninteresting to some of your readers. It is only by comparing notes made up by individuals residing remotely from each other, that we can arrive at a correct conclusion relative to the value of many fruits to be grown for commercial purposes.

PEARS.

PARADISE D'AUTOMNE has fruited with me three seasons in succession, and has invariably proved very fine and superior, always fair and of fine appearance, very much like the Beurré Bosc in appearance, but generally rather smaller. The flavor is superior, and, to my taste, nearly equal to the Seckel. I do not question but this is to become one of our most popular sorts.

BEURRE' BOSC.—This, too, is a favorite, and one of our most desirable varieties. The fruit growing in clusters, together with its very large leaves, and the rank growth of the tree, renders the whole strikingly beautiful. The fruit has so far proved very fair, of large size, and, withal, productive. In flavor it may be classed as "very good."

GOLDEN BEURRE' OF BILBOA.—This is a most beautiful fruit, and in flavor nearly equal to its beauty. I have fruited it but two seasons, and it now bids fair to take a high rank.

BLOODGOOD has so far proved fine, and one of our most valuable summer pears. The fruit requires to be gathered early, and house-ripened. The same remark will apply to all summer pears. Indeed, I never saw a first rate pear in flavor, taken from the tree when fully ripe.

MADELEINE.—This is an old variety. I received it some twenty years ago under the name of Green Chissel. When it first came into fruit we thought but little of it; all rotted at the core. But we have since found that by gathering early, before it becomes much yellow, it is really our most delicious early pear.

TYSON has not yet fruited in my grounds. Yet it has fruited in this vicinity, and from personal examination, and from information from others, I have no doubt it will soon become popular, and is really one of our most desirable fruits.

SWAN'S ORANGE, or Onondaga, if not as high flavored, yet its large size, productiveness, and fine appearance will, in my opinion, render it, by and by, as popular and as desirable as the Bartlett or White Doyenné.

BUFFUM.—It is well known to many that at the pomological convention at Syracuse, and also at the congress of fruit growers in New York, I strenuously opposed this pear being placed on the list of fruits of first class. I had fruited it several years with indifferent success, and although one of the most beautiful growers in the nursery, yet I had ceased propagating it. The high reputation that many gave it, has induced me since to make further observation and inquiry. I have examined it on the premises of two individuals in this vicinity, who value them very highly; nearly as much so as the White Doyenné, as superior in flavor, and truly valuable. On the whole, I am inclined to retract, in a great measure, my former hostility to this fruit. With high culture and a deep, rich soil, it seems to do very well, and perhaps will prove far more profitable than many of our "superior" fruits.

BEURRE' DE CAPIAUMONT I have fruited for some years in succession, and yet not under very favorable circumstances, and on the whole, I am well pleased with this variety. I esteem it as a valuable variety, of a very rich and delicious flavor.

BROWN BEURRE'.—This old variety is not yet extinct, although the pomological convention, held here in 1848, voted it as "unworthy of cultivation." It is a crooked, scraggy grower in the nursery; but no matter for that; the fruit is fine, and not a few will say, of "a most delicious vinous flavor." "With a deep, rich soil and high culture, it is truly fine; I have several trees of this variety, and shall retain it." This is the remark made to me recently, by a worthy horticulturist, who, at the pomological convention above al-

luded to, moved that it be passed as unworthy of cultivation. Well, fruits change, and men change; we all change; and the great desideratum of us all should be to get right. When we find that we are on the wrong track, let us turn short about. But I must say something about other fruits.

APPLES.

NORTHERN SPY.—This fruit is from year to year rising in public favor. Indeed, it has but few superiors. As an apple for the months of April and May, it has hardly an equal. But few varieties are more productive, and the fruit generally very fair. It is a tree that requires rich, high culture, but no more so than the Fameuse, or Early Harvest, or many other varieties. The tops of the trees of the Spy are inclined to grow compact and rather dense; require thinning out so as to let in the sun and air among the branches. With the head of the tree no more dense than the Esopus Spitzenberg, or Fall Pippin, and I believe the fruit will always prove fair. I notice it has fruited near Boston with indifferent success. However, I trust it will yet prove fine even there. Certainly, in Western New York, it is one of “the apples.”

BALDWIN.—This apple is just as fine here as it is in its own New England, and although in some parts of Ohio it is said to be subject to the bitter rot, yet I am informed that in Illinois and Wisconsin it succeeds well. Here it is one of our most productive sorts; fruit always fair and fine. The Northern Spy, Baldwin, Roxbury Russet, Rhode Island Greening, American Golden Russet, English Russet, Esopus Spitzenberg, Winter Swaar, Ladies Sweeting, Danvers Winter Sweeting, are among our most highly valued winter apples. All prove fine and productive. The Newtown pippin has not, heretofore, succeeded very well here. But latterly, with high, rich culture, and deep soil, some fine specimens have been produced. Some beautiful specimens of this fruit have been sent to me from the valley of the Maumee river in Ohio, and Mr. Griswold of Maumee assures me that on the fine deep soil there, it succeeds admirably, and is one of their most valued fruits.

SUMMER ROSE.—A most beautiful high flavored apple ; requires to be gathered early. If left too long, the fruit will often crack open. It is not productive, and the trees make but a moderate growth.

RED ASTRACHAN.—This, too, is a most beautiful apple, and has been very highly recommended. However, not a few have been disappointed in the fruit, and have pronounced it inferior. The fact is, that when the fruit is left on the tree and becomes over-ripe, it becomes mealy and insipid. But when gathered early, and house-ripened, it is a most desirable and valuable apple. I am right glad to see your remarks in favor of the Hawthorndean apple. One of our pomological conventions condemned it as unworthy of cultivation. It is one of the most productive early bearers ; fruit good, but not first rate. I had intended to make some remarks on some varieties of the cherry, but my sheet is full.

Buffalo, Feb. 1851.

We are exceedingly glad to introduce Col. Hodge to our readers through so excellent an article as the above, and we trust we may not only have his proposed communication on several varieties of the cherry, but that we may often welcome him to our pages. A more careful, observing, and practical nurseryman we do not know, and his remarks on several of the above pears, which he has heretofore thought undeserving of general culture, but which he now, after further trial, has ascertained to be valuable sorts, shows that he is not blinded by the prejudices which govern too many of our cultivators in reference to many fruits. The discussion on the Buffum pear at the New York meeting of the pomological congress we have already given, (Vol. XVI,) to show our opinion of what we consider the good qualities of a pear, and though, as Col. Hodge says, he then opposed its being placed among the sorts worthy of general cultivation, the observations which were made induced him to look into the merits of the variety, and the result has been that he withdraws all his former "hostility to this fruit." This is as it should be, and if those gentlemen who pronounced the

Brown Beurre' pear, and the Red Astrachan and Hawthorn-dean apples nearly worthless, would make the same careful observations, they will, we think, withdraw *their* hostility to those excellent varieties.

ART. III. *On the Cultivation of the Scotch Kale.*

By J. E. TESCHEMACHER, Esq.

IT would certainly be an advantage to see our markets better supplied with winter vegetables than they are at present. I therefore beg to recommend the cultivation of the Scotch Kale, to the market gardeners in this vicinity, and offer to you for publication the following particulars.

I have this year made a thorough experiment by cultivating nearly one hundred heads, and have consequently enjoyed this fine vegetable twice a week, from the middle of November to the middle of January, cut fresh from the garden, where it stands unprotected, although the thermometer has several times indicated a temperature approaching to zero. There is also every appearance of an abundance of young sprouts, which will be at least as early as asparagus. The following has been my method of cultivation. Sow, the middle or latter end of May, a small bed on a moderately rich soil but in a well exposed situation; strong plants cannot be obtained from seedlings grown in the shade. When the young plants have six or eight leaves, prepare a piece of well-manured open soil, plant the young seedlings six or eight inches asunder, water well and shade for a few days against the hot sun; about one hundred plants are enough for a family. Towards the latter end of July, or middle of August, they should be thick, stocky plants, fit for final transplanting to the spots where they are to remain. I generally plant them in the lines from which my early crop of peas has been removed. The ground must be well manured, and the plants moved singly and carefully, with as much earth attached to the roots as possible; this last precaution is very necessary in all summer

transplanting, as the only means of enabling the plants to bear the hot sun. In a garden, they should be well supplied with water for a few days; but in field planting, where this is not possible, a moist time should be chosen. They will not show much signs of growth until the cool nights prevail; after that they will grow rapidly. They will not boil tender or with much flavor until they have had a good freeze, say a temperature of about 28° Fahrenheit. As the best vegetables may be spoilt by bad cooking, I will add the necessary details on this subject also.

The tender upper part alone is eaten. About four heads will make a dish for six persons. They are often but not always frozen when cut, and when this is the case, they should be put into a cool cellar or in cold water until the frost is out of them. It will take one half to three quarters of an hour to boil them tender; put them into the boiling water, to which add a lump of soda; this rather softens them and causes them to retain their green color; when done, press the water thoroughly out, chop them up with a knife, put them into a vessel to evaporate still more water; eat with melted butter, pepper and salt. If any remain, it is rather better the second day, warmed up with a white sauce, the temperature of the season preventing all injurious change in the vegetable juices. In Germany they frequently boil a few chestnuts and chop up with the kale, between which and the stem and stalk of the kale, it is difficult to perceive any difference in taste. The beautiful curly leaves of the kale are quite an ornament to the garden, and they retain the dew drops in such profusion, that in the morning sun they resemble masses of the brightest diamonds.

Sea Kale (*Crambe maritima*) should also be in our markets in April and May; it is very easily cultivated, and when well grown and cooked, is a wholesome nutritious vegetable. Those who have manure from stables could force and blanch it without trouble, by the use of pots made like garden pots, with a hole large enough to insert the arm in order to cut the produce. These pots are inverted over the plants, the holes stopped either by a cover made on purpose, or by a piece of

board ; the hot manure is then piled on the top ; the heat soon forces the growth, and vegetating in the dark renders the plant tender and juicy. It is boiled and eaten like asparagus. It is surprising what immense quantities of this vegetable are sold and consumed in England ; there is no reason why we should not enjoy the same luxury.

Boston, March, 1851.

ART. IV. *The Principles and Practice of Grafting.*
From the Gardener's Chronicle.

NO. II. ANALYSIS OF THE KINDS OF GRAFTING AND BUDDING DESCRIBED IN THIS WORK.—As the modes which I propose to describe are chiefly intended for the propagation of plants, I shall only briefly notice those of grafting by approach, or in-arching, by which sometimes useful and agreeable picturesque configurations are produced ; but, in demonstrating those employed for propagation, I shall point out the operations applicable to the principal forms which amateurs may wish to produce.

I have included in one group all the kinds above mentioned, without confining myself to the various sections, in which they have been classed by our great masters. Those by scions comprise the principal modes of cleft grafting, whether on branches or roots ; and they are divided into two sections. The first, treats of all those in which the stock is considerably larger than the scion ; the second, those in which the stock and scion are equal in size at the time of performing the operation. Crown grafting and side grafting belong to the same group.

Then we come to those which our great master has united under the denomination of budding (*greffe par gemma.*) I shall only include such of them as are the most useful and most easily executed ; as, firstly, some of the principal varieties of shield budding ; and, secondly, those of flute budding. The numerous details which I am about to give on each of these modes will, I hope, be sufficient to enable my readers

to propagate all the sorts of plants to which these modes are applicable.

SECTION I. GENERAL OBSERVATIONS ON INARCHING.—Inarching (*Grefte par Approche*) is distinguished from other kinds of grafting by the circumstance that both the individuals intended to be united live on their own roots, and mutually co-operate in forming a union. Such unions have different uses; they may be effected for permitting both individuals to live together during their united existence; or they may have for their object the transferring of valuable species to stocks of a hardier and more vigorous nature, proper to maintain them independent of the parent plant, from which they are separated after they have taken on the stocks.

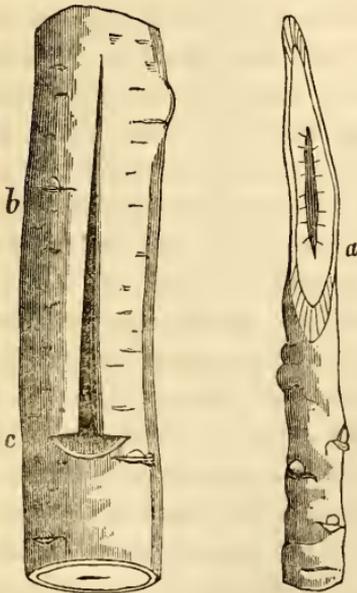


Fig. 9. Inarching of Stems.
(Graft Michaux.)

It is thus that we propagate many fine trees and shrubs, which cannot be propagated by other modes, or at least not by any that are so well adapted for bringing plants rapidly to fruition. By means of some of the modes of inarching we can make our large trees assume, in our parks and forests, very agreeable and picturesque forms; and they may be made of more extensive utility for producing curved and angular timber, exceedingly useful for the navy, and in the arts.

The modes of inarching are very numerous. M. Thouin has described thirty-nine of them. To demonstrate all these would carry me far beyond my present object. It appears to me sufficient to make known all those which may be most usefully turned to account, and practice will supply all the varieties which may be derived from them, and which have only received different

names in consequence of their application to various positions and different stocks.

Inarching is best performed when the sap is in full flow in spring. All the modes of it require ligatures, and some little apparatus, necessary for bringing the respective portions into the desired form; all these ought to be carefully looked after, in order to prevent strangulation and overstraining.

In stocks of high dimensions, destined to form curved timbers, &c., we should take care to allow some weak shoots and branches to grow along the stems, in order to increase their thickness; without, however, robbing the parts operated upon.

INARCHING OF STEMS, for the purpose of supporting and invigorating them, see *fig. 9*. (This is a modification of that described by H. Thouin, under the denomination of *Greffé Michaux*.) *Operation*.—Select a strong tree, near which there is a slender one of the same kind, or if not, plant one, and when it is well established, bend it against the stem of the stock, in order to determine the most convenient place for the union; there cut off the top of the weaker, and thin the end like that of a flute, but more slanting, *a*; make in the bark of the stock, *b*, two incisions, which, together, form a T reversed, **J**, at the bottom of which remove a small portion of bark, forming a semicircle, such as may be seen at *c*; then that above will be easily raised for introducing the extremity of the prepared portion, *a*, the cut surface of which will rest on the alburnum, and on which it should be immediately fixed, by means of stays and ligatures; and if the inarched tree, *b*, is large, and exposed to the action of the wind, the operation is secured by means of one or two nails, driven through the part joined, so as to afford the greatest resistance.* This inarching may be repeated on the same individual, when there are subjects adjoining that can be adapted. We may also apply it by bending the flexible

*There is no danger in using nails in this and some other kinds of inarching; they are overgrown by the new layers of wood, without any bad effects from their oxidation. I have had ocular demonstration of many of these inarchings, after the operation had been performed seventeen years, and can therefore vouch for the correctness of these assertions.

branches of trees to their stems, and inserting their extremities in the manner above indicated. This application, and also the preceding, are very proper for forming bent timber for the purposes already mentioned.

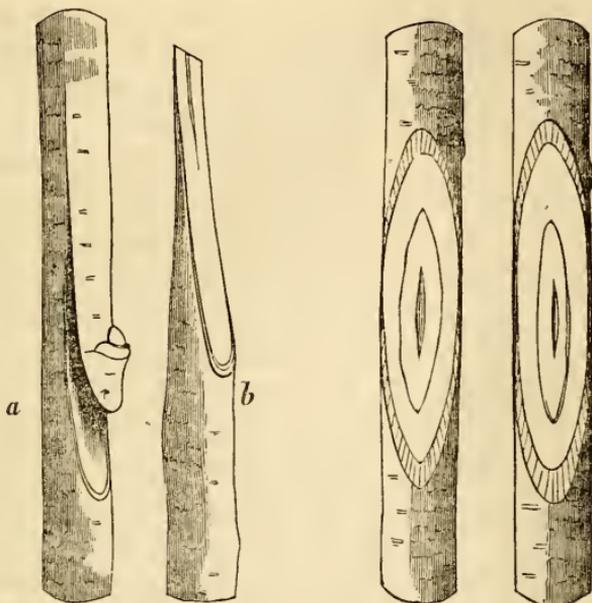


Fig. 10. Inarching on stems or branches.

Fig. 11. Hymenial Grafting.

INARCHING ON STEMS OR ON BRANCHES; *fig. 10* (*Greffe Monceau of Thouin*).—This mode of inarching may be employed for the same purposes as that of the former, or Michaux inarching; and it answers better for the propagation of evergreen plants and others; but in all cases in which it is adopted it is better to operate with wood of one or two years old, and that the portions joined should be of the same age and thickness.

Operation (*see fig. 10.*)—Prepare beforehand a stock, of which the dimensions shall be regulated by the place where we would wish to join it to an allied tree, of the same thickness; make in the latter a cleft through the substance of the young wood; it should be made from below upwards, and prolonged even to the medullary sheath, dividing it into two nearly equal parts, (*see letter a,*) then the other (*letter b,*) is cut long wedge-shaped, for being inserted into the cleft, so as the whole may perfectly coincide.

When we wish to employ this mode of inarching for propagating rare plants, difficult to unite by other means, we rear the stock in a pot to the height which the plant to be inarched may require. When well taken, the inarched portion is detached from the parent plant, to form a distinct individual, depending entirely on the stock, which has no other merit than that of being vigorous, and of belonging to the same family as the species we wish to increase.*

HYMENIAL INARCHING (*Grefse Hymen*;) *fig.* 11.—This may be employed for the same purposes as the preceding; if it be intended to form *kiosks*, pavilions, or arbors in gardens, or elsewhere, we may unite three or four trees. I have inarched some in this way, under which a coach could pass in every direction. It may be practised more simply with two subjects, such as are represented in the engraving, and in this way they may be used instead of posts for rural gates or doors.

Operation.—Prepare two plants or trees of the same height and thickness; bring their tops together at points where they readily touch, in consequence of a slight bending; cut from each of them at this place a longitudinal slice, of equal dimensions, deepest in the middle, where it should raise a small portion of the medullary sheath; thus prepared, the two cut surfaces are united, so as to mutually cover each other, and they are then firmly secured by means of ligatures, &c. If the parts are of the thickness of the little finger, and this should be the maximum, their consolidation would be aided by a wire nail, driven through the junction. If the tops of the respective trees thus inarched are intended to form an aggregation, some precautions are necessary for preserving an equilibrium in their vegetation. In employing this mode for the propagation of rare plants, these are suited with young stocks of kindred species, reared in pots, &c., and as soon as the organic union is well formed, the head of the stock is cut off a little above the union; the sort inarched upon it should be separated from the stool or parent plant, by the proceeding indicated in treating of the previously explained mode of inarching.

*This separation or *severage* is often prepared for by a notch, or what is better, an annular cut, which renders the final separation less hazardous.

ART. V. *The Cultivation of the Cantaloup Melon, at Angers, France.* By B. DESPORTES, of M. Leroy's Nursery, Angers.

THE city of Angers is renowned throughout France, for the mildness of its climate, for the excellent quality which all kind of fruits acquire, and for the progress that has been made in horticulture of late years.

Until very recently the only variety much cultivated at Angers has been the ribbed Melon, called Melon of Freneur, which although pretty good, has not however attained always the superior quality of the Cantaloup Melon. I resolved therefore to try the cultivation of this kind. I followed for this purpose the *Loisel* method. I selected from M. André Leroy's nursery garden a piece of ground of about six hundred and seventy-five superficial feet; that is to say, fifteen feet wide and forty-five long; this ground had been all the winter in a very bad condition, beaten and trampled under foot by a great many workmen; towards the end of March, I had it covered with good horse manure, and dug up in large lumps, so as to expose it to the atmospherical influence. Two weeks after, I had these lumps broken up as fine as possible; I had the earth covered again with older manure than the first, and had it dug in furrows towards the 20th of April; these furrows were levelled and the lumps which had escaped the first operation were broken up with great care; this earth was perfectly stirred and dug about thirty centimetres (about one foot) in depth; the weather having become fine towards the end of April, I profited by it to establish my plants in the following manner:—

The ground, fifteen feet wide, was divided in two parts by lines which crossed it, its whole length, from north to south. Upon each of these lines I had the earth, to the depth of four inches deep and eighteen inches in breadth, thrown aside in order to use it later: I filled these trenches with manure, and formed ridges eighteen inches high; I covered it, over all its surface, with about six inches of the earth well pre-

pared, of which I have just spoken; I still added to it three or four inches of excellent earth, composed of very old manure mixed with good fresh loam. These beds newly made are about two and a half feet high, but they experience afterwards a considerable depression, on account of the quantity of manure. They resemble large ridges about six feet broad at their base, and eighteen inches at their summit.

The manure which I use in preference for these beds is that of horses, while it is yet very little decayed and lately taken from the stable; if there was a part of it just from the litter, say one-third or one-fourth that portion, being mixed with the other in a hotter state, the bed would not be less useful for it. In that case it must be watered in order that it should be well decomposed. It will soon begin to ferment, and to give sufficient heat to hasten the vegetation. The bed being well prepared, as has just been stated, I sow my seeds, or, I set out young plants, having two or four leaves, which have been raised in the hot bed towards the end of March; I cover them afterwards with a glass (in the form of a bell) which I close tight; at least for those that have been sown, so as to avoid the introduction of the exterior air. I shade it if it is necessary during the great heat, to prevent the rays of the sun from burning the young plants, which are yet very tender. In order to obviate the accident which might result from the neglect of shading them, I wash over the inside of the glasses with black earth, diluted in water; this precaution suffices in part to intercept the rays of the sun; although leaving the light to penetrate into it. After four or five days, when the young melon plants have taken root, and the weather is fine, I give a little air in the middle of the day, by raising the edge of the glass, on the opposite side of the wind. The next day I give a little more, and I continue to do so until the vines and leaves fill the interior of the glass and are no longer able to grow in it. I then raise the glass four inches above the ground, and keep it in that position by the help of three small bifurcated sticks. If the weather continues unfavorable, I lower down the glasses, as low as possible, in order to guard the

young plants from the rain and cold, which are always hurtful to them; if I can, I intercept, under these circumstances, all communication of the exterior air with that of the interior. I take these same precautions every evening while the plants are yet young and tender. I cover the glasses during the night with straw mats, or very coarse cloth, in order to preserve the heat which has been concentrated during the day. These trifling cares, which at first appear of very little importance, produce, nevertheless, astonishing results, which I have several times been able to appreciate. In damp years I leave on the glasses until the perfect maturity of the fruits, raising them from four to five inches above the plant; in dry years I take them away only on account of the great heat, and when *a coup de Soleil* would be apprehended. When dryness begins to be felt and the branches can no longer find room under the glass, I cover the furrows with long strawy manure, in order to prevent the sun from burning the young roots, which are near the surface of the earth, and which are extremely tender.

I have observed that the roots grow twice as quick as the stems. The use of manure has still another advantage; it is to prevent the earth from becoming hard, and to keep it always in good order. Having constantly followed Loisel's method, I put over the first furrow, glasses, at a distance of six feet, and my two plants under each. Over the second bed, on the contrary, I kept the glasses at only three feet, and put only one to a plant.

The earth in which these melons were planted being in good condition and the bed giving heat enough, they all grew with great vigor; but the fruits did not grow rapidly, and as soon as they appeared they fell off almost instantly. The second furrow, the one on which there was but one plant under each glass, was not long before covering itself with beautiful fruits, whilst over the first, where there were two plants under each glass, there was nothing yet, although each received the same care. I examined them with attention and perceived that the small fruits perished while growing; they were stifled by a multitude of vines, which crossed

each other in every way, and which were obliged to etiolate in order to have space and air. I then decided to have only one plant under each glass, and to pluck up the other, though it had already made twelve or fifteen shoots from three to four feet in length; only three days after this suppression I saw fruits forming and growing visibly. Henceforth, the plants being single at six feet distant from each other, they made a considerable growth, and the produce was equal to the vigor of the subject. The variety which I cultivated in preference, was the silver white *Prescott* melon, which gives the most abundant product, and the finest fruit.

Here is the table of fruits which I have gathered, and the weight of each; you will be able to judge by these fruits of the abundance of the harvest. One row of seven plants, every one of the *Prescott* Cantaloup melon, white color, planted at the distance of six feet, yielded—

2	fruits,	weighing	18	pounds	each,	-	-	36	pounds.
3	"	"	16	"	"	-	-	48	"
7	"	"	14	"	"	-	-	98	"
8	"	"	12	"	"	-	-	96	"
10	"	"	10	"	"	-	-	100	"
6	"	"	8	"	"	-	-	48	"
5	"	"	6	"	"	-	-	30	"
2	"	"	4	"	"	-	-	4	"

43 fruits, produced by 7 plants, weighing 460 pounds.

On the second row, there were sixteen plants, almost all the white *Prescott* melon, excepting some large cantaloupes, of Paris, equally good and fuller than the first; the plants were placed at three feet distance:—

On this second row, there was,

2	fruits,	weighing	16	pounds	each,	-	-	32	pounds.
6	"	"	14	"	"	-	-	84	"
15	"	"	12	"	"	-	-	180	"
20	"	"	10	"	"	-	-	200	"
12	"	"	8	"	"	-	-	84	"

7	fruits, weighing	6	pounds each, -	-	42	pounds.
6	"	"	4	"	"	- 24 "

68 fruits, produced by sixteen plants, 646 pounds.

In recapitulating these numbers, I find that 23 plants have produced 111 fruits, weighing together 1106 pounds, making an average for each plant, of 5 fruits of 10 pounds each, or about 50 pounds from each plant.

I have thought that it might be useful at the same time to place before the eyes of the reader, the expense incurred in order to obtain this result :—

Location, (or hire) of the ground,	-	\$1	00
Manure used as I have described,	-	4	00
Vegetable earth	- - -	2	00
10 days' labor,	- - - -	3	00
Seeds,	- - - -	50	
Sundry expense,	- - - -	50	
			<hr/>
	Total,	\$11	00

In this estimate, the value of the bell glasses is not considered ; the expense being once made, they may be used for a long time. These prices, however, are the maximum. The same result might be obtained in economizing a little, but all these things being found in abundance in M. André Leroy's establishment, I have spared nothing.

During the summer season, I water three or four times in order to moisten the ground deeply, and every evening I give the leaves a light sprinkling, (or syringing,) in form of a dew, and leave the glasses suspended above the plants. I never pour the water directly upon the plants, but apply it so that the bed shall be equally moistened. When the young plants have made four leaves, with the two cotyledons, I pinch out the young shoot, so as to develop and give strength to the stems on the two leaves opposite these cotyledons, and all young shoots, afterwards, are carefully suppressed.

These stems are themselves pinched off when they have three eyes. There then grows on each of these, three branches ; upon these, the rudiments of fruits sometimes appear,

it is true ; but, generally, they do not hold on. These branches should also be pinched at three or four eyes ; then the same number of shoots will grow out, upon which the first fruit sometimes hold ; subsequently other stems and other fruits appear, in great number. It soon happens, when the plants are vigorous, that there is a superabundance of vegetation and confusion in the vines ; I then suppress those which have produced abortive fruits. I pinch out those which grow with too much vigor ; but as soon as there are two or three fruits well-formed, the vines grow less vigorously, the sap being required for the swelling of the fruits. After this there is but little more to do to the plants, as regards their size (or shape.) In the beginning of vegetation a great quantity of small fruit grows, which disappears almost immediately, but this is of no consequence ; there will always remain a sufficient number, and proportioned to the vigor of the plants. Some cultivators, particularly those most renowned in the capital, (Paris) leave but one fruit on each plant, or at most two, in order to have them finer. I proceed differently, and suppress only those which are deformed, or which do not appear disposed to grow finely. Notwithstanding this, I have had frequently four fruits of fifteen to sixteen pounds each per plant, without counting the small ones. I think that this number may be left, provided they are very large, as many as will grow when the plants are vigorous.

A melon, when it is well-formed, will require about forty days in order to arrive at maturity. These fruits gain in quality when, after being gathered, they are placed in a cellar for two or three days. It is not best to wait until they are entirely yellow before they are gathered, but as soon as the stem begins to loosen itself, it is a certain sign that the fruit begins to ripen.

I have remarked that the nearer the plants are brought together on the bed, the earlier the fruit. Whilst, on the contrary, they are much later, but become larger, if they are farther apart.

Of the melons planted and sown, at the end of April and beginning of May, I have gathered the first fruits to-

wards the 15th of July, and they have continued to ripen successively until the end of September; the last were as good as the first.

The bed, on which the plants were but at a metre distant, is the one which has given me the first fruits, whilst that, where they were two metres apart, has preserved itself the best, and has given the last ones. Some of those which formed after the maturity of the first, weighed still twelve to fourteen pounds.

It results, from the preceding observations, that in order to have early fruit, it is necessary to plant the roots very near each other; whilst it is necessary to plant them farther apart, if one wishes to have finer fruits and later in the season.

In the first case the bed must be made in the direction from east to west, and inclining towards the south. In the second, it should be in the form of a large furrow and run from south to north.

Angers, Dec. 1850.

ART. VI. *On the Treatment and Cultivation of Orange and Lemon Trees.* By R. B. L.
(Continued from p. 130.)

THE best soil in which to grow orange and lemon trees is good rough turfy loam, well enriched with rotten cow dung, or stable manure; dried night soil is an excellent ingredient for this class of plants. The whole should be well incorporated together by frequent turning. As people have very different notions regarding the mechanical texture of soil, it is necessary that we should here make ourselves fully understood by explaining what we mean by good turfy loam. This expression, as used by gardeners, relates to the mechanical structure of the mass, or the lumps composing the mass, and not to the degree of richness, or quantity of nutritive matter which it contains. The loam being the prime basis, or chief constituent of the mass, it is necessary that its qual-

ities should be of that sort to fulfil the conditions required of it, which are chiefly the permeation of air and the percolation of water; and the soil should be so constituted that both these may go on with rapidity, and without interruption.

The kind of loam, therefore, which is here designated, is not of that common kind which is generally termed good garden loam, or soil which is the result of a heap of sods which had been dug, a spit deep from any grass field, and laid in a heap for years, till the whole had become decomposed and disintegrated like common garden soil. It has none of that quality which, according to our meaning of the phrase, would entitle it to the name of good turfy loam, and therefore is not the loam which is here recommended, though it is the kind which is very generally used. What we call good turfy loam, is turf cut from an old pasture field, and not more than one year old, that is, one year in the heap. The depth to which the turves may be cut will depend on the age of the pasture, and quality of the soil. If the sod be only a few years old, it will not make good loam if it is cut more than two inches thick. If the pasture be very old and the soil good, it may be cut four or five inches thick. It should bear to be thrown about by the hands, and the more friable earth that falls away from it, in the operation of carting, the better, as it is only the sod that is wanted. It should be laid in heaps, so that the grass surface will be inwards, to destroy the vitality of the vegetation, and nothing more. You do not want it to decompose and crumble down into a state of friability, as it would do by lying a number of years, for then it is no longer turfy loam, and hence is no longer fit for the purposes of potting.

Some cultivators do not like to use fresh loam, or lately cut turf, for potting; indeed, some would-be-practicals attempt to scout the idea of using loam, unless it has lain its probationary period in the compost heap; it must lie quarantined for a few years before it can be used; for what practical purpose I should like to know, and hope some one, who is better informed than myself, will give your readers his

reasons for doing so. My own opinion is, that loam is in its primest condition for potting as soon as the herbage is sufficiently decayed to prevent its growing in the pots, and I have acted on this method for many years, with the best success.

In using the turfy loam for orange trees, it should be chopped with a spade first, then the enriching ingredients in their requisite quantities laid beside it, and turned two or three times to mix them thoroughly. The soil should not be made too rich, especially for plants in an unhealthy state; plants are not unfrequently destroyed in this way. The assimilative powers of the plants are weak, and the roots are in a condition of comparative inactivity, and therefore the richness of the compost in such cases, instead of increasing their healthiness, only hastens their decay.

The different species of the citron family are all easily raised from seeds, which should be sown in the beginning of March in pots or boxes, well drained, and filled with a mixture of loam, leaf mould, and sand; press the soil firmly together, and plant the seeds into holes made with the point of the finger, about half an inch deep, and as much apart from each other. Place them in a common hot bed, and keep them quite dark until they begin to vegetate, for the exclusion of light facilitates the development of the seeds. When they have fairly started, they will grow rapidly, and must be potted in small pots, singly, to encourage the growth, and they should be allowed to remain in the same pots during the season. In the fall they may be taken into the greenhouse and wintered with the other plants. In the following spring they should be potted in larger pots, and kept growing freely during the season, and in the fall you will have fine strong plants ready for grafting.

The orange seldom bears well when raised from seed, and, unless the plants are grafted when two or three years old, they will keep growing luxuriantly for many years without bearing any fruit. They are now much propagated by cuttings, which flower and produce fruit very early, and for a few years will do well, but they never grow to a large size

or produce fine fruit. The trees ultimately become unhealthy and stunted, and fall into a sickly state, beyond hope of recovery. Those purchasing orange trees should secure plants grafted on sound, healthy stocks; should they give double the price for them, they will increase in value as they grow in size, and will be cheaper in the end than those bought for half the amount.

There are several kinds of orange trees that do not thrive well on their own roots, and when once these become stunted and diseased, it takes much trouble to bring them again in good condition, and if they are in the possession of those who have not the necessary accommodation for managing them, the expense of their restoration, even if successful, will exceed the cost of good plants. With grafted plants and some kinds of seedlings there is a better chance of success, and unhealthy trees, even if very old, may be restored to good condition, under proper treatment; and this will be more our present purpose than the propagation and culture of young plants.

The time to commence the operations with the view of regenerating old plants is the spring, and one object is to prevent them from starting their feeble growth too early, as the root, if possible, should be started first. They should be turned out of their tubs or pots, and all the old soil shaken away. The roots should be washed clean, with soft water, some of which will be found black and rotten; these must be pruned away. Head in the top in proportion to the size and healthiness of the root, and repot the plant in fresh soil, with very little manure in it. Avoid setting a small rooted plant in a large pot or tub, as nothing is worse than having a large mass of soil unoccupied by roots. In such case the pot should be large enough to receive the roots when properly laid out, but nothing more, and should be filled one-fourth with crocks, pieces of brick, sandstone, or charcoal; pieces of similar materials should be plentifully mixed with the soil in filling up round the root, as they tend to prevent stagnation of water, of which no plant is more impatient, and which, in nine cases out of ten, causes the death of

orange trees. The soil should be well watered after the potting has been finished, which will settle it round the roots.

Now where are they to be placed? Not out in the sun, for there they will be scorched and dried up before they have time to form any roots. Not under trees, for, though a common place, it is yet about the worst place for plants that can possibly be chosen. Choose a sheltered corner on the north side of a house, or a wall, or a fence of any kind; enclose a space, with posts, large enough to hold all your trees; place a few boards on the inside of the posts, and fill up the same as a common hot-bed, with leaves, manure, old tan, or anything to raise a slight bottom heat. Make this bed three or four feet deep of the fermenting materials, and when the heat begins to rise, it is fit for plunging in the newly potted orange trees. The bed should be ready at the time of shifting, and therefore should be made up a week or ten days before you begin to shift; plunge them to the rim of the pots, and let the tops be fully exposed, except there be a likelihood of frost at night, when they may be protected with mats, or any other covering at hand.

Syringe them every morning and evening, if not too cold, or likely to be a frost, and water sparingly till they begin to make young growths, when it may be more liberally applied.

The advantage of this method is obvious. It is not every place where you can command a house with bottom heat, in which to plunge large orange trees; and if this method be rightly carried out, it is better than a house. The trees have heat to stimulate the roots,—the grand desideratum,—without a previous, or even a simultaneous stimulation of the top, the grand panacea of exotic evergreens. In fact, the roots grow more than the branches, and this is just what is wanted, and it is the only way to get a healthy, fruitful tree; the roots are under the influence of an equable temperature, while the top is exposed to the free air.

I will here mention another fact in regard to the orange. It is very susceptible of the kind of water which is given to

it, and dislikes that which contains any kind of astringent mineral substances. Rain water ought always to be used, both in syringing and watering, and it ought to be nearly of the same temperature as the earth in which the plants are growing. Spring water very frequently holds in solution mineral substances very deleterious to the orange, as it does to all other kinds of plants grown in confined receptacles, for they must take the kind that is given them, whether it does them good or harm. Rain water is the softest and purest liquid we can obtain. It is what nature supplies for the sustentation and support of the vegetable kingdom, and we ought to imitate nature as near as we can in all our horticultural operations.

There are numerous causes which, either individually or combined, produce sickliness and disease in orange and lemon trees, and on examining an unhealthy specimen of either, it is sometimes difficult to define the cause without knowing the treatment to which it has been subjected. Many kill them with kindness, and many more with neglect. Some, through ignorance, give the plants too little water when they require most, and others keep the soil continually saturated, until the roots are rotten. Some will turn them out of warm rooms into the open air, when they are in a tender, etiolated state; others will keep them in close, confined apartments and impure atmospheres, till every branch and bud on the plant re-echo, with a species of vegetable instinct, the miserable wail of Sterne's starling, "I can't get out," "I can't get out."

The following are probably the most frequent causes of unhealthiness, and which, under all circumstances, may be considerably alleviated, if not entirely avoided. Too little water when they are in a growing state, and too much when the plant is in a state of dormancy. Too sudden changes when the plant was in a state of vital activity, and too little atmospheric air for its healthy development. Too much fruit upon the tree when it is weak, and letting it hang to ripen, which tends very much to exhaust the energies even of a healthy plant. One or the other, and not unfrequently

all of these causes combined, produce and perpetuate unhealthiness and disease. The willingness with which the orange produces large crops of its heavy fruit is one cause of the plants being so generally found stunted and unhealthy. The extraordinary demand which is made upon a plant that bears ripe and green fruit, and flowers, as well as young wood at the same time, is seldom considered, as few other fruit bearing trees under our artificial culture do to such an extent. If, therefore, the trees be not well cared for, and kept in a healthy condition, the vital powers of the plant become exhausted, and constitutional debility, disease, and death are the inevitable consequence.

The orange should produce a good growth of young shoots every season. It is not enough that it buds and blossoms. The production of shoots not only increases the size and strength of the tree, but increases its healthfulness. It strengthens the vital principle which flowering and fruiting weakens by the abstraction of matter, which does not go to form any part of its own structure. The maturation of a large crop of fruit abstracts more vital energy from the tree than it can bear, even under the most favorable circumstances of artificial culture, and when the circumstances are unfavorable, it is not astonishing to see them sicken and die.

The orange never bears its fruit upon the young wood of the same year's production, but upon the early ripened wood, or spurs, as they are called, of the previous year. These, except on very sickly trees, should never be cut off; these spurs seldom require to be produced by artificial means, as they generally form in sufficient abundance. When artificial spurs are necessary, the young growths of the same year should be pruned back to about half their length, before they are fully ripe. The still flowing sap will form incipient branches, which, in the following year, will form fruit spurs.

The orange family are all liable to be attacked by insects, the worst of which are the scale and green fly. Fumigation will effectually destroy the latter, but the former must be eradicated by washing with a liquid strongly impregnated with to-

bacco juice, oil soap, and spirit of tar. The plants must be carefully washed over with this liquid, and afterwards with clean water, stem, branches, and leaves, for if one part be left unwashed, it may contain a horde which will soon cover the tree. If the plants be kept frequently syringed with clean water, there is little fear of their being attacked with insects of any description.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Domestic Notices.*

MONTREAL BOTANICAL SOCIETY.—This Society was formed on the 27th December last, for the purpose of mutual instruction in the science of Botany, investigating the plants indigenous to the country, and the classification and examination of the fruits cultivated in Canada, &c. A Library is in course of formation, to consist principally of botanical works, as also the best horticultural periodicals of the day. There are already over forty members. Mr. George Shepherd has been appointed President, Mr. George Garth, Vice President; Mr. Richard Sprigings, Treasurer and Librarian; and Mr. William Brown, Secretary for 1851. The meetings are intended to be held weekly during the winter, and monthly throughout the summer, in the hall of the Lower Canada Agricultural Society; and from the success which has attended its operations during the few weeks which have elapsed since its formation, it is hoped that this society will do much to extend the knowledge of plants, as well as foster and encourage horticultural pursuits in this section of the province.

The following articles have already been exhibited. By Mr. Holder, from the greenhouse of John Torrence, &c., *Lechenaultia formosa* and *Baxterii*, handsome plants completely covered with bright purple blossoms; Chinese Primrose, white and purple, fine and well grown; *Erica gracilis*; *Abutilon striatum*; *Ardisia crenulata*; *Begonia insignis*; *Correa alba*; *Coronilla glauca*; *Daphne japonica*; *Cuphea platycentra*; *Linum trigynum*; *Salvia fulgens* and *leucantha*; *Malvaviscus mollis* and *Lauristinus*; *Camellia Donckelarii*, *conspicua*, *Landrethii*, *undulata*, *eximia*, *eclipse*, *warratah* double striped, and *Wilderii*, the latter a first rate flower, but not superior, so far as observed, to *undulata*, *imbricata* and other old sorts, (the plant was procured from the nursery of Messrs. Parsons & Co. of Flushing); *Sparmania africana*, a handsome early flowering shrub, with pinkish white blossoms; *Magnolia grandiflora*; *Ficus elastica*, or India-rubber plant; *Habrothamnus elegans*; *Eupacris impressa* and *Cooperii*; *Primula flore-pleno alba*, quite new, and said to be the first introduced to Canada; *Acacia falcata*; *Chorizema nana*; *Polygala grandiflora* and *Kerria japonica*.

By Robert Morris, Esq., *Araucaria imbricata*, one of the grandest plants known, and *Aucuba japonica*, or Gold Dust Tree.

By Mr. Cooper, *Camellia* Marchioness of Exeter, and an *Auricula* in flower, one of his numerous seedlings.

By Mr. William Smith, of Cote-des-neiges village, near Montreal, a specimen in full flower of that noble evergreen shrub, the *Nerium Oleander splendens*, and two Waterloo Hyacinths, all grown in the windows of his house.

By Mr. Peter Allan, from the greenhouse of the Hon. James Ferrier, nine varieties of *Mesembryanthemum*, including *speciosa*, *candida*, *coccinea*, and *blandum*; *Cotyledon orbiculata*; *Sempervivum arboreum*; *Crassula coccinea*; *Abutilon striatum* and *venosum*; and *Rochea falcata*.

By Mr. John Carroll, from the greenhouse of George Desbarats, Esq., *Cyclamen persicum odorata* in full flower.

By the President, a collection of dried plants, made by Mr. George McKerricher including *Acacia verticillata*, *nigricans*, *longifolia*, *pulchella* and *decipiens*, and *Dais columnifolia*, &c.

By Mr. Thomas Wilson, gardener to Philip Holland, Esq., a fine collection of dried Cape Heaths, numbering one hundred and three distinct varieties, all carefully named.

In the fruit department the following varieties have been exhibited.

By Mr. Richard Sprigings, from the grounds of Henry Corse, Esq. Montreal, *Apples*.—1. Downton Pippin, winter. 2. White Spanish Reinette, fall. 3. Alfriston, winter, cooking. 4. Fameuse, fall. 5. Majetan, cooking. 6. Yellow Bellfleur, fine winter. 7. Ribston Pippin, fine winter, but inferior in flavor to those raised in Britain. 8. Sam. Young, or Irish Russet, most excellent flavor, November to February. 9. Pack Horse, large and beautiful, but a shy bearer, and scarcely worth cultivation here. 10. Kirke's Lord Nelson, soon grows mealy. 11. A new seedling raised by Mr. Corse, winter, a good bearer. 12. Minshall's Crab, fall, very acid. *Pears*.—1. Duchess de Mars, first rate flavor, very prolific, and quite hardy, tree small, slender and branching, fruit keeps till new year. 2. Josephine, a first quality early winter pear. 3. An old winter French pear, from the Seminary Gardens, Montreal, large, and esteemed for cooking.

The Yellow Bellfleur was of excellent flavor, very little inferior to the Fameuse, and worthy of general cultivation. The new Seedling apple of Mr. Corse was considered only second rate.

By Mr. Holder, from the garden of John Torrence, Fameuse, Pomme Gris, and two Seedling apples, one of them a magnificent looking fruit, large and firm, of a dark red color with a high polish, said to be a heavy bearer and a long keeper. The original tree is standing in the grounds of Mr. Torrence, and has been partly broken down by its abundant crops. The fruit was tasted and found to be of good flavor, and from the account given of its qualities, it is thought that it will rank as a first class kitchen apple. The President, with the approbation of Mr. Torrence, named it after that gentleman's residence, "St. Antoine Hall." The Pomme Gris, shown by Mr. Holder, were compared with specimens brought forward by the President, and found to be very different both in appearance and flavor; and it

was stated by Mr. Steele as his opinion (in which most of the members concurred) that there were two distinct varieties of this apple, as he had seen them of quite a different character, on the same soil, in the grounds of William Rodden, Esq.

On a subsequent occasion the following fruits were shown :—

By Mr. Sprigings, the following apples from the garden of Henry Corse, Esq. 1. Flower of Kent, large and fine. 2. Nonpareil Russet, flavor first rate. 3. Cornish Aromatic, first quality. 4. Carroll's Seedling, an English apple, large, a first rate fruit in all respects, and a good bearer. 5. Hick's Fancy, a small apple, with a sprightly sub-acid flavor. 6. Beauty of Kent, one of the best. 7. Orange Russeting, worthless. 8 and 9. Two new Seedlings, about second rate; of the above, the Nonpareil Russet, and Carroll's Seedling were considered the best. Mr. Sprigings also showed additional samples of the old French Pears from the seminary gardens, which were found to be of superior flavor, being very fine and sweet.

The Secretary exhibited specimens of the wood and foliage of the Balsam spruce, *Abies balsamifera*; White spruce, *A. alba*; Black Spruce, *A. nigra*; and the Pitch Pine, *Pinus resinosa*, formerly called *P. rubra*, and also sometimes known as the *Red Pine*. An interesting conversation ensued on the different species of the Coniferæ. The President mentioned that the Red Spruce is rare, and is to be found in marshy grounds at Three Rivers; that the Black Spruce was originally more common than it is now, having, on account of its value, been much cut down, and that the *Pinus resinosa* grows almost in pure sand. WM. BROWN, *Sec'y. Montreal, 14th March, 1851.*

[We are glad to receive the above notice of the meetings of this new society, and we hope the Secretary will continue to forward us brief accounts of all the beautiful or rare flowers or fine fruits which may from time to time be exhibited.—*Ed.*]

NEW JERSEY HORTICULTURAL SOCIETY.—This flourishing society have voted to hold their next annual exhibition on the 24th, 25th, and 26th of September next, in Jersey City. They have heretofore been held in the western part of the state. East Jersey is celebrated for its market gardens, and from the interest which is manifested in the subject of horticulture, it is expected that the exhibition will be a most attractive one.

The annual meeting was held in January, and the following gentlemen elected officers for the year :—

President.—William Wright, of Newark.

Vice Presidents.—Ira B. Underhill, of Burlington; Jabez W. Hayes, of Newark; Thomas Lavender, of Princeton; Charles M. Harker, of Mount Holly; James G. Phillips, of Lawrenceville; Lewis Perrine, of Trenton.

Corresponding Secretary.—H. W. S. Cleveland, of Burlington.

Recording Secretary.—Ira B. Underhill, of Burlington.

Treasurer.—Charles Scott, of Trenton.

R. S. Field, Esq., the late President, declined a re-election.

BEAUTIFUL ARTIFICIAL FRUIT. We have been highly pleased in examining a collection of artificial fruit, modelled in composition, by Mr. T. Glover, of Fishkill Landing, New York, which are certainly the most perfect imitations of the kind we have ever seen, and show Mr. Glover to be

well versed in the art of painting naturally, as well as modeling correctly. The specimens were exhibited at the rooms of the Massachusetts Horticultural Society, and Mr. Glover was awarded the society's silver medal.—*Ed.*

ART. II. *Massachusetts Horticultural Society.*

Saturday, February 1st, 1851.—An adjourned meeting of the Society was held to-day—the President in the chair.

It was voted, that the Committee on Publication be requested to print two hundred and fifty copies of the Schedule of Prizes awarded in 1850.

The Committee appointed to consider the propriety of awarding to the Vice President, the Hon. B. V. French, some testimonial for his services to the Society, and more especially for his zeal in collecting together and exhibiting so many superior varieties of apples, reported that the Society's Gold Medal, or its value in plate, be awarded to Mr. French. The report was accepted.

Mr. Dutton, from the Committee on the Donation of Mr. Smith, submitted a report, proposing the purchase of fine works upon Horticulture, &c., and that the name of the donor should be appended to each volume in such a manner as to show it was purchased from Mr. Smith's fund for that purpose.

The Committee appointed to settle with the Mt. Auburn Cemetery reported the following statement of their doings, which was accepted. [This report is unavoidably deferred until our next.]

Adjourned two weeks, to February 15.

Exhibited.—FRUIT: From George Walsh, fine Easter Beurré pears.

February 8th.—*Exhibited.*—FLOWERS: The exhibition of Camellias took place to-day for premium. Messrs. Hovey & Co. exhibited fine specimens of *Donckelaëri*, *imbricatà*, *General Washington*, *myrtifolia*, *ochrolenca*, double white, *Fløyi*, *Fördii*, *speciosa*, *philadelphica*, *reticulata*, *elegans*, &c. From A. Bowditch, *Lady Hume*, double white, *americàna*, *Sarah Frost*, *Wilderi*, *Chandleri*, *baltimorea*, &c.; also hyacinths and verbenas. From J. Nugent, thirteen varieties of camellias. From Miss Mary E. Curtis, hyacinths in glasses.

AWARD OF PRIZES FOR CAMELLIAS.

For the best twelve flowers, to A. Bowditch, \$8.

For the second best, to Hovey & Co., \$5.

February 15th.—An adjourned meeting of the Society was held to-day—the President in the chair.

It was voted, that a committee of seven, consisting of J. S. Cabot, C. M. Hovey, Jos. Lovett, D. Haggerston, Wm. H. Austin, D. Leach, and P. Barnes be appointed, to consider the expediency of celebrating the next anniversary by a triennial Festival, &c., and to report upon the same.

A communication was received from D. T. Curtis, upon the preservation of fruit, which was referred to the Fruit Committee to report upon the same.

A communication was received from the Maryland Horticultural Society, requesting copies of the publications of the Society.

The following gentlemen were elected honorary members:—

Millard Fillmore, President of the United States: Hon. G. N. Briggs: George S. Boutwell, Gov. of Mass.: G. W. Smith, Boston.

Adjourned two weeks, to March 1st.

Exhibited.—**FLOWERS:** From P. Barnes, a fine specimen of the white variety of *Cyclamen persicum*, with five hundred expanded flowers. From Dr. D. Wood, five kinds of heaths in full bloom.

GRATUITIES AWARDED.

To P. Barnes, for a fine *Cyclamen*, \$2.

March 1st.—An adjourned meeting of the Society was held to-day—the President in the chair.

It was voted, that the Recording Secretary cause to be printed five hundred copies of the By-laws, together with the Rules and Orders, and the Regulations of the Library.

Mr. Cabot, Chairman of the Committee on Gardens, made the following report, which was accepted:—

The Committee on Gardens, who, by a vote of the Society, were directed to report a list of Prizes, to be awarded for Gardens, Greenhouses, Grape-ries, &c., beg leave to recommend that the Prizes named in the subjoined order, amounting in the aggregate to \$200,—the sum placed by the Society at their disposal for this purpose,—be offered for the objects named in such order, to be awarded in 1851, in accordance with the rules established by the Society. The Committee also recommend that a schedule of such Prizes, with the rules under which they will be awarded, be printed for distribution. For the Committee, J. S. CABOT, Chairman.

Ordered, That the following Prizes, to be awarded in 1851, be offered by the Society, viz. :—

For the most economically managed, best cultivated, and most neatly kept Garden or Grounds through the season,	\$25 00
For the 2d best do.,	15 00
For the most economically managed, best cultivated, and most neatly kept Fruit Garden, through the season,	25 00
For the 2d best do.,	15 00
For the most economically managed, best cultivated, and most neatly kept Flower Garden through the season,	20 00
For the 2d best do.,	10 00
For the most economically managed, best cultivated, and most neatly kept Vegetable Garden, through the season,	20 00
For the 2d best do.,	10 00
For the best managed, most economically conducted, and well kept Greenhouse, through the season,	20 00
For the 2d best do.,	10 00
For the best managed, most economically conducted, and well kept Grapery, through the season, with or without fire heat,	20 00
For the 2d best do.,	10 00
	<hr/>
	\$200 00

The rules for awarding the prizes will be found at page 35.

A copy of Downing's *Country Houses* was received from the author, and the thanks of the Society voted for the same.

It was voted, that tickets for the use of members be printed, under the direction of the Committee on Publication.

Adjourned one week, to March 8th.

Exhibited.—FLOWERS: From Hovey & Co., a fine seedling Camellia, the same variety exhibited last year. Color very deep, almost scarlet, full and perfect: the flower, however, was not so perfect as that exhibited last year, the plant being only one year old from the graft. From P. Barnes, two seedling Azaleas, and *Wistaria sinensis*. From A. Bowditch, Hyacinths in pots, and Snow drops.

March 8th.—An adjourned meeting of the Society was held to day—Vice President French in the chair.

The thanks of the Society were voted to Daniel Ravenel, Esq. of Charleston, S. C., for valuable publications, for the Society's Library.

The thanks of the Society were voted to F. R. Elliott, of Cleveland, Ohio, for scions of Seedling Cherries, which were placed in the hands of the Fruit Committee for distribution among the members.

Adjourned one week, to March 15th.

March 15th.—An adjourned meeting of the society was held to-day—Vice President Newhall in the chair.

It was voted, that the Society's silver medal be awarded to Mr. T. Glover, of Fishkill, New York, for fine specimens of artificial fruit, modeled in plaster or composition, and exhibited at the Society's room.

It was also voted, that the Fruit Committee be authorized to forward to Mr. Glover in their season, specimens of choice fruits for the purpose of obtaining models of the same.

Adjourned one week, to March 22d.

Exhibited.—FLOWERS: From J. Nugent, fine specimens of *Erica caffra*. From A. Bowditch, Hyacinths and Seedling Verbenas. From J. Clark, Souvenir de la Malmaison Rose.

March 22d.—An adjourned meeting of the Society was held to-day—the President in the chair.

A letter was received from Hon. T. H. Perkins, relative to the formation of a cabinet of models of fruits, to be executed by Mr. Glover; it was referred to the Fruit Committee to report.

C. M. Hovey, Chairman of the Committee on the President's Address, submitted the following report:—

The Committee, to whom was submitted the annual address of the President, with directions to report thereon, have attended to that duty, and offer the following as the result of their deliberations.

They are happy to welcome the custom which the president introduced last year, of addressing the society, at its opening meeting, in regard to its interests, its welfare, its present usefulness, and future success; and of offering such suggestions as to him seems expedient, in relation to its progress towards that high end which it has ever been the hopes of its ardent friends

to maintain; and they would express the wish that hereafter, as now, at the opening of each year, the members may learn, from the executive, the condition, prospects, and wants of the society, that these may be supplied, so far as its means and the efforts of the members can aid in the good work.

The flourishing state of the society must be viewed with the highest gratification by its members and numerous friends. From small beginnings it has, in the brief space of little more than twenty years, attained to an eminent position, and exerted an influence in the diffusion of horticultural information, which has been felt throughout the State, and, to some extent, throughout the country. Its exhibitions, from the meagre show of a hundred baskets of fruit, and scarcely half that number of varieties, have increased to thousands, and of many hundred different kinds. Hundreds of showy and beautiful plants, unknown and unintroduced in the day of its infancy, now ornament its weekly shows, and render the society's hall one of the most attractive places of resort to all who appreciate beautiful flowers and fine fruits.

To foster this growing taste, to aid in ministering to its dissemination, which your committee believe exerts so important an influence upon the welfare and happiness of society, should be one of its principal objects, and in no way can this be effected with more advantage than in rendering its exhibitions beautiful, attractive, instructing and interesting.

And here your committee cannot but view with pleasure the success which has attended the change in regard to the admission of the public to its weekly exhibitions *free*, agreeably to the report of last year. Whether or not it may have been with any pecuniary loss,—and they believe it has not,—to the society, is a matter of no material consequence, so long as the main object of its exhibitions is accomplished. Once more a large and apparently gratified assemblage of persons has weekly filled the hall, admiring the productions of the garden, the greenhouse, and the orchard, affording a pleasing recollection to the amateur, as well as the professional man. The objects over which they have spent so much care and time, are not only seen, but duly appreciated. It is at once the best reward and chief incentive to increased effort towards the perfection of their delightful art.

The committee are no less pleased at the complimentary manner in which allusion has been made to Mount Auburn, and to General H. A. S. Dearborn, the first president of the society, to whose untiring zeal in its behalf it was placed upon the right path to secure its future success. So long as the memory of this last resting place shall linger in the hearts of those, whose friends lie beneath its verdant turf, so long will the early efforts and the early labors of General Dearborn, in securing this burial spot,—and his subsequent exertions in laying out and arranging the grounds in the tasteful style so creditable to his talents,—remain fresh in the memory of every member of this association.

But while we accord so much merit to those who have personally been with us, who have shared in the duties of officers and members, there are others who, though making no display of their taste and skill, have not been

the less friends of the society and the science it was intended to promote, and who have manifested the most substantial tokens of their interest in its behalf. How great, indeed, is our debt of gratitude to those who have so liberally and nobly contributed to further its objects, and secure its highest success. More especially, how deeply are we indebted to one who has bequeathed a fund so munificent, for purposes so general, and from which so much good will undoubtedly result.

The establishment of a series of premiums for gardens, from the Lyman fund, to encourage home cultivation, and increase the attractions of the grounds of every amateur, professional man, or lover of landscape beauty, which was first, though somewhat imperfectly commenced last year, has been attended with the happiest results. The occasional visits which the committee, appointed for that purpose, have made to the gardens of the society, have brought them to a more intimate acquaintance with the condition and state of horticultural science among us, and enabled them to form a more correct opinion of the value of the many fruits, flowers, plants and vegetables, under cultivation, which must lead to improved modes of cultivation. Your committee see no material alteration to make from the conditions of last year in relation to the premiums for gardens, and they would recommend, with the president, "this interesting branch of our labors to the fostering care of the society."

Upon the subject of landscape gardening, your committee would refer to the report of last year as containing their views in regard to this department of horticultural labor.

In regard to an experimental garden, to which a passing allusion has been made by the president, your committee have now but little to say. If at any future time the society should seriously contemplate any such important work, then will be the opportunity to discuss it. Your committee now would merely state that, in their opinion, it is much better to encourage individual effort, and incite individual exertion, than for the society to enter into the accomplishment of what can be as well, or better done, in that way.

The holding of the annual exhibitions of the society under tents receives a notice, and as your committee deem this a subject of some importance to the interest and pecuniary condition of the society, they trust it will have due attention from the committee of arrangements for the intended annual exhibition in September next.

The erection of a new hall, or temple, is mentioned with more than ordinary interest. Your committee are well aware that the annual exhibitions of the society, provided they are to be held in the hall, cannot be accommodated in its present building; and with the increasing interest manifested in the culture of flowers and fruits, and the immense number of the new varieties of both, as well as new vegetables, it is doubtful whether any ordinary hall would be suitable for the accommodation of the society at its annual exhibition. For all the ordinary purposes of the society, however, its present hall is ample. Still, your committee would propose that the funds, after a liberal annual appropriation, should be carefully husbanded, that, at a future day, should it be deemed expedient, a large, more commodious, and

elegant building, in every way suited for horticulture, may be erected; "where," in the language of the president, "it may be fitted up with reference to its soul-stirring, kindred spirit, Music, where the warbling voice and the Bird Song might be wafted like the gentle zephyr among the trees, the buds, the blossoms and the flowers;" a building, indeed, every way worthy of the standing of the society, and of being denominated a Temple of Flora and Pomona. All of which is respectfully submitted.

C. M. HOVEY, *Chairman.*

March 12th, 1851.

Accepted, and ordered to be printed with the President's Address.

A package of seeds was received from the U. S. Patent Office, and placed in the hands of the Flower Committee for distribution. The thanks of the Society were voted to Mr. T. Ewbank, Commissioner.

Roswell L. Colt, Esq., of Patterson, N. J., was admitted an honorary member.

W. H. Barnes, Roxbury, and H. Gasset, Wrentham, were admitted subscription members.

Meeting dissolved.

HORTICULTURAL OPERATIONS

FOR APRIL.

FRUIT DEPARTMENT.

The cool and backward weather of last month, accompanied by more rain and snow storms, in number,—if not in quantity, than any of the winter months,—have retarded much of the work which should have been forwarded before the commencement of April. This will, therefore, render the exertions of the zealous gardener, or amateur, more laborious, in order to keep up with the advancing season, which will undoubtedly come on all the more rapidly. He should now seize every favorable opportunity to complete his routine of duties, and keep up with the pressing engagements of this busy period of the year. Pruning, which may be done in all but the worst weather, should be proceeded with, and though it is not positively necessary that it should be done so early, yet there is always such an accumulation of other work that the sooner it is done the better. Grafting, too, may be completed as early as possible, not that this must be done, but for the same reasons named in finishing the pruning. Trees may also now be washed with whale oil soap, or the composition recommended by Capt. Lovett, in our last volume.

GRAPE VINES, owing to the cloudy unpleasant weather of March, have not advanced very rapidly—and will now only be showing their flowers in the greenhouse or vinery. If good weather, however, follows, they will push with renewed vigor, and before the end of the month will require to have the laterals stopped once or twice. Discontinue syringing just before

the flowers begin to open, but in the place of this, continue to supply moisture by damping the walks once or twice a day according to the weather. In cold houses the vines will begin to break now, and will require the same attention recommended for grapes in the greenhouse in our last. Vines in the open air should now be tied to the trellis and put in order for the spring: manure freely, and spade the ground as deep as can be done without injuring the roots. New borders made last year, and about to be planted this spring, should be turned over, unless done last fall; they will then be ready for planting in May.

PEACH TREES, in pots, will now be swelling their fruit, and will require liberal supplies of water and occasional syringing over the foliage: look out for the green fly and red spider, as either of these insects are very injurious while the fruit is quite young. Now is a good time to plant additional trees, where a larger stock is wanted.

GOOSEBERRY, CURRANT, and RASPBERRY BUSHES, should now be planted. Raspberries, protected during the winter, should now be uncovered and tied up for the season.

STRAWBERRY beds may be made this month. Make the ground rich, dig deep,—if trenched all the better—and plant the last of the month. Old beds should now be uncovered, the surface raked, and all weeds or grass dug out and destroyed.

PYRAMIDAL, ESPALIER and other TREES, should be pruned, and have the soil enriched and dug around their roots.

ROOT GRAFTING may yet be done.

BLACKBERRY bushes may now be set out: old plantations should now be put in order, by pruning out the superfluous wood, and tying their strong shoots up to stout stakes, at least eight feet high.

TREES of all kinds may now be safely transplanted. Look over trees now and see that the labels are secure, that the names are not getting defaced by the weather; prepare stakes for supporting young trees: matting for tying up grape vines, &c; and shreds of leather or cloth, for nailing up the branches of wall trees. Manure and dig among all kinds of trees and plants.

FLOWER DEPARTMENT.

After the extended remarks in our last number, under this head, it is unnecessary that we should caution the young amateur against the injurious effects of fire heat, which, owing to the continued cold weather of last month, it has been necessary to keep up. If our advice has been carefully followed, no injurious effect need be apprehended.

With the advent of April the cultivator's labors will be greatly augmented: five months' confinement of the plants in the greenhouse and conservatory will have greatly changed their aspect, and they will now many of them need attention. Some will require to be immediately repotted, pruned and put in condition for successful flowering another year: others will only need top dressing, preparatory to future repotting in the course of the summer. One thing, however, we must impress upon the amateur or gardener, who would have his plants in the best order, and that is to pot his plants *when they require it*.

It is proper that certain periods should be set apart for a general shift of most kinds of plants: yet there are exceptions to the rule; and especially is this the case in small collections where it is desirable to grow *specimens*, which often need two or three pottings in one year; while, for the general purposes of culture, one only would be thought necessary.

CAMELIAS will now be making their growth, and will require liberal supplies of water, and frequent syringing over the foliage: nothing invigorates them so much as the latter operation. The roots too should have occasional supplies of *liquid guano*. If any are pot bound, shift them before they commence growing. Continue to inarch until the plants have begun to grow.

PELARGONIUMS, attended to as we have already directed, will now begin to throw up their trusses of buds. Give an abundance of air—discontinue syringing—and keep down the green fly by frequent fumigation. Water occasionally with weak *guano*. Plants for late blooming in June, may now have their terminal shoots topped.

VERBENAS, for bedding out, may now be propagated, if additional stock is wanted. Plants for spring blooming should have a final shift now into good sized pots. Sow seeds now for producing new kinds.

RANUNCULUSES, not yet planted, should be got into the ground as soon as possible; those already set out in frames, should be duly aired in good weather.

HYACINTH and **TULIP** beds should be uncovered as soon as possible, after all danger of severe weather is over; take an early opportunity to stir the soil among the plants.

CARNATIONS and **PICOTEEES** in frames should be well aired now, taking the lights wholly off in good weather. If the ground is ready, they may be set out the last of the month. Now is the time to sow the seeds for producing new sorts.

PANSIES in pots should now have a shift into the next size. Plants in beds, protected with sashes, should be exposed to the weather as much as possible. Continue to sow seeds for a new crop.

DAHLIAS, for early blooming in the border, may now be started in an old hot bed, or in the greenhouse, and in this way they will bloom abundantly in July and August. Continue to propagate by cuttings, or division of the tubers, if a stock is wanted.

JAPAN LILIES will grow away rapidly this month, and will require to be removed into the pots in which they are to flower. Seeds should be planted now.

OXALISES, **IXIAS** and other winter bulbs done flowering, may be placed away under the stage on a dry shelf.

ACHIMINES of the different sorts should be brought forward for a succession; plants well advanced should be repotted.

SEEDS of many kinds of annuals should be immediately planted: Rocket Larkspurs should be sown as early as possible in beds where they are to bloom; other sorts, such as asters, balsams, globe amaranthus, &c. &c., may be forwarded in pots in the hot bed.

PERENNIAL HERBACEOUS PLANTS may be removed now. Phloxes and

all similar plants which have stood three or four years without removal, will flower much better to be divided and reset.

FLOWER GARDEN AND SHRUBBERIES.

The department embraced by this cognomen is one of rapidly increasing importance, and we will therefore begin with this month, and give our readers such premonitory hints as will enable the amateur to conduct the various operations at their proper season, and in the proper manner.

Here, as in the other out of door departments, operations crowd themselves upon the cultivator, and he must be wide awake, otherwise the season will leave him behind. Our spring proper, is but a short period, and the interregnum between the departure of frost and the commencement of vegetation, is too short to admit of operations being delayed beyond the proper time. And though we can hardly expect that no frosts will occur during this month to paralyze vegetation, or check the progress of our operations, yet it is always better to be ahead of the hot weather, rather than let the hot weather overtake us before we are half through with our spring work.

ROSES.—This is the best month for pruning all kinds of hardy roses, dwarfs, and standards. Those that are rather tender should be left undone till towards the middle or end of the month, because the late spring frosts,—especially in our most northern New England States,—frequently destroy the spurs that are left, and therefore materially affect the early summer's bloom. Especial foresight must be exercised in performing this business however, before the growth commences; for as the uppermost buds always develop themselves first, and the lower ones are thereby weakened, the principal energies of the plant will have been expended on the part that is to be removed, and debility in the other will be the result. The period of pruning has a very wonderful effect on the period of blooming, and by leaving some of the more hardy and strong growing kinds unpruned till they have started into growth, they will be in full bloom when the early pruned ones are done. By this method the blooming season of the hardy roses may be very considerably prolonged.

Where deciduous trees require pruning or shortening in their branches, this should now be done forthwith. Let it be understood however, that we do not by any means advise that species of barbarity which is frequently perpetrated on ornamental trees, under the supposed sanction of this *nom de guerre*. Not a spring passes, but we see fine trees unmercifully mutilated under the pretext of pruning. And even evergreens are *trimmed* up like a tonsor's pole, with a cluster of branches at top, reminding one of a handful of evergreen branches set on stilts; we often feel as if we could shed tears over such terrible deformities, and regard the operator as exhibiting the same taste as if he pasted, over the finest pictures of Raphael, the caricatures of Punch. We do not call this *pruning*, but condemn it as an operation that exhibits neither taste nor judgment.

Planting should now be carried on with vigor, though we prefer autumn planting for many kinds of trees; nevertheless, most kinds, if properly done, will succeed at this season. Operations unfinished in the autumn may now be executed.

Now is the time to form good walks, whether in the garden or in the shrubbery; all ill-made walks should be dug up and relaid with good material. The value of good walks is not appreciated in our climate during dry warm weather, and it is only in soft wet weather that the benefit of a good walk is estimated as it should be, when the pedestrian sinks in the very walks of the garden two or three inches in mud. We would like to see walk-making more attended to, and will give a few hints on the subject by and by.

The edges of walks should be cut—the box edgings trimmed—and grass verges lined and cut off. When the grass edges are cut in spring, previous to digging the beds and borders, they are much easier kept during the season, when the grass is mown. All beds and borders must be dug and manured preparatory to the reception of the summer-flowering plants.

Shrubs and tender trees, that have been under close coverings of straw, &c., during the winter, should be gradually uncovered during the month. They should not be exposed all at once, but should have the covering opened towards the north for some time previous to its removal; such trees and shrubs ought to be examined, and air admitted in this way, to prevent them from starting prematurely into growth.

The hardiest kinds of annuals may be sown now, as Godetias, Calendrinas, Œnotheras, Collinsias, Sweet peas, Candytuft, Mignonette, &c., and after the middle, Schizanthus, Lupins, Eutocuses, Viscarias, Leptosiphons, and most of the hardy kinds that come up freely in the open ground.

Bulbs should now be planted in properly prepared beds in the flower garden; such as Gladioluses, Tuberoses, Ranunculuses, Anemones, &c. The more tender kinds of bulbs, should be kept till the end of the present or the beginning of the following month.—(See *Flower Department*.)

VEGETABLE DEPARTMENT.

Continue to make up new hot beds where a succession of crops is wanted, or where there is occasion to raise a good stock at this early season. Old beds will require to have good fresh linings, to keep up a brisk heat, owing to the severe weather of March; cucumbers especially will not be likely to set well, unless there is a good bottom heat of 80 degrees.

The early made beds, when the heat has become moderate, will answer a good purpose for planting out Tomatoes, Egg-plants, Okra, Lettuces, &c., preparatory to their removal to the open ground, the last of May. Lima Beans, Squashes, &c., may be planted either in pots or boxes, or on sods with the grass side down, so that they may be transplanted to the open ground when the weather is sufficiently mild.

Early Cabbages of the various kinds may be set out now, protecting them if the weather should suddenly turn up cold.

Peas, Beets, Onions, Parsnips, Salsafy, &c., should be got into the ground as soon as it is sufficiently dry.

Sweet herb seed, such as Marjoram, Fennel, Hyssop, &c., should be planted in pots in the hot bed, for removal to the open ground.

THE MAGAZINE
OF
HORTICULTURE.

MAY, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Ornamental Trees, adapted for Parks, Lawns and
Pleasure Grounds.* By the EDITOR.

16. THE NORWAY MAPLE, (*Acer platanoides*.) This is the finest of the foreign maples, and is a forest tree of the first rank. Its general appearance is like the European sycamore, but the foliage is far handsomer, smoother, and of finer texture, giving to the tree its greatest beauty. The bark is of a clear reddish brown on old trees, dotted with white specks. It does not grow near so rapidly as most of our American maples, but in a good soil and location it attains the height of twenty to thirty feet in ten years. The leaves die off of a yellow or yellowish red. We recommend this as one of the finest ornamental trees.

17. THE SYCAMORE OR GREAT MAPLE, (*Acer pseudo-platanus*,) is a handsome tree of tolerably quick growth, attaining the height of fifty or sixty feet. It forms a rather stiff, roundish head, like our scarlet maple; but nevertheless, introduced sparingly, it is a good tree. The leaves are palmate, with five acute lobes, quite different from the others, and they are of a pale or glaucous hue beneath. Sir Thomas Dick Lander says, "it is a favorite Scotch tree, having been much planted about old aristocratic residences in Scotland." It is a good street tree, affording, by its numerous branches and the density of its foliage, a fine shade. It is also a capital tree to resist high winds; and in situations where the wind blows,

one way, nine months in the year, this species retains its upright and symmetrical form. We know of but few fine specimens of this tree in this vicinity.

There are several other maples, and some which are varieties of the above, with variegated or purple leaves; but these are yet little known, and so recently introduced that we can give but a brief account of them from our own observation. When we have seen more of them we shall notice the best.

ASHES.

“I have sometimes heard,” says Gilpin, “the oak called the Hercules of the forest; and the ash, the Venus. The comparison is not amiss: for the oak joins the idea of strength to beauty; while the ash joins the ideas of beauty and elegance.”

The ash yields only in the beauty of its growth and the usefulness of its timber to the oak. The ash, indeed, serves a greater number of useful purposes than perhaps any other tree. It is the most elastic of all timber, and on this account, as well as its lightness, it is the principal wood used for hoops, for handles to all kinds of garden implements, for carriage shafts, oars, staves, carriage springs, ploughs, &c. &c. “In short,” says Evelyn, “so useful and profitable is this tree, next to the oak, that every prudent lord of a manor should employ one acre of ground with ash to every twenty acres of other land, since, in as many years, it would be worth more than the land itself.”

Loudon, in his *Arboretum*, enumerates thirty-six species of the ash, twenty-eight of which are natives of North America. Of many of these, however, but little is known, and it is even doubtful whether all are distinct. Mr. Emerson, in his *Trees of Massachusetts*, describes three as natives of this State, viz., the White, Red, and Black. Two of these, and the common English, are all we shall notice now.

18. THE WHITE ASH, (*Fraxinus americana*.) This species is the most remarkable for the rapidity of its growth as well as the excellence of its timber. It is a light and graceful tree, often attaining the height of sixty or seventy feet, with a

straight and handsome trunk. In forests, it towers up to its greatest height ; but, standing isolated, it rises more slowly, throwing out its branches with a somewhat double curvature on all sides, forming a large, beautiful, roundish head. Three or four trees, within a few rods of our residence, are elegant objects at all seasons of the year. The trunk, while young, is very smooth, with a light bark ; but in old trees, it assumes almost the roughness of the oak. The leaves are compound, usually with seven leaflets, and of a pale glaucous hue.

This species, says Mr. Emerson, "is found in every part of the State, and on every kind of ground, but flourishes best in a deep loamy soil, near the banks of a river, or in a moist meadow." It thrives well in any good soil, neither too wet nor too dry, and is a fine tree, if judiciously introduced, for all landscape uses. Its principal characteristics are gracefulness of form and mellowness of foliage, which form an agreeable contrast with the giant growth and sombre green of the oaks and elms. Another feature, too, is the deep purplish coloring of its leaves in autumn, which produces a fine effect among the yellowish tints of the elms and maples.

19. THE BLACK ASH, (*Fraxinus sambucifolia*.) This species is the most slender of the ashes, often rising to the height of seventy feet with a trunk not more than a foot in diameter. It is confined to rather lower ground than the white, but yet grows well on any good soil not absolutely dry. In such a soil, and in an open situation, it spreads out its branches and forms a fine head. It is readily distinguished from the white by its *sessile, serrate* foliage, and its *blue* or *black* buds.

20. THE ENGLISH ASH, (*Fraxinus excelsior*.) Gilpin, whose description of the ash applies to this species, remarks, that "nothing can have a better effect than an old ash, hanging from the corner of a wood, and bringing off the heaviness of the other foliage with its loose pendent branches." It has always surprised us that this species was not more generally planted. It grows rapidly, flourishes in almost any soil, and in the beauty of its handsome spreading head, in the graceful curves of its branches, and the lightness of its foliage, it

is excelled for picturesque effect but by few trees. Mr. Strutt, in his splendid *Sylva*, observes, that "it is a lovely tree by the side of some crystal stream, in which it views its elegant pendent foliage bending, Narcissus-like, over its own charms."

LIMES, OR LINDENS.

Under the name of the Linden, this tree is best known, and considerably planted, more particularly in the cities of the middle States. In the vicinity of Boston, it is not so common, and not many old trees are to be seen. In Cambridge, near our residence, there are five or six very large and fine specimens, fifty or sixty feet high, and probably about one hundred years old. They are yet flourishing with great vigor, and, when in full leaf and flower, perfume the air for a great distance. More recently, the lime has been more extensively planted, and some fine avenues have been set out wholly with this tree.

For picturesque effect, the lime can make but little claim, more particularly the European species. The head is stiff and clumpy, and does not harmonize well with other trees; in this respect it is like the horse chestnut. As single specimens upon the lawn, or introduced sparingly into extensive parks, it forms a beautiful object; as a street tree, it is one of the very best. It does not spread its branches like the elm, and on this account is much better adapted to narrow avenues. Its shade is very dense,—its foliage thick,—its flowers highly fragrant, and its winter aspect in unison with the regular architecture of our cities. It transplants well, grows rapidly, and must be ranked as a highly ornamental tree.

21. THE AMERICAN LIME, (*Tilia americana*.) This, our American species, is far less common as a cultivated tree than the European; indeed, we do not recollect any specimens, of much size, in the vicinity of Boston. Mr. Emerson gives the measurement of one in Natick, which was upwards of sixteen feet in circumference. It is, however, too beautiful to be so sadly neglected, and we hope to see it more

extensively planted. One reason why it is not more commonly planted is, that, although a native tree, yet it is very scarce in the nurseries: the European sort is so readily imported, and the native one is so difficult to obtain, that the former has been almost exclusively furnished by our nurseries.

The distinguishing characteristics of our native tree are a rather freer and looser habit, with rather more pendulous branches, larger foliage, and of more vigorous growth. It also holds its leaves later in the autumn than the European, a quality much in its favor.

22. THE EUROPEAN LIME, (*Tilia europæa*). Besides, as we have already remarked, the more regular and clumpy form of this species compared with the American, its branches and spray are more numerous and its leaves are smaller and more rounded, and of a somewhat deeper green. In a good soil and with good treatment, it advances rapidly, making shoots two to three feet annually and soon attains a large size: It is a good tree to plant with the Rock and Silver maples, and the Scotch elms in avenues, for those who like a mixture of various sorts of trees.

BEECHES.

The beeches are large and handsome trees, though but little valued for their timber.

They are extensively planted in Great Britain, and many magnificent specimens may be seen in the parks of the finer residences of that country. As a picturesque tree, on account of its close and dense branches and foliage, it cannot rank with the oak, elm, and other more irregular headed kinds; but as single specimens, few trees can surpass, in the massiveness and gigantic proportions of their heads, the beeches. The leaves are thin, of a glossy green, and retain their color till late in autumn, changing often to a glowing orange. For depth of shade, no tree equals the beech. They have as yet received but little attention as ornamental trees; but we hope that, as their real merits become better known, they will be more sought after, and more highly appreciated.

23. THE EUROPEAN BEECH, (*Fagus sylvatica*.) This is

the common English beech, of which many very large and old specimens exist in England. It is of rather slow growth, compared with the maples and elms, but in good soils it soon makes a fair-sized head. "Contrary to the general nature of trees," says Gilpin, "the beech is most pleasing in its juvenile state." It then has a light and airy aspect, which in age it loses, becoming more formal and compact, and consequently less picturesque.

24. THE AMERICAN BEECH, (*Fagus sylvatica americana.*) Many botanists believe this and the English to be one species: they certainly have a great similarity, though they are not exactly alike. The difference, however, is slight, and not easily distinguished by one not acquainted with trees. The leaves of our native sort are larger, and, on the whole, we think it the best variety. It likes a good rich soil, and, in such a one, soon makes a fine head.

There are several varieties of beeches, which have been raised from seed by the English and continental cultivators; but we have no room to notice them all at this time.

POPLARS.

The old Lombardy poplar is so much disliked as an ornamental tree, that the whole poplar tribe has lost much of its claim upon the attention of planters. They are all hardy, rapid growing trees, well adapted to many situations, particularly upon the sea coast, where they seem to resist the wind much better than most kinds. For small plantations and for streets, they do not possess the value of many other trees. But where the object is to obtain shade and shelter in a short space of time, no trees can be better suited to that object.

25. THE BLACK ITALIAN POPLAR, (*Pópulus monilifera.*) This species, though called the Black Italian, is said to have been introduced into England from America, in 1772. But Michaux the younger, as well as Pursh, state that they never saw it in this country only in gardens. It is the most rapid growing of all the poplars, and attains the height of forty feet in eight or ten years. The foliage is of a very deep green, and its constant motion is one of the greatest charac-

teristics of the tree. Gilpin remarks, that "it possesses one beauty which is almost peculiar to itself, and that is the waving line it forms when pressed by the wind. Most trees in this circumstance are partially agitated,—one side is at rest while the other is in motion. But the Italian poplar waves in one simple sweep, from the top to the bottom, like an ostrich feather on a lady's head." We recommend this tree particularly to ornamental planters.

26. THE ABELE, OR WHITE POPLAR, (*Pópulus álba*,) is so well known that it is unnecessary to describe it. It answers a very good purpose for light lands, such as the sandy soils of Cape Cod, and for exposed situations; but its great tendency to sucker, renders it less desirable than most of the other species.

Other species of poplar are the American aspen, (*P. tremuloides*,) the Large-leaved, (*P. grandidentata*,) Balm of Gilead, (*P. cándicans*,) the River poplar, (*P. lævigata*,) &c.—all very handsome trees, more particularly the last.

BIRCHES.

The birches are such common denizens of our forests that they have been thought scarcely worthy a place among ornamental trees, variety being by too many viewed as preferable to beauty. They are, however, some of them, very elegant trees, and their light and delicate foliage forms a pleasing contrast with other kinds. The bark, too, of some birches renders them conspicuous objects in winter. There are, at least, three of the birches which should find a place in every ornamental plantation of any extent, viz., the Canoe, the American White, and the English White.

27. THE CANOE BIRCH, (*Bétula papyràcea*.) This species is, we think, the finest of all the birches. It is scattered throughout New England, where it grows on the banks of rivers, in a deep and rather moist soil. In such a situation, when not crowded by other trees, it forms an exceedingly picturesque and beautiful object, attaining the height of fifty or sixty feet. Its foliage is deep green, soft and shining, and as it glitters in the sunlight, it forms a pleasant contrast with the silvery bark of the trunk.

28. THE WHITE BIRCH, (*Bétula populifolia*,) does not attain to so great a height as the former. It has the same silvery bark, but the branches are more slender and drooping, and the leaves are longer and of a triangular form, and nearly as tremulous as the aspen. Its usual height is twenty to thirty feet.

29. THE EUROPEAN WHITE BIRCH, (*Bétula álba*.) This very nearly resembles the American white. It is of a more vigorous growth, and in this respect comes nearer to the Canoe; while in its foliage, and the slender and drooping character of its branches, it approaches the former. It is a very beautiful and desirable tree, and should be more extensively planted.

MOUNTAIN ASHES.

The Mountain ashes are beautiful trees, and possess the combined qualities of handsome flowers, delicate foliage, and brilliant fruit. Though common, and planted to considerable extent, they are so no more than their merits deserve. In fitting situations, it always forms a handsome and picturesque tree. For high and rocky places, it is a fine object, and, judiciously grouped with evergreens, "in autumn, the glowing berries, which hang clustering upon the trees, contrast beautifully with the deeper green of the pines." (Gilpin.) In high and dry soils, the Mountain ash forms one of the finest low-growing trees.

30. AMERICAN MOUNTAIN ASH, (*Pyrus americana*.) Our native species, though a pretty tree, does not grow so rapidly as the European, nor acquire so good a form. In other characteristics it is similar, only differing in the color of its berries, which are of a duller red. In a large collection it should always be introduced, but for general purposes we prefer the European.

31. EUROPEAN MOUNTAIN ASH, (*Pyrus aucupària*.) This is the common and well known Mountain ash, forming a tree twenty to twenty-five feet high, and bearing in autumn a profusion of scarlet berries in large clusters. It grows freely and rapidly in any light soil, and bears its fruit when

four or five years old. For limited grounds, where neither too large a growth nor too dense a shade are desired, this is one of the best of trees.

HICKORIES.

The hickories are all valuable timber trees, and also form fine objects in landscape scenery. Their cultivation for both objects has been quite too much neglected. They are not so readily raised as some trees, and do not grow so rapidly,—but what is lost in this way is made up in the beauty of the specimens when they attain a good size. One of the finest trees in our grounds is a species of the pignut. There are four species indigenous to Massachusetts. Two of them, at least, should find a place among all choice collections of trees. They are the shellbark and pignut.

32. THE SHELLBARK HICKORY, (*Carya álba*.) Everywhere common in Massachusetts, and the species from which the nuts are gathered which are sold in our markets. It grows to the height of fifty feet and upwards, forming a rather lofty, conical head. The foliage dies off of a rich orange brown, or orange russet.

33. THE PIGNUT, (*Carya porcina*,) somewhat resembles the shellbark in general growth. The bark is less rough than the shellbark, but is more finely broken, and takes this character at an earlier age. The fruit is quite worthless. It grows to a great size, and its foliage assumes the same tint in autumn of the above species.

Having thus enumerated the principal families of trees in which there are one or more desirable varieties, in another and concluding paper we shall describe those of which there is only a single specimen of each.

ART. II. *A Vinery of Moderate Cost, for Men of Moderate Means.* By A. JOHNSTON, JR., Wiscasset, Me.

DEAR SIR,—It has long been a matter of regret to me, that the good people of this State of Maine, should be willing,

year after year, to deny themselves the pastime, comfort and profit of a grapery, such as I propose to describe, and send away their money, by thousands, as they annually do, for what can so easily be raised at home. There are certainly a thousand men in this State who *can* afford such a house as I shall build, and 100,000 lbs. of Hamburgh grapes, (a very moderate computation,) worth \$50,000 annually, is no mean item among the horticultural products of our soil. The very great expense* of such structures has been an effectual bar to their extension in this neighborhood. People have been content to give it all up, without once inquiring how to modify the structure and reduce the cost. The public taste, too, in these matters, needs cultivation and improvement; and I know of no better way, than to exhibit the results of such an investment, accompanied, occasionally, by brief, clear, and pointed remarks, as to the exact practice that produced such results. Let each one give *his own* views and let other people's alone. The results, all the time, will sufficiently prove the soundness of them. It is easy to fill a volume with other men's ideas, and nothing is easier than to perplex a novice to death with such a heterogeneous mass of ill-digested stuff.

I talk loud, perhaps, but have paid my admission fee, and have the same right, that every body has in this land of liberty, to "say out my say."

But, now to the point. I purchased all the glass in a large three-story house, last fall, some 800 lights, size 8 × 10, for twenty dollars; and after reserving enough of the best for my own use, sold the balance, which paid all necessary repairs on the 642 lights retained. I have called it four cents a light, in my estimate, but it has not cost me over three and a half. There are plenty of old sash to be had at four cents, in good order, as old 7 by 9 and 8 by 10 sash are being replaced every day, by better shapes and sizes.

Fig. 12 represents this house in perspective, 21 feet, 10 inches in length, 9 feet wide on the ground, and 11 feet high inside to the ridge. It is a rough draft, I know, but will

* Eight dollars per foot for a cheap "lean to" house, is the usual reckoning, and open houses, *shaped* like mine, cost from 12 to 16 dollars per foot.

show at a glance the whole "how." It rests upon six stone posts, four feet long each, and about six inches square. It is covered with matched boarding on the back side, as high as the short roof rafters; all the remaining surface is covered with glass. There is a glass door in each end, and *all* the

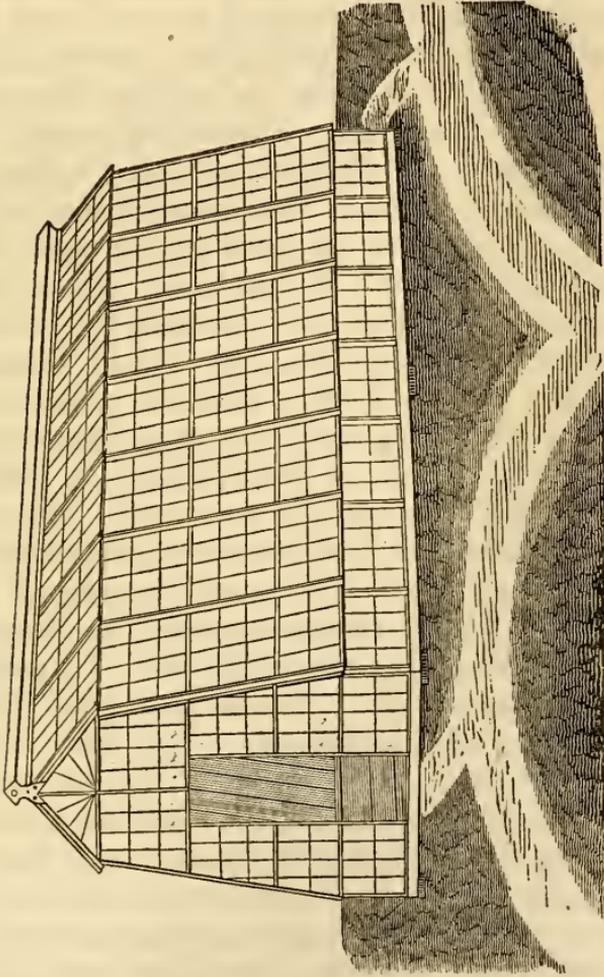


Fig. 12. Perspective View of Mr. Johnston's Cold-house Grapery. 9 by 22 feet.

sash on the house can be taken off and removed in fifteen minutes, by "two hands." The long rafters fall back from a perpendicular, at an angle of 15° , and the short ones, or roof, lie at an angle of 30° inclination from the horizon. House fronts south by west, (south by east is full better,) as I have no room to select any better site from. The saddle boards,

above the ridge, are designed to afford shelter from the storms, to the awning. There is no awning necessary on the north slope of the roof, as, with the sash raised two inches, no damage from burning can ever occur. This is an odd shape for a house, but it surely possesses many advantages.

First, it economises the room. *Second*, the sun's rays strike the glass front with the most heating power, in early spring and late autumn, at the very times most needed. In July and June the obliquity of the rays preclude the possibility of burning the foliage. The awning spread at 10, A. M. and rolled up at 4, P. M., will be the chief "underwriter" on the crop, against damage from excessive heat, for a man who has no gardener, and can spend but *two hours daily*, in his garden. *Third*, the rain is turned with ease, and remains not a moment to do mischief to the glazing; the roof-lights, only fourteen sash in number, are grooved through the cross-rails and putty, outside, to allow the water to run off freely; the groove, or "gouge" being well rubbed over with white lead putty. *Fourth*, it looks picturesque. What if it is "gamble-roofed?" It reminds one only the more strongly of the good old times, and the substantial comforts within.

The remaining diagrams will be easily understood without much remark. *Fig. 15* shows a section of the frame of one end, all the frames being exactly alike;—*l, l*, represent the long rafters, 7 feet long, 2 by 4 inches pine joist. White oak strips or rabbets, $1\frac{1}{8}$ inch wide, by $\frac{5}{8}$ inch thick, are nailed strongly, edgewise, on the centre of each rafter outside, to form a groove, in which to slide the sash each side of it. *a, b*, represent these oak rabbets passing up over the heel of the short rafters, to which they are strongly nailed. These rafters are simply beveled together, without tenons; each frame is made on the floor, like the separate frames of a ship, well nailed and secured, past accident, by the strong cleats *c, c, c*, of 2 inch plank, cross nailed. The three sash that lie on the long rafters, are matched together, and made into one, by oak strips, screwed on each side, 7 feet long, $1\frac{1}{8}$ inch wide and $\frac{3}{8}$ inch thick; all the sash are $1\frac{1}{8}$ inch thick. The rabbets on the upper rafters, as also on the short posts

below, are 1 inch by $1\frac{1}{2}$ inch, of oak, and the sash have no strips on their sides. After the whole is completed and placed, these joints outside are covered with battens, 3 inches wide, secured by staples and "toggles," to keep out the

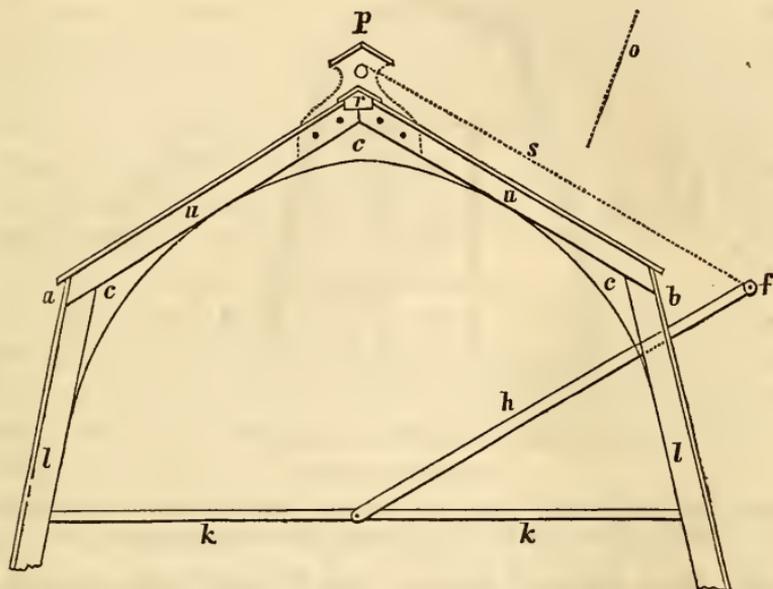


Fig. 15. Section of the Frame of one end of the House. (Scale, 2 feet to the inch.)

weather. There are no plates at *a* and *b*, but the frame is secured by strong battens, nailed lengthwise, on the inside of the cleats *c, c*. The ridge pole is seen at *r*, made from a 3 by 6 inch deck plank, and beveled on the upper side; to this ridge the roof glass is hung with "loose butts," and easily removed if necessary. They are raised by hooks, to ventilate the vines. The awning *s*, is rolled up on a shaft, 3 inches diameter, 22 feet long, under the coping *p*. The cross pole *f*, will also be shielded from the weather, under the coping, if the upright standards of the coping are cut as represented. This pole *f*, is hung at each end to levers *h*, playing easily on a pin in the top of each door-frame, *k, k*. The dotted line *o*, will represent the rays of the sun the 20th of June, for lat. 44° N.

Fig. 16 shows a hook projecting from the roof rabbets, to support the pole *f*. Fig. 17 shows how the coping is held up by two iron straps, fastened on the north side of the roof.

Fig. 13 shows the end framing of the house: short posts 20 inches by 2 thick, by 4 wide; rafters 2 by 4 inches; sills 4 by 6 inches, set edgewise; the door-frame 2 by 3 inch

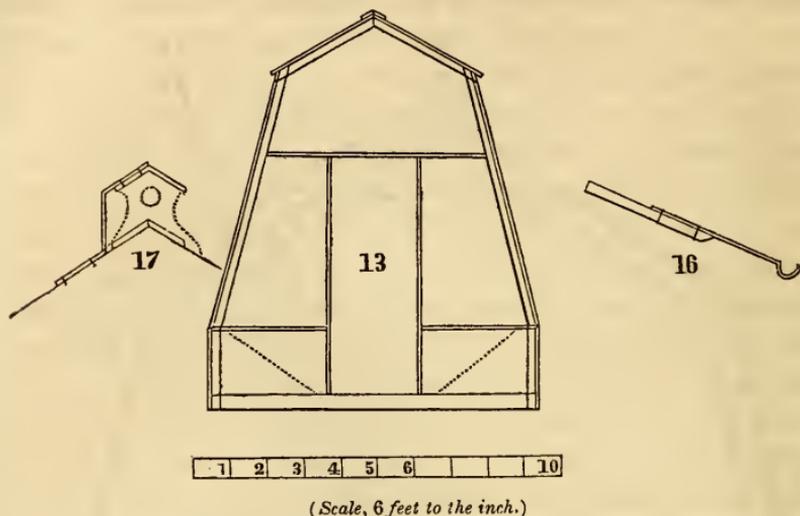


Fig. 17. Section of the Coping showing how it is held up. *Fig. 13.* Section of the Frame of one end of the House. *Fig. 16.* Hook projecting from the roof, to support the Pole.

joist; doors made of narrow sash, 3 lights wide, instead of 4. The dotted lines show the iron plate stays, to prevent spreading.

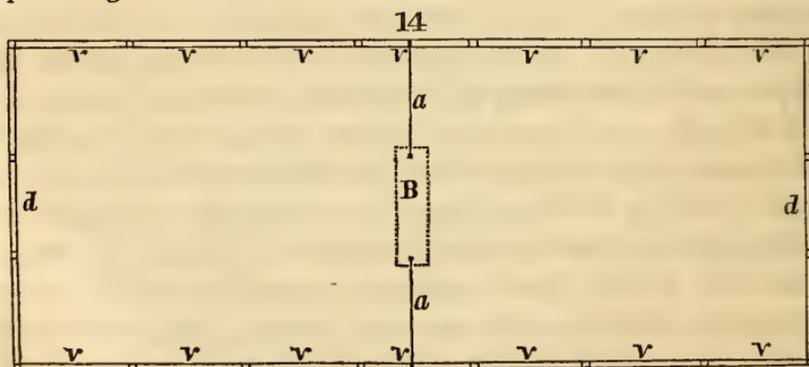


Fig. 14. Ground Plan of the Grapery.

Fig. 14 is a ground plan, showing the doors *d, d*; rock *r*, and stays *a, a*. The vines *v, v, v*, are placed in the centre of each light, and *not* under the rafters, *as usual*; there are 14 in number, 3 feet apart, and 8 inches from the sill of the house. They will grow eleven feet long, each,

and meet in the centre overhead. As it may be desirable to cover the whole with glass at a future day, there are the same number of posts and long rafters on the north, as on the south side, though this adds three dollars to the cost.

A word as to the glass. The very best is selected for the roof and front slope. The next best is in the top of the ends. The next on the front posts, and the poorest on the ends low down. My glass is very good; tinge, yellowish green; "enough sight" better than I have seen in many very costly houses. A great deal may be said about the glass, but I am writing for men of moderate means, like myself, and *we* always have to bear with *inconveniences*.

A very thrifty Buckthorn hedge is growing on the north and east sides of this house, three feet distant therefrom; but for the hedge, the house would have been twelve feet wide, which would be decidedly better. No lack of air, however, or light—only *room*.

But now let me redeem the pledge, that "it would cost \$3 50 per foot only." It is ready to put up, and I keep a strict account of every thing. A very few items only are estimates.

It should cost \$76 41, at \$3 50 per foot. Let us see.

Norway pine sills and pine joist, (whole frame,)	\$4 93
Labor, 5 days—planing, squaring, and framing, at \$1 50, - - - - -	7 50
250 feet of boards, for back and trimmings, \$4, labor on do., \$1 50, - - - - -	5 50
2 men 1 day, putting up the house, \$3, -	3 00
6 stone posts, at 54 cts.,—setting do., \$1 50, truckage, 20 cts., - - - - -	4 94
White oak strips and rabbets, (made,) - -	2 50
Ridge shaft, poles and braces for awning, (made,)	1 25
24 plank cleats, for rafters inside, (made,) \$1 50; 20 lbs. nails, \$1, - - - - -	2 50
Iron braces and stays, $\frac{5}{8}$ inch, 20 lbs., at 7 cts.,	1 40
Flat stone and drilling, 30 cts.; 14 pr. butts, \$1 12; 3 gro. screws, 84 cts., - - -	2 26

7½ yds. 6-4 sheeting, stout, \$1 05; tape and tacks, 18 cts.,	-	-	-	-	\$1 23
Paint, (cream colored,) inside and out; (whiting and lead,) -	-	-	-	-	3 00
Strips for vine bars, \$1 50; 16 lights, (fan,) sash, at 10 cts.,	-	-	-	-	3 10
642 lights, 8 by 10 glass, ready, sash painted, at 4 cts.,	-	-	-	-	25 68
Truckage of frame, &c., to the spot, 50 cts.,	-	-	-	-	0 50
					<hr/>
					\$69 29

Add border, average 18 by 30 feet, by 2 feet deep.

6 loads coal-pit loam, at 42 cts.; 2 loads old manure, \$2,	-	-	-	-	4 52
1 load old tan, 50 cts.; 1 do. old horn pitts, (tanyard,) 25 cts.,	-	-	-	-	0 75
2 days labor, digging and mixing materials,	-	-	-	-	2 50
					<hr/>
Border cost,	-	-	-	-	7 77
					<hr/>
Total cost,	-	-	-	-	\$77 06

Well, it has cost \$3.52 $\frac{92}{100}$. This is as near as folks generally talk, and for one I am satisfied. I am building yet another, 15 feet long, 3 feet wide, and 10 feet high. It adjoins the south end of my dining-room, and communicates therewith by two windows. It will cost me *short of* \$30. Good bye, for the present.

Wiscasset, Me., March 18, 1851.

We are much pleased in being able to give our readers the above plan of a cold grapery, adapted, as Mr. Johnston truly says, to men of "moderate means." We are well aware that many individuals who would like to grow a few grapes, are compelled to give up the pleasure of doing so, on account of the expense of erecting a house in the ordinary way; for it cannot be denied, that a well constructed grapery, finished in a workmanlike manner, in the common lean-to or span-roof form, will cost from six to ten dollars per foot, ac-

ording to style and finish. But there are many persons who care less about the architectural appearance of such structures than others, and who would like to have a house, regardless of style, provided it could be built for a small sum. For such persons, Mr. Johnston's plan is admirably adapted; combining, as it does, the important requisites of abundance of light, free ventilation, neatness of form, and cheapness of construction. Undoubtedly the expense of erecting such a building is somewhat less in the lumber country of Maine, than in Massachusetts; but in any part of New England, we doubt not, 20 per cent. additional cost would command as good a house, on the same plan.

It will be seen that Mr. Johnston goes systematically to work, in all he does, whether in the growth of his vines, or in the construction of his houses. He does not leave anything to guess work; but gives us the figures, that there can be no mistake. He offers us *his own*, and not *other people's* views, of what he knows of the culture of the vine, or the erection of cold graperies.

We do not offer Mr. Johnston's plan with the wish or the desire to have it take the place of houses built in the ordinary way, but merely for the object for which he constructed his own, viz., to afford gentlemen of "moderate means" a good plan for supplying themselves with grapes at "moderate cost."—ED.

ART. III. *The Principles and Practice of Grafting.*
From the Gardener's Chronicle.

NO. III.—SECTION II. GENERAL OBSERVATIONS ON CLEFT GRAFTING.—This mode of grafting is understood to consist in cutting the trunk, branches, shoots, and even the roots of plants, and making in the section a cleft which generally divides it into two equal parts,* for the introduction of kin-

* In some plants, of which the fibres are not strongly united, their trunks or their roots are sometimes unequally parted, by splitting the sides; this is the case with the Vine, the roots of Dahlias, &c.

dred grafts, in order that these may draw their nutrition from the stock during the period of its existence; sometimes the grafts survive the stock in consequence of striking root.

Without following the order of arrangement of those grafts by our great masters, I have united the small number of them which I propose to describe under one point of view; and shall treat of these in two paragraphs.

The first comprehends all those of which the stocks are thicker than the grafts, and for which ligatures may be generally dispensed with. As regards those constituting the second, the parts intended to be joined ought to be of an equal size; some of them the operator will be under the necessity of maintaining in their position by an envelope, or casing of paper; all ought to be secured with cotton thread, india rubber, or other elastic substance. By means of the modes of grafting comprised in these two paragraphs, all the kinds of plants to which these modes are applicable, will unite perfectly, by taking the precaution of joining, as exactly as possible, all the parts of the graft operated upon with those of the cleft made in the stock; but above all, especial care should be taken to make their liber coincide;* then cover the other wounded or exposed parts with some plaster, different kinds of which will be spoken of. With regard to those grafts on which the leaves are preserved, we should endeavor to keep them in a moist temperature of between 60° and 75° in a still atmosphere, and not subjected to bright light during a certain number of days, according to the tenderness of their foliage, which ought not to be exposed to the free air until it has been gradually accustomed to it. The places where the modes of grafting detailed in these two paragraphs ought to be performed cannot be fixed here, seeing that some of them ought to be made invariably below the level of the soil, on the under part of stems; others are made on roots, either woody or spongy,

* Liber, the line of demarcation which is found between the bark and alburnum of all woody and herbaceous plants; and when the cambium is carried abundantly towards this part, we can separate this line by raising up or deflecting the bark by a slight effort. When this is the case, we then say the trees are in sap. This condition indicates the time when most kinds of grafting should be performed.

separated from their parent tree, and which, after being worked, are planted in the ground, there to maintain their vital state, and feed the grafts which have been placed upon them; at other times, and most generally, we graft at the height of between four and six inches above the surface of the ground, and progressively; but it very rarely happens that it is necessary to graft higher than thirty-two feet. The thickness of the stocks, branches, &c., intended for the reception of the grafts mentioned in the first paragraph, varies from one-fifth of an inch to an inch and a half. All those approaching the latter size, and those still larger, intended for crown grafting, ought to be roughly cut back in winter, before they exhibit any signs of vegetation.

This operation ought to be performed from eight to twelve inches above the point marked out for the reception of the graft. The principal object in shortening back in winter, is to retain all the sap for the benefit of the grafts when they come to be joined at the time it is in full movement, and this somewhat precedes that of the scions, as we have stated in speaking of their preservation.

All the latent or adventitious shoots which spring from the stems or branches of grafted trees, ought to be checked, on small stocks, as soon as they make their appearance; but with regard to large subjects the proceeding is different; for until these shoots have acquired the length of six or eight inches, so long their presence is necessary, especially near the grafts, in order to attract or draw up the sap, which would otherwise frequently remain for a long time stagnant in the trunks and roots of large trees; as soon as they have fulfilled this function they should be cut back. The grafts, which till then are somewhat languid, acquire all at once a great development, and cannot, in consequence, sustain themselves without supports.

SYLVAIN INARCHING (*Grefse Sylvain*) *fig. 18.*—This mode of inarching is more especially adapted for uniting lozenges made with fruit-trees, pear and apple trees, trained as vases, of which the excessive vigor is required for the extension of the leading branches; this operation, performed at their points

of junction, puts their sap in communication and unites the different parts in a remarkable manner. We may also practise this mode on trees with strong stems. Being planted at some distance, bend their heads towards each other so as they may cross; make at this point a corresponding notch in each, like that represented at *a*, and unite the parts, as at *b*; and if they are thick, secure their contact with a strong nail, which should always be preferred to ligatures when there is much strain. The trees inarched by this proceeding may also serve for economical purposes, such as we have

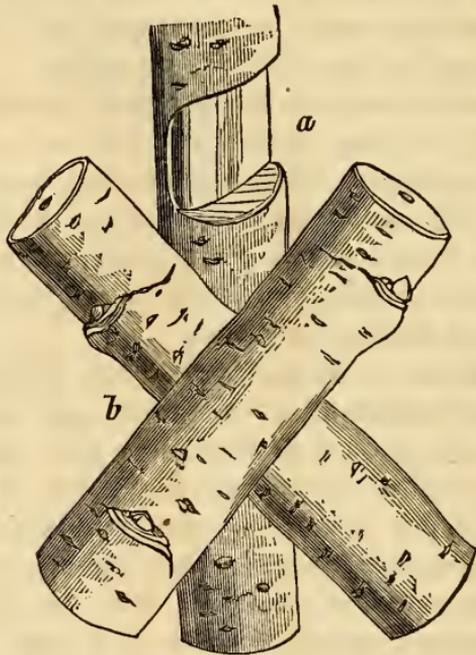


Fig. 18. Sylvain Inarching (Greffe Sylvain).

described in the preceding details. I am astonished that this simple mode of inarching is not more in use amongst some of our nurserymen who grow hedge-row trees.

INARCHING SMALL PLANTS ON LARGE STOCKS; fig. 19.—When one has plants with slender branches and shoots to inarch on strong stocks, proceed as follows:—Cut the head of the stock in a slanting direction opposite to an eye or small branch; make at the base of this wound a long triangular cut in the substance of the bark and alburnum, as at

a; its dimensions should always be proportioned to the size of the part to be inarched; cut the latter of an opposite form, and unite the parts; this union is sometimes difficult, on account of the difference which occasionally exists in the thickness of the barks. When perfectly taken, the inarched

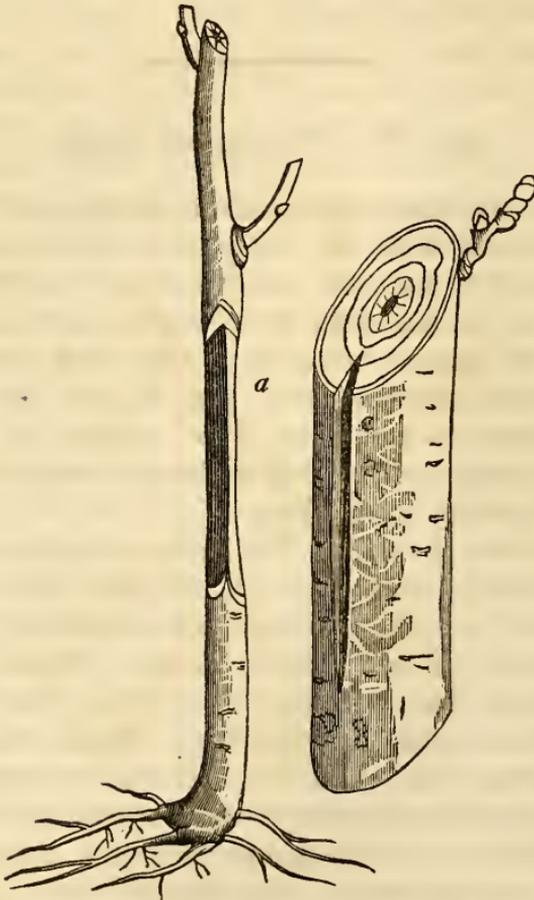


Fig. 19. Inarching Small Plants on Large Stocks.

portion is separated from its parent stem, as explained in treating of the Monceau inarching.

After this we cut back the heel, which has hitherto served as a point of attachment for the ligature, and a magazine for the sap which has aided in uniting the parts inarched. If we wish to perform this mode of inarching on a large tree,

of which the top has been broken by the winds, we plant near it a young one, and this can be inarched on the broken trunk as above indicated, excepting that instead of being sloped, it is cut horizontally. M. Thouin states that this mode is employed in the good climate of Caux ; but in many other places they prefer crown grafting such trees, in the manner described by Pliny ; others prefer grubbing them up.

ART. IV. *Pomological Gossip.*

OWING to the liberal supply of this information by our correspondents, the Hon. Mr. Cabot, Col. Hodge, and others, they have left us but little to say in regard to several of the new, as well as the older fruits, and we have omitted our gossip for the year up to this time. We shall not, however, allow anything interesting to pass without recording, and shall endeavor, as heretofore, if not monthly, at least occasionally, to keep our Pomological friends informed of all that is worth knowing among fruits.

THE KAISHA APRICOT. This new, and said to be superior new variety, introduced into England from Syria, by John Burke, Esq., the gentleman who introduced the Stanwick nectarine, is now offered for sale. Messrs. Veitch & Co., of Exeter, have the entire stock, which they are selling at twenty-one shillings sterling each. Some estimate of its value may be formed from the following account of it by Dr. Lindley, in the *Journal* of the Horticultural Society.

“The fruit is semi-transparent, roundish, five and a half inches in circumference ; skin slightly downy, pale citron colored when shaded, tinged and marked with red next the sun. Flesh tender, juicy, of a clear citron color, parting freely from the stone ; *sugary and delicious*, like well refined lump sugar combined with an apricot flavor ; stone small, roundish ; kernel sweet, like a nut. A valuable early variety for the dessert, and probably excellent for preserves ; if it be employed for this purpose, the transparency of its

flesh will exhibit a new feature among apricot preserves. Some of the fruits have ripened as early as the 12th of July, and on the same wall, at the same time, were Moorpark and Turkey apricots perfectly green and hard."

This variety will be introduced into our collections the present spring, and trees will soon be offered for sale. It will probably prove a valuable acquisition to our early fruits.

GROS BLEU GRAPE. This is the name of a variety received from France, a few years since, and which fruited in our collection last year. It is a handsome grape, with large berries, forming a good sized, rather compact bunch, not much shouldered, of a blue-black color, covered with a rich blue bloom; and of a fine flavor, resembling the Hamburg, but more brisk and vinous. It has so far proved a fine grower, a good bearer, and every way a superior grape, well worthy a place in every good collection.

NEW SEEDLING RASPBERRIES. It is gratifying to know that there is some hope of improvement in this long-neglected fruit, which for a century, until recently, has received no important accession to the old varieties. Dr. Brincklé, of Philadelphia, has, as many of our cultivators are aware, already produced several, which are said to be fine, and he has a great number of plants which have not been fairly proved, but which promise to be fine. The names of some of them are President Walker, Col. Wilder, Vice-President French, Orange, President Cope, &c., the three first named after his friends, Messrs. Walker, Wilder and French, of Boston; and several under numbers. We lately had the pleasure of calling on Dr. Brincklé, at his residence, in Philadelphia, and were gratified to find such a variety of seedlings, not only of raspberries, but of strawberries, pears, &c. In the small space of a city garden, the Dr. has specimens of each of the above sorts in bearing, besides several fruit trees, and numerous boxes containing his other seedlings; as in a paved yard, with the exception of a narrow border, this is the only means of cultivation afforded. When we have examined specimens of these new raspberries, we shall give a full account of them.

THE PRESERVATION AND EXPORTATION OF PEARS. Mr. D. T. Curtis, of Boston, who has been very successful in preserving various kinds of autumn pears, such as the Seckel, Louise Bonne of Jersey, Dix, &c., as late as January, and who has exhibited the specimens before the fruit committee of the Massachusetts Horticultural Society, for trial, has recently forwarded to the London Horticultural Society some beautiful Easter Beurrés. Mr. Curtis invited us to examine them before they were packed up, and we must acknowledge that they were in the finest state of preservation. They were forwarded in the steamship from Boston, the last of February, and were exhibited at the monthly meeting, April 1st. The following report upon these specimens we copy from the *Gardener's Journal* of April 5th.

“Mr. Curtis, of Boston, United States, sent a collection of the Easter Beurré pears, with the object chiefly, as was stated, of making an experiment to ascertain whether such fruit, when packed in a particular manner, could be preserved for any length of time; so as to make exchanges between one country and another. The process of packing adopted, consists in wrapping the pears in wadding; they are then put in soft paper, and thus covered, deposited in tin canisters, separately; the canisters being then simply packed with salt, in a strong box. One or two of the fruit which were examined appeared to be quite sound, but others were more or less decayed. It was evident, however, that had they been thus packed before they had attained perfect maturity, they would, in all probability, have suffered no injury; so far, therefore, the experiment may be considered as successful. A Knightian medal was awarded.”

We are gratified at this result, because we know Mr. Curtis has devoted much time to the preservation of fruit, and has been more successful than most cultivators in keeping fruits placed in his hands; and this, too, when he could not make his own choice, but take such as he could procure from those who raised them. Mr. Curtis has communicated his mode of preservation to the Massachusetts Horticultural Society, and the Fruit Committee will report upon it at a future day.

REINE CLAUDE DE BAVAY PLUM. A writer in the *Gardener's Chronicle* speaks very highly of this new plum. He states "that he planted it against an east wall, in the autumn of 1846, and it fruited for the first time last autumn. It is a very large and fine plum, nearly if not quite equal to the Green Gage, in flavor, and much larger, ripening about ten days later. It appears a free bearer, having borne last year more fruit than any other out of twelve different sorts planted at the same time. This spring I noticed a peculiarity which may account for its fruitfulness. Although growing very vigorously, it produced flower buds, not merely on the spurs, but also on the young wood. Shoots between three and four feet long have flower buds on them. No other plum with which I am acquainted exhibits this habit. A Reine Claude Violette, planted at the same time, has not yet shown one flower bud; and an old Green Gage has comparatively few. They are in a similar soil and situation; I therefore infer the new Green Gage to be a more fruitful kind. It is not quite so rampant as the Purple Gage, but stronger than the Green Gage." From the specimens we tasted last year, ripened around Boston, it appears to be a very valuable late plum.

NEW CURRANTS. The French and Belgian cultivators appear to have turned their attention to the production of new currants. The Gondouin currant has been introduced to our collections, and is tolerably well known; it is said to be a fine kind. A new variety is now announced, called the WHITE PEARL of Dielighem. The bunches are four inches long, and bear generally from twenty to thirty berries. The berry is spherical, quarter of an inch in diameter; the seeds perceptible through the skin; eye dark, and the berry like a beautiful pearl. It is the best white variety in cultivation, and was raised by M. Remi Wilquet, near Brussels. If this is an improvement on the white Dutch, it will be a valuable acquisition.

ART. V. *Notes on Winter and early Spring Flowering Greenhouse Plants.* By HORTUS.

DAPHNE ODORA.

THE *Daphnes* comprise everything valuable in greenhouse plants, except elegance of habit, and this, also, can be secured by a little attention; when they are growing, the points of the young shoots should be pinched out, to induce them to form laterals. They should be kept in the greenhouse until their growth is completed. A well drained pot, loamy soil, and frequent syringing will produce healthy, clean plants. Cuttings root readily, either old or young wood. The variety *rùbra* is decidedly the best.

POLYGALAS

Form trusses of purplish flowers at the ends of the shoots. They are rather straggly growing plants, and require to have their shoots well stopped back. They are easily raised from cuttings, and should have their pots well drained, and porous soil; they require to be kept rather dry during winter, the points of the shoots being liable to damp off.

ERICAS, OR HEATHS.

The following flower in winter. *E. grácilis*, *E. mediterrània*, *E. Sebàna*, *E. hyemàlis*, *E. Willmoreàna*, *E. verticillàta*, *E. cáffra*. They should always be set in the coolest part of the house, and no more water given than is absolutely necessary.

They require porous, fibry soil, well drained. Their delicate roots will not bear extremes, either of drought or moisture. They may stand out of doors for a few months in summer, if the pots are plunged to keep the roots from getting parched, and syringed occasionally on dry evenings.

MIGNONETTE.

This may appear a very humble plant for a greenhouse; nevertheless, few flowers are more esteemed for bouquets. To have it in flower at Christmas, the seed should be sown about the beginning of August, in four or six inch pots, thin-

ning the plants as they advance to five or seven in each pot. Water should at all times be very carefully given. The roots penetrate perpendicularly, to the bottom of the pot. Water seldom, but copiously; dribbling will soon kill them. Single plants will attain to a large size if kept from flowering.

LESCHENAULTIA FORMOSA

Is a favorite, delicate, dwarf-growing plant, bearing a profusion of bright red flowers, for nine months of the year. It requires to be carefully potted in light, fibry soil, mixed with pebbles, or charcoal; water very carefully, applied in winter and during dull weather. Grows with great vigor when grafted on the *L. biloba*. It is easily propagated by cuttings, which should not be allowed to flower until they attain a good size. Succeeds best in the greenhouse all the year, placed in an airy situation during summer.

HELIOTROPES

Are valuable when cut flowers are in requisition; cuttings struck in June, will form good sized plants, in five or six inch pots, before winter. They will flower profusely after being taken into the greenhouse. Plants may be lifted out of the flower garden in the fall, before frost, the branches pruned in a little, and potted. They will flower early in spring. They are well adapted for training on a back wall, or on the rafters; planted in such a situation they will attain a large size, and remain constantly in flower. *Voltariànum* is a desirable quality.

PIMELEAS.

These are fine spring flowering plants, requiring well-drained, turfy soil; prune close down when the flowers fade, and keep them in the house until the growths are hardy; if then placed out of doors they will ripen and ensure plenty of flowers. *P. hispida*, *P. decussata*, *P. Hendersòni*, and *P. spectabilis* are good varieties. They form capitate heads of pink, white, and red flowers.

CUPHEA PLATYCENTRA

This is a valuable plant on account of being almost al-

ways in flower. It is easily increased either by seeds or cuttings. It is a fine border plant for the flower garden, in summer, and if lifted before frost, and potted, shading for a few days afterwards, will suffer little injury, and keep flowering all winter.

BORONIAS.

Boronia serrulata, *B. anemonefolia*, and *B. viminea* are very fine plants, the former especially, its leaves having a peculiar freshness, forming a fine contrast with its rose colored flowers. In New South Wales it is called the native rose. The principal point in their management is to keep them in the warmest part of the house after the flowers fade, to allow them to make a good growth. At this time they should not be subjected to currents of air, or the foliage will assume a rusty hue. About the middle of summer, they may be set in a sheltered spot in the open air. They are increased by cuttings when the young wood is hardened.

EPIPHYLLUMS.

These are the most valuable of the *Cacti* family, and when grafted on *Cereus quadrangularis*, are quite hardy greenhouse plants. They flower profusely in December and January. They like plenty of moisture while growing rapidly; when the shoots begin to harden and feel firm, water should be gradually withheld, and the plants set out of doors. Cuttings root readily, but they flower more profusely, and are easier managed, when grafted.

AZALEAS

Require a free, turfy soil, with plenty of drainage, used in a dry state and pressed firm in the pots. This remark is applicable to all plants that form very small, hair-like roots. Shifting is most advantageously performed immediately after they have done flowering. When making their growths, keep them well syringed. When the young wood is ripened, they may be exposed to all weather, provided that the pots are protected from parching sun. When housed in autumn, keep them on short allowance of water until the flower buds

appear prominent. They can be raised from cuttings, but some of the best varieties are found to be shortlived on their own roots, and are generally grafted upon the more robust growers, as *A. phænicea*.

The following are distinct :

A. triumphans, *Leucomegestre*, *Remingtonii*, *speciosa*, *fulgens*, *coronata*, *speciosissima*, &c., and *A. variegata* and *Gledstanésii*, among the delicate growing ones.

CAMELLIAS.

These are prominent in every collection, and of easy management. They grow well in strong, loamy soil, always properly drained. When the flowering season is over, they will commence growing. Water freely unless they have been recently potted. In this case, care is requisite not to saturate the fresh soil until it is occupied with roots. Syringe overhead daily. When the shoots are assuming a brown color, the plants may be set out of doors. This exposure acts as a check to growth, and insures abundance of flower buds. They should be housed before cold weather in autumn ; not that the *Camellia* is a tender plant, but to avoid getting the soil saturated with cold rains. Allow them a minimum quantity of water during winter, as this is their proper resting period. Increase the supply as the buds open. The cooler they are kept, the longer will the flowers remain in perfection. They should always be kept in the coolest end of the house.

The following are suitable for a small collection :

Camellia double white, *Lady Hume's blush*, *fimbriata*, *candidissima*, *Landréthii*, *élegans*, *myrtifolia*, *imbricata*, *tricolor*, *Donckelaeri*, *Fordii*, *Feastii*, and *Henry Favre*, &c. ; these will give a good assortment of colors.

March 17th, 1851.

(To be continued.)

Our correspondent will continue his excellent remarks on select plants, and will offer a list of summer and autumn blooming varieties, following up with a list of climbing plants, and concluding with some general remarks.—ED.

REVIEWS.

ART. I. *The Flower Garden, or Breck's Book of Flowers ; in which is described all the various hardy herbaceous perennials, annuals, shrubby plants, and evergreen trees, desirable for ornamental purposes, with directions for Cultivation.* By JOSEPH BRECK, Seedsman and Florist, &c. 1 Vol. 12mo., pp. 336 : Boston, 1851.

THE title of this work, by our friend and former contemporary, Mr. Breck, fully indicates its character. It is, as it purports, a manual for the lover of flowers and plants, both herbaceous and shrubby, and a guide to the selection of the most beautiful varieties, as well as their general treatment and cultivation.

Mr. Breck has had long experience in the cultivation of flowers, and what he says is practical, and always to the point ; he makes no attempt at *fine* writing, so common with some authors, nor is he allured into a forgetfulness of his subject by dry technical descriptions ; but he gives a popular and understandable account of what he treats upon, and such instruction as will be of value to new beginners, for whom the work is more particularly intended. We copy its object from the preface :

“The object of this volume is the diffusion of general knowledge and practical information in relation to the flower kingdom ; particularly for hardy trees, shrubs and plants, desirable for the embellishment of the flower garden and pleasure ground. It is not designed as a scientific treatise for those far advanced in the knowledge of plants, but for new beginners, who are just entering the temple of Flora ; or as a book of reference to those who have but little time for research, and who desire some simple descriptions of the habits of plants or seeds, which they may wish to grow.”

The author remarks that the work was devised twenty years ago, and much of it written, but from unavoidable

causes it was then abandoned. The manuscript has now been revised and re-written, and with numerous extracts from the periodicals of the day, makes up the volume before us. It will prove a useful work to the uninitiated.

ART. II. *The Gardener's Text Book; containing Practical Directions upon the Formation and Management of the Kitchen Garden; and for the Culture and Domestic Use of its Vegetables, Fruits, and Medicinal Herbs.* By PETER ADAM SCHENCK, former Gardener to Edw. C. Williams, Esq. 1 vol. 12mo., pp. 306: Boston, 1851.

IF the products of our kitchen gardens are not greatly improved, it will not certainly be for want of information necessary to produce such a result. Messrs. Bridgeman, Buist, and other authors, one would suppose, had covered the whole ground, and yet Mr. Schenck comes forward with his manual, giving the results of long practical experience, adding to the stock of information already accumulated; and, in the completeness of his work, leaving, apparently, nothing to be desired. We can commend it as a cheap and instructive work.

ART. III. *The Western Horticultural Review.* JOHN A. WARDER, M. D., Editor. Two monthly Nos. Large octavo. 48 pages each. Nos. 2 to 6.

THIS is the title of a new Horticultural periodical, hailing from the "Queen City." We welcome it to the great field of labor, where "the more hands the more work," and where there is abundant need of all the aid that can be brought to bear upon the dissemination of valuable information in the progressing science of Horticulture.

The numbers before us should have had an earlier notice, but the desire to accommodate our correspondents, has pre-

vented us from finding space sooner. They are well filled with original communications and selected matter, and the numbers so far, (we have not seen the first) appear to be well worthy of the state and progress of gardening in the West. Our only hope is that it may find troops of friends, and live to a good old age.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

HEADING OR SPURRING IN HARD-WOODED PLANTS.—The following article is one of the best we have ever read on this subject, and is well worthy the attention of every cultivator. It will at once occur to all, that the meagre appearance of many collections of plants is owing to a want of the pruning knife; this want being kept up by the fear of injuring the plants, or losing a branch, particularly of such things as Camellias, &c. We especially commend it to amateur cultivators.—*Ed.*

There may be nothing very novel in my practice of assimilating the treatment of many hard-wooded plants to that of roses; but I have been to many establishments in which it has not been adopted, and it may, to some at least, be information when they are told that almost all hard-wooded subjects may be brought as completely under the control of the knife as the best habited of the varieties of the Queen of Flowers. I do not propose to notice all the families which flourish under such treatment; but experience has taught me that many plants, inclined to grow rambling and bare at the bottom, can be grown as fine, as shrubby, and as well furnished, for many years, as a young specimen grown up to perfection; and that, too, by simply treating them as we treat roses. But they must be commenced with as we mean to go on. Let me commence with the *Camellia japonica*, a splendid evergreen, generally spoiled at the onset, because all of us like to see the bud or the graft make wood early, and because it grows to a terminal bud, and sets for bloom, we have no heart, as it were, to deprive ourselves of its flower; the upshot of this is, that we have a foot of the new growth, the lower part being sacrificed to great expenditure of vigor, demanded by the flower, and, therefore, naked. Now, the plan I adopt with a plant which has made its first growth, and, it may be, set for bloom, is to cut the ripe wood down to the three lower leaves, before the bloom-bud even swells. Not one plant in ten fails to make three vigorous shoots, which, the second year, will be as strong as the one worked branch was the first. The second year, I cut the two lower ones down to two leaves or joints, and the top one to three. This operation rewards me in the third season's growth with two shoots each to the lower ones, and three to the centre one. I am not now

entering into the shifting that is annually necessary, because it does not affect the question of pruning, but, independently of these seven shoots, there may be laterals, and if they come too close or crowded, the spare ones should be rubbed off before they share any of the strength that may be wanted for the principal branches. The chances are, that I have a bloom-bud at the end of every shoot, and this third year I allow them to bloom; but, if there be two flower-buds close together, I pinch one out. If the shoot by the side of the flower makes an early push, which is the case with many varieties, I take it away; because I do not want to waste in growth the strength required for the blooms. As soon as the flowers decay, I cut all these seven down as before, regulating them to one or two (or occasionally even to three) eyes or joints, according as I see the plant requires, or does not require, branches. Every year I prune my plant as carefully as I would a rose, cutting away all weakly shoots, and, as the new growth commences, rubbing off all the buds that are growing where I do not want branches. The Fuchsia (which gardeners seem to stake their credit on growing as fast as they can, and producing a large plant from a cutting in a single season) requires the same care as a camellia or a rose. We ought to form the plant from the first, only; as it is a rapid grower, we may begin to form it by pinching out the leading shoot as soon as there are three or four pair of leaves; yet I prefer allowing it to have its season of growth, and ripen its wood. It may be that lateral branches have grown out near the bottom, and some varieties are of such fine habit that we can hardly improve them; but at the end of the season of growth, I let them rest, and before they make their spring start, I spur in all the strong side shoots to two or three eyes, and cut away weakly branches close, pruning down the centre shoot to three or four eyes above the highest spurs that I leave. The only objection that can be urged against this treatment for Fuchsias applies to but few varieties. There are some too succulent, but they will all ripen the greater part of their wood, and many will be found hard and perfectly ripe before they make their spring growth. Once get a Fuchsia to a good-shaped skeleton, as it were, and you may prune every year, with the greatest advantage. I have in the Fuchsia mentioned, the least favorable plant for my treatment, but I have never found it to fail in producing compact and well-furnished plants, prolific in bloom, and requiring no props. The *Weigela rosea*, which I have seen exhibited as a large bush, well flowered at the top, but sadly naked at the bottom, ought to be treated precisely as we should treat a rose. The very first year that it may be called a plant, cut the main stem down within four inches or even three inches of the pot, and whatever strong side-shoots there may be, should be shortened to even less than this, even to two or three eyes, while any weak ones should be removed altogether very close to the stem. This cut-back plant will throw out numerous shoots, and every shoot will flower. I have bloomed this plant the second season (so cut back) profusely. Let it make all the wood it may after blooming, but you should cut out all the thin shoots and spur back all the strong ones. The only guide you need have will be the form of the specimen, for it is always ad-

visible to prune away whatever is out of shape, without reference to anything else. The *Weigela rosea* will flower not only to the bottom of the wood, but the very shoots, that will, like suckers from a rose, break out below the soil, will bloom also; but let the plant grow its own way, and it has far from an ugly habit, and all the lower eyes will, like those of the rose, remain stagnant, and the flowers be, as they are usually seen, confined to the upper half of the plant. *Hovea Celsi* is a plant which, above all others, should be spurred; it should, however, be stopped while young, within three eyes of the bottom, grown slowly, and when the three shoots have made two joints each, pinch off the third. It may be grown then till it completes the shoots, and shows its bloom-buds, when it may rest; but, before it starts into growth again, cut all the shoots back to two joints, and continue this pruning system after every bloom, and before the plant makes its new wood. All the epacrises, many of the acacias, cytusus, heaths and azaleas, hibiscus, or indeed most plants that are not very succulent, will be improved by more or less of the treatment to which we subject roses, care being taken to prune before the new growth is made; and in plants which push their new growth before the bloom is over, the shoots should be removed, by pinching off the growing part. With epacrises this is essential, for they would, if allowed, grow some inches above the flowers before they faded; besides, by pinching off the ends of the shoots early, the flowers are more equally developed. In all pruning look well to the form you desire the plants to assume when their growth is completed, and cut in accordingly. I have found the knife as useful in the stove and greenhouse as it is among fruit trees, and I feel convinced that whoever takes a professional pride in good specimens, irrespective of size, will find the most awkwardly growing subjects very obedient, if they begin in time. Under the free pruning system there will be found little need of props, stakes, and wires, every one of which is a blemish; but so long as size is to beat symmetry, and handsome growing shrubs are allowed to be exhibited in frames, and the blooming wood to be bent and tortured to cover an even surface, there will be little encouragement for those who study the habit of a plant, and produce it as it should be grown without unnatural training. So long as a plant can be grown to support itself, so long ought any specimens unnaturally supported to be rejected; but of this, perhaps, I may at some other time have something to say.—(*Gard. Chron.* 1581, p. 197.)

NEW MODE OF PROPAGATING HERBACEOUS PÆONIES.—Over a tuft of pæony with herbaceous stems, place a box or pot without a bottom; fill the box or pot up with well-worked vegetable mould; the stems have then to make their way through this earth before they can produce any flowers. If the height of the box or pot is from thirteen to fifteen inches, it is of no consequence; the stems always rise through this thickness, and always attain the height fixed for them, and then develop their flowers. The soil should be kept damp all the summer, in order that roots may be formed in a proper way. Towards November or December, the stems may be cut off flush with the bottom of the box or pot, for they will be found furnished with roots throughout their entire lengths. The same stems may be cut into lengths,

and each length, having a bud and some roots, will, if placed in well-worked soil, produce a new plant. In planting these lengths, each should be covered with earth, about two inches deep, so that the plant may draw nourishment from the soil, and not be killed in frosty weather. In this way the stems of the double flowered *pæonia officinalis*, which are commonly annuals, become perennials, by the absence of light, and the obstruction artificially applied to their growth. All my experiments have been made on this plant, but I am convinced that similar results could be obtained from others of a like nature. Although the common *pæony* is exceedingly hardy and strong in constitution, no mode of multiplying it has been hit upon, except by dividing its roots, which greatly disorders the course of its vegetation. By the new process, many plants can be obtained, and the large roots of the original one remain undisturbed. Propagation by dividing the great roots is exceedingly easy; for each piece, carefully treated, gives in time a plant, but the plant thus obtained does not bear any flowers for the first three years, after which time development proceeds rapidly; the new process, above described, is much quicker. Chinese *pæonies*, which have been hitherto universally propagated by the division of their under-ground stem, may, I have every reason to believe, be multiplied in the new way. The common purple *pæony* and its varieties are often planted in the most unsuitable situations; they are put under trees, in large parks, or in clumps, in pleasure gardens; their stems are consequently poor, and their flowers not half so large as they should be. Placed in proper situations the common height of the purple *pæony* and its varieties is about three feet. In order that a tuft of *pæony* may grow well, it should occupy a circumference of two yards, and be placed where the gardener's spade can never wound its roots. The plant likes to be left alone and undisturbed; it does not like to be placed near other plants with long roots which intermix with its own, and deprive them of the moisture they require. It is only when these conditions are observed that fine *pæonies* are produced; if they are put under the shade of a large tree, their stems are weak, and are beaten down by the first storm of wind and rain. The space of two yards may seem unnecessary in the eyes of many amateurs, but let them recollect that it will soon be filled by stems themselves, a yard long, and which spread out from a common centre; besides, the roots are longer than the stems, and ought not to be interfered with. There used to be, many years ago, in M. Molé's park, at Méri-sur-Oise, a horse-shoe plantation of clipped yews. Between each yew there was a *pæony*; there was plenty of room for the growth of the *pæonies*; they had plenty of air and light, were never disturbed in any way, and bore magnificent flowers, which produced a very fine effect. I have never since seen as beautiful a plantation. The ground intended for *pæonies* must be well dug and loosened at least three feet deep, so that the roots, which spread in every direction, may act freely and for a long time; for these plants will continue to flourish for forty or fifty years, without showing any symptoms of decay, provided always they are never disturbed. The *pæony* is one of the few plants not attacked by grubs and insects; this is true of all its varieties. The earwig, alone, is sometimes found among its petals; but

they do not stay long, as the first fall of rain or heavy dew causes them to decamp. What we have said about the preparation of the earth is of special importance, when we are dealing with the Chinese pæonies, for their roots are as long again as those of the common variety, and their stems cannot acquire their proper height; nor can their flowers attain perfection unless there is a plentiful supply of nourishment. *Pæonia edulis* requires peculiar attention, for its stems naturally grow three, four, or four and a half feet high. Pæonies are extremely useful for decorating gardens, as the quality of the soil is not of great consequence, and the beauty and odor of the flowers are of the highest degree of merit.—(*Gard. Chron.* 1851, p. 119.)

ON THE CULTIVATION OF THE CHRYSANTHEMUM.—At one of the preliminary meetings of the Stoke Newington Society, the following paper was read on the culture of this flower:—

“The cuttings should be clean, strong, and short-jointed; not suckers, but strictly speaking cuttings. As soon as a sufficient quantity can be secured, which should be effected by the middle of March or the beginning of April, proceed with the striking as quickly as possible. When properly rooted, pot them, either singly or three in a pot, as the varieties may respectively require. In my opinion, some kinds succeed best potted singly, and make finer specimens; while on the other hand, others do best three in a pot; the varieties I should advise to plant singly, would be, *pilot*, *Queen of England*, *Annie Salter*, *defiance*, and *vesta*; of such sorts as *golden clustered yellow*, *Madame Poggi*, *gipsy*, *Madame Camerson*, and *Harris's Queen Victoria*, I should, by all means, recommend three plants to be placed in a pot. I use five-inch pots; when thoroughly established in these, I at once shift them into the pots in which they are intended to bloom, which should either be eleven or nine-inch pots, according to the inclination or convenience of the cultivator; if smaller pots are employed, it will be found extremely difficult to maintain a healthy and vigorous foliage on the plants, and although a good head of bloom may be secured, yet I think it will be admitted that this with bad foliage is unsuitable for an exhibition table; foliage, more especially, is what I aim at, almost at the expense of bloom. The soil I use and prefer, is maiden loam and dung, three parts of the former to two of the latter, with the addition of charcoal dust and coarse sand. Be particular as to drainage, or the foliage will be sure to suffer. With respect to watering, I apply water as often as is necessary, whether it be in the heat of the day, or in the cool of the evening. I frequently use the syringe from the time they are potted till the time they are in bloom; its application tends much to improve the color of the foliage, and has the additional advantage of keeping the plants clean and free from insects. I am an advocate for the use of liquid manure, and I give a decided preference to sheep manure water. It may, and I believe it is not so powerful as guano, but I consider it a much safer manure, more especially in the hands of an amateur; I also think that it has the effect of securing a neater and more compact growth, which is of importance in a specimen plant. I would advise the application of manure water from the middle of July up to the time of exhibition. Stopping the plants appears to me to be altogether wrong, although the

practice is strongly recommended by many writers on gardening. I have tried it, and can speak confidently as to the result, which has invariably been a decided failure. Be particular in tying out the plants properly in every stage of their growth; you should begin at the beginning, for if the operation is neglected until the plants have attained size, it is extremely difficult to make them assume the desired shape. By tying, in addition to form, you secure the branches from accident by wind or from other causes; and it also ensures a free circulation of air among the foliage and branches. I find three sticks to each pot, placed in the form of a triangle, sufficient; through these sticks I pass three rings of wire, one at the middle, the others near the top and bottom of the plant; the advantage of this mode of tying is, that it does away with the necessity of using so many sticks; and in consequence gives the plant a more natural appearance. I would recommend plunging the pots, but be sure you have a dry bottom; in such a situation the roots are kept cool without being wet; plunging has also the advantage of preventing the plants from being blown about by wind; be careful, however, not to plunge in a wet, cold, badly drained soil. The time for housing the specimens depends very much upon circumstances; as for instance, the weather, the precise date on which they may be required, &c. Housing will have the effect of slightly forwarding them; be careful not to shelter them too soon; if you do you will lose in a few days what has been the aim of a whole season to obtain, viz., good healthy foliage. The varieties suitable for specimen plants are the following:—Vesta, Annie Salter, gipsy, golden clustered yellow, defiance, Queen of England, Madame Camerson, pilot, Madame Poggi, The Duke, and Harris's Queen Victoria. I prefer growing two pots of each of the above sorts, which I can with confidence recommend. And now permit me to state, in conclusion, that the grand secret of Chrysanthemum growing (for I would be sorry to keep back any information that is at all calculated to enlighten you upon the subject) is time and attention. These constitute the keystone of success." An interesting and friendly discussion followed the reading of this and the succeeding paper, whose publication want of room compels us to defer until next week.—(*Gard. Chron.* 1851, p. 151.)

THE TREE PEONY OR MOUTAN GARDENS of Shanghae.—Leaving the south garden described in my last letter, I walked onwards to the Moutan nurseries. They are situated near the village of Fa-who, about five or six miles west of Shanghae, and in the midst of an extensive cotton country. On the road, I met a number of Coolies, each carrying two baskets, filled with moutans in full flower, which were on their way to the markets for sale. When I reached the gardens I found many of the plants in full bloom, and certainly extremely handsome. The purple and lilac-colored kinds were particularly striking. One, a very dwarf kind, and apparently a distinct species, had finely cut leaves, and flowers of a dark velvety purple, like the Tuscan rose of our gardens. This the Chinese call the "black" moutan, and I believe it is the same which Dr. Lindley has described in the "Journal of the Horticultural Society," and named *P. atrosanguinea*. Another kind called the "tse," or purple, has double flowers of a large size: this is

probably the variety reported to have 1,000 petals and which is said to exist only in the garden of the Emperor. The third is called the "lan," or blue. This is a lilac variety, flowers of the color of *Glycine siensis*. There are others of various shades of purple, perfectly distinct from these, and equally fine. The double whites are also numerous and handsome. The largest of these Dr. Lindley has named *P. globosa*, but there are four or five others nearly as large, and double. Some of them have a slight lilac tinge, which gives a richness to the color. The most expensive is one called "wang," or yellow, by the Chinese; it is a straw-colored variety, rather pretty, but not so handsome as some of the others. The reds (*hong*) are also numerous. Curious enough, those kinds which are common in Canton and England, are rare here. There are about half-a-dozen of new varieties of reds in these gardens: one of them called "Vanyang-hong" by the Chinese, is the finest flower I ever saw. The flowers are of a clear red color, unlike any of the others, perfectly double, and each measures about ten inches across. Altogether I numbered about thirty distinct varieties in these gardens. Nearly all these fine varieties of the moutan are quite unknown in Canton. This may seem strange in a country where the people are proverbially fond of flowers; but the Chinese are so machine-like in all their movements that, after a little acquaintance with them, we cease to wonder at the apparent anomaly. The fact is, the Canton gardens are supplied with moutans by another district, which lies much further to the west than Shanghai. From time immemorial the same gardens have supplied these flowers; they came always by the same road, and at the same time of the year. Shanghai, until the close of the last war, never seems to have had any connection with Canton, in so far as flowers were concerned, consequently these fine varieties of the tree pæony never found their way to the south, and from thence to Europe. The moutan gardens are numerous, but each is upon a very small scale; they look more like cottage gardens than anything else, and are managed in the same way as gardens of this description generally are, namely, by the members of the family. The female part of the community seem to take as much interest in the business as the males, and are very avaricious and fond of money. I invariably found I had to pay higher prices for the plants when they were consulted on the matter. The soil of these gardens is a rich loam, well manured, and thus rendered lighter in texture than that of the surrounding country in which the cotton grows. The propagation and management of the moutan seems to be perfectly well understood by the Chinese at Shanghai,—much better than it is in England. Our nursery-men always complain that they cannot propagate it with facility, and consequently this fine flower is invariably high in price. I will tell you how the Chinese manage the business, in order that your nursery readers may give the system a trial. In the beginning of October large quantities of the roots of a herbaceous pæony are seen heaped up in sheds and other outhouses, and are intended to be used as stocks for the moutan. The bundle of tubers which forms the root of a herbaceous pæony is pulled to pieces, and each of the finger-like rootlets forms a stock upon which the moutan is destined to be grafted. Having thrown a large number of these

rootlets upon the potting bench, the scions are then brought from the plants which it is desirable to increase. Each scion used is not more than $1\frac{1}{2}$ inch or two inches in length, and is the point of a shoot formed during the by-gone summer. Its base is cut in the form of a wedge, and inserted in the crown of the finger-like tuber just noticed. This is tied up or clayed round in the usual way, and the operation is completed. When a large number of plants have been prepared in this manner they are taken to the nursery, where they are planted in rows about a foot and a half apart, and the same distance between the rows. In planting, the bud or point of the scion is the only part which is left above ground: the point between the stock and scion, where the union is destined to take place, is always buried beneath the surface. Kæmpfer states that the Chinese propagate the moutan by budding; but this must have been a mistake, as budding is never practised in the country, and is not understood. He was probably deceived by the small portion of scion which is employed, and which generally has only a single bud at its apex. Many thousands of plants are grafted in this manner every autumn, and the few vacant spaces which one sees in the rows attests the success which attends the system; indeed it is rare that a graft fails to grow. In about a fortnight the union between the root and the scion is complete, and in the following spring the plants are well established and strong. They frequently bloom the first spring, and are rarely later than the second, when they are dug up and taken to the markets for sale in the manner I have described. When each has only one stem and one flower bud, it is of more value in the eye of the Shanghae nurserymen than when it becomes larger. In this state it is more saleable, it produces a very large flower, and it is easily dug up and carried to the market. I could always buy large plants at a cheaper rate than small ones, owing to these circumstances. In the gardens of the Mandarins it is not unusual to meet with the tree pæony of great size. There was one plant near Shanghae which produced between 300 and 400 blooms every year. The proprietor was as careful of it as the tulip fancier is of his bed of tulips. When in bloom it was carefully shaded from the bright rays of the sun by a canvas awning, and a seat was placed in front on which the visiter could sit down and enjoy the sight of its gorgeous flowers. On this seat the old gentleman himself used to sit for hours every day, smoking pipe after pipe of tobacco, and drinking cup after cup of tea, while all the time he was gazing on the beauties of his favorite "moutan wha." It was certainly a noble plant, and well worthy of the old man's admiration: long may he live to sit under his awning and enjoy such a sight!—*Fortune's Letters from Shanghae.*—(*Gard. Chron.*, 1850.)

MIGNONETTE.—As the common mignonette has ever been an especial favorite, on account of its sweetness, perhaps the following method of inducing it to assume the character of a bush, may not be uninteresting. Not later than the beginning of April, sow a few seeds in deep pots, filled with rich, sandy loam, place them in a melon frame where there is a good moist heat; when they have made about four leaves, pick out all but one strong plant in each pot; as they grow pinch off all side shoots, taking care to leave a leaf at the bottom of each. When the plants have attained the

height of twelve inches, they will show their blossoms. The latter must be nipped off, and at the same time the plants will require tying up to thin sticks, with matting; leave them about a week longer in the melon frame, taking care to pinch off all side shoots, then remove the plants to the greenhouse, where they will have less water and plenty of air; in a short time they will again begin to put out the top shoots, but only one on each must be retained, which must be led up the sticks, and all side shoots again pinched off. By this time the plants will be about eight inches high; the bloom must be again cut off, and the plants still kept in the greenhouse; in the autumn they will put out plenty of shoots from the top, and will form handsome bushes, which will come into flower in the following March; by cutting off the flowers, occasionally, for bouquets in the spring, they will send forth fresh shoots, and will continue to flower all the summer.—(*Gard. Chron.* 1851, p. 213.)

THE CHINESE PRIMULA.—At a season when all nature appears dull and almost inanimate, this beautiful plant makes our greenhouses lively and attractive, and much as has been said respecting its culture, no mode of treatment, which I have seen advocated, appears to me to possess advantages like that which I have been in the habit of pursuing. I sow the seed in a gentle heat in the beginning of April. As soon as the plants are up and sufficiently large to handle, I prick them out under handglasses at the bottom of a west wall, and shade them for a few hours during the day while the sun is powerful, giving them now and then a sprinkle with a fine-rosed watering pot, and keeping them close. When they begin to grow, the glasses are removed at night, as the dew of the morning greatly strengthens them, and it is astonishing how fast they advance in growth. When sufficiently large, I pot them into four-inch pots, and place them in a close frame until they have become established a little, after which the lights are drawn off every night in fine weather, and air is given in the daytime by tilting the lights at the back, shading the plants lightly during the hottest part of the day. When the pots have become filled with roots, I repot into six-inch pots, in which they are flowered. When they come into blossom, the most fringed and best-colored ones are carefully selected and marked. After they have done blooming, and rested for a short period, the greater portion of the soil is removed from the roots, which are cut pretty close in; at the same time the stems of the plants are cleared of old leaf-stalks, and everything is made clean and neat. They are then repotted in the following compost; equal parts turfy loam and peat, with a portion of well-decomposed cow-dung and silver sand in it. The compost is used in a rough state, with broken crocks below it for drainage; and the pots employed vary from six to eight inches in width, according to the strength and size of the plants. After potting they are placed in a close frame and treated exactly as recommended above. In this way I have grown splendid plants; and some have done better the third year than the second, but I have never tried them for a longer period. By following the same plan every year, fine plants and good sorts are secured.—(*Gard. Chron.* 1851, p. 215.)

SUMMER TREATMENT OF VINES IN GREENHOUSES.—In a lean-to green-

house, which the sun at midsummer leaves at 3 P. M., for years I never could obtain ripe grapes; after the half-hardy plants were taken out, there was not, according to ordinary treatment, sufficient length of summer left; the growths were lanky; and in October, when the house was wanted again as a greenhouse, the grapes were about half ripe, and no fire seemed to hasten them enough. This was on the principle of "plenty of air on all day, and close early, to shut in the sun heat." I have not much time to give to gardening, but I thought that a rapid and sturdy growth might be obtained with the same trouble or less than before. The following simple management secured this perfectly:—In the middle of April, all the plants which are required to be kept in form, are removed elsewhere. Alternate lights in the roof are slid down six or seven inches, and not moved again under any circumstances, during the whole summer; the door and lower windows always kept closed, and the house and vines syringed to soaking with soft water, every morning, at eight in hot weather, and, on bright days, again at noon. I had, the last two years, in September and October, as fine *Hamburgh* and *Chasselas* grapes as ever were seen. The whole advantage of the system seems to arise from the very high temperature obtained during sun-light, as high sometimes as 110° Fahr.; while the great moisture prevents parching, and, on the sun leaving, all excitement ceases, and the effects of a natural evening are in some measure induced. I cannot understand why, to this day, so many experienced gardeners recommend "shutting in plenty of sun heat." Surely the temperature should decline with the light. I believe a little actual frost would do less harm. The late Mr. Andrew Knight tried and approved of syringing overhead with the coldest water as soon as the sun was down, giving all excitement an instantaneous check; and I should adopt this, only I cannot dispense with the moisture at my other times, and syringing three times a day would be too much.—(*Gard. Chron.* 1851, p. 214.)

SIZE OF CONIFERS.—The following are accurate measurements of a *Deodar* growing here: height, fifteen feet; girth of stem, at three feet from the ground, thirteen inches; lateral branches at two feet, five feet nine inches long; at four feet, five feet six inches long; and at eight feet, four feet three inches long. The tree is well furnished with branches on all sides. It has been planted eight years, and it was four feet high when it was planted. The soil consists of about eight inches deep of common garden mould on strong clay. The stem is as straight as a walking stick; it has lost its leader twice, through, I believe, some heavy bird perching upon it, and on both occasions it has been replaced by a lateral, which answers as well as the leader, and from which, in a short time, it is undistinguishable.—(*Gard. Chron.* 1851, p. 230.)

ADAMIA VERSICOLOR.—People complain that this *adamia* does not flower freely. Plants of it treated in the following manner will, I have no doubt, prove satisfactory. Put in cuttings in the beginning of February as soon as they are struck; pot them off into three-inch pots, in a compost of equal parts marl, loam, leaf-mould, and peat, mixed with a little silver sand; place the pots in a cucumber frame, or a similar situation, for a few days, until the plants have become established, and then remove them to an intermedi-

ate house, which I find suits them best; shift them into larger pots as they require it, which will be found to be pretty often during summer, and finally place them in their flowering pots about the end of August. If they have been grown well, they require eleven-inch pots at this shift, to make the plants bushy. Moreover, the ends of the shoots may be pinched out two or three times in the course of the summer, but not later than the end of August. After they have had their last shift, place them on an airy shelf in the greenhouse, for a month or six weeks; then remove them to the intermediate house, keeping them rather short of water for a time, in order to give them a partial rest. When they begin to grow again, water plentifully, sometimes using weak liquid manure. They will flower in the end of March, and will continue in beauty some time. Cuttings are easily struck in heat under a bell-glass. It is a comparatively new plant, which, in my opinion, is its only recommendation.—(*Gard. Chron.* 1851, p. 230.)

CHINESE AZALEAS AND AZALEA GARDENS.—Adjoining the azalea grounds described in my last letter, as being five miles north of Shanghae, is another nursery, which contains a collection of plants very similar to those mentioned at page 5 of the current volume. One plant, however, was in bloom here at the time of my visit, which I must notice. It was a specimen of *Glycine sinensis*, in a dwarfed state, growing in a pot. The tree was evidently aged, from the size of its stem. It was about six feet high, the branches came out from the stem in a regular and symmetrical manner, and it had all the appearance of a tree in miniature. Every one of these branches was now loaded with long racemes of pendulous lilac blossoms. These hung down from the horizontal branches, and gave the whole the appearance of a floral fountain.

There are some more Azalea gardens to the eastward of Shanghae, which I also visited, but as they are much like those just noticed, I shall not describe them here. In all these gardens, the azalea is propagated readily and extensively. Layering is the common method employed, but grafting and striking from cuttings are also resorted to with success. During the hot summer months, both young and old plants are shaded from the mid-day sun. Most of these new kinds which I have been describing, flower early, that is, in March and April; the section to which the *A. variegata* belongs, flowers in May. After the flowering season has passed, the weather is generally moist, owing to a change in the monsoon. It is at this period that the plants grow most luxuriantly, and form their young wood; and this growth is completed and the wood ripened during the fine summer and autumn which follow. These northern azaleas are exposed to severe colds during the winter. At this season the thermometer (Fahr.) often sinks to within a few degrees of zero, and the weather is not unlike that which we have in England.

The azalea is indigenous in China, and is found wild on every hill side, like the heath of our own country. About Hong-Kong and Canton it is only found in a wild state, high up on the sides of the mountains, from 1000 to 2000 feet above the level of the sea. In latitude 25° north, in the province of Fokien, it is met with in less elevated situations, that is from 500 to 1000 feet high; and when we reach Chusan, in latitude 30° north, we find

it growing plentifully on the lower sides of all the hills, and never, or at least rarely, at a high elevation. We thus see how plants, which are naturally fitted for the temperature of one part of the globe, can accommodate themselves to another, by choosing a higher or lower situation on the hills.

Although this genus is thus found spreading itself over a vast tract of country, yet the northern parts just indicated, are evidently those in which it is most at home. All who have been in the island of Chusan, remember how beautiful the hill sides and woods were in the months of April and May, when the azaleas were in bloom. Every hill was a garden gay with flowers, planted and reared by the hand of Nature herself. Before I saw these hills, I thought nothing could be more magnificent than those gorgeous displays of azaleas at our flower-shows, and certainly, if we look merely at individual specimens, many of those reared by the skill of English gardeners surpass those which we find in a state of nature. But Nature plants and rears with no sparing hand; her colors are clear and brilliant, and she is not confined to greenhouses and flower-tents in which to display her productions, but scatters them with wild profusion over the sides of the hills. It is here that she is inimitable, and it is thus she produces effects which, once seen, can never be forgotten.—*Fortune's Letters from Shanghai, (Gard. Chron. 1851, p. 228.)*

ART. II. *Domestic Notices.*

BUFFALO HORTICULTURAL SOCIETY.—The annual meeting of this Society was held in Buffalo, on Wednesday, Feb., 19th, Lewis Eaton, Esq., in the chair.

After the reading of the Treasurer's report, which represents the Society in a flourishing condition, the election of officers for the year took place as follows:

President—Benj. Hodge.

Vice-Presidents—Abner Bryant, H. B. Potter, Joseph G. Masten, and Jas. W. Brown.

Corresponding Secretary—W. R. Coppock.

Recording Secretary—Jno. B. Eaton.

Treasurer—A. A. Howard.

Committee on Flowers and Flowering Plants—W. R. Coppock, J. W. Brown, I. F. Bryant, C. F. S. Thomas, and E. Ford.

Committee on Fruits—L. F. Allen, Lewis Eaton, H. W. Rogers, J. G. Masten, and J. Dart, Jr.

Committee on Vegetables—J. Sexton, O. Allen, R. Hadfield, S. J. Mills, and T. Burwell.

Mr. Eaton declined a reelection as President.

The Society voted to hold four exhibitions during the ensuing season—in the months of May, June, August, and September, and also to hold monthly meetings throughout the year, at such time and place as may have been appointed at the previous meeting.

The following additional premiums were offered :

For the largest and finest display of Fruits during the season, a diploma and \$5. For the second best, \$3. For the largest and finest display of Flowers during the season, a diploma and \$5. For the second best, \$3. For the largest and finest display of Greenhouse Plants during the season, a diploma and \$5. For the second best, \$3.

The following gentlemen were elected honorary and corresponding members of the Society :

Hon. M. P. Wilder, and C. M. Hovey, Esq., Boston ; Dr. W. D. Brinkle, Philadelphia ; Dr. J. A. Kennicott, Northfield, Ill. ; S. Young, Esq., Louisville, Ky. ; A. H. Ernst, Esq., Cincinnati, Ohio ; David Thomas, Esq., Greatfield, N. Y. ; B. P. Johnson, Esq., Sec'y State Agricultural Society ; J. C. Holmes, Esq., Detroit ; J. Dougall, Esq., Amherstburgh, C. W.—(*Buffalo Commercial Advertiser*).

THE DEODAR CEDAR.—Another winter has, more satisfactorily than ever, tested the hardiness of this beautiful Asiatic cedar. A specimen in our grounds, about five feet high, has stood out the last hard winter without the least protection whatever, not even with a covering of litter or coarse stable manure, which we usually give to newly planted trees. It is now just swelling its buds for the summer growth, and these are alive to the tips of the branches. No one may therefore doubt the hardiness of the Deodar in the latitude of Boston.—ED.

PINUS CEMBRA, and INSIGNIS, have also both proved perfectly hardy, not losing a single bud. These are each splendid species, more particularly the former, and deserve to be introduced into every choice collection of evergreen trees. The success which has attended the introduction of these trees, will induce us to try all of which there is any hope of their being hardy from the nature of their native locality.—ED.

REPORT OF THE POMOLOGICAL CONGRESS FOR 1850.—This has just reached us, incorporated with the Report of the Ohio State Board of Agriculture for 1850, of which it occupies about sixty pages. The late day at which it came to hand, prevents us from only noticing it here. In our next we shall give an account of it, as we have done with the previous reports of this association.—ED.

FAIR OF THE NEW YORK STATE AGRICULTURAL SOCIETY.—This Society decided, at its annual meeting, in January, to hold their next annual Fair at Rochester, N. Y., on the 16th, 17th, 18th, and 19th of September next, and appointed committees to carry the same into effect. The list of premiums has been published in the Journal of the Society, but they occupy too much space for us to copy. The premiums for fruits and flowers are liberal, and will undoubtedly secure considerable competition.—ED.

ART. III. *Massachusetts Horticultural Society.*

Saturday, April 5, 1851. The stated quarterly meeting of the Society was held to-day—the President in the chair.

The report of the committee, made at a former meeting, awarding the Society's medal to the Hon. B. V. French, was taken up and accepted.

A committee of three, consisting of J. S. Cabot, Jos. Lovett, 2d, and W. R. Austin, was appointed to carry the above vote into effect.

Adjourned three weeks, to April 26th.

[The following is the report of the Finance Committee on the Mount Auburn settlement, Feb. 1, omitted in our last:

Total sales of lots from January 1, to December 31, 1850,	\$13,598.97
Less allowance of expenses, - - - - -	1,400.00
	<hr/>
	\$12,198.97
One payment omitted, - - - - \$100.00	
Less sundry items, - - - - 22.00	
	<hr/>
	78.00
	<hr/>
	\$12,276.97

Proportion of the Society, one-fourth, \$3,069.24, which was paid over to the Treasurer.]

Exhibited.—FLOWERS: From S. Feast & Son, Baltimore, a fine seedling camellia, called Feast's Triumph, of Baltimore; a large and bold flower, regular, and full to the centre; color, pale blush or pink, irregularly striped with deep rose or bright crimson in the way of a carnation. Foliage large, glossy, and fine. The flower was somewhat injured by transportation so great a distance, but it proves to be a valuable addition to our striped camellias, of which we have, as yet, few good ones.

April 12. Exhibited.—FLOWERS: From John Feast, Baltimore, two fine seedling camellias, named Mary Troup and Mrs. Lurman; the former a handsome flower, of a deep rose, finely imbricated, resembling Sarah Frost; the latter somewhat resembling imbricata in form and color, but beautifully *mottled* instead of being striped. This one was raised, Mr. Feast informs us, from *rubricaulis*. Both are very fine seedlings.

From Messrs. Hovey & Co., a beautiful seedling camellia, full, double, very regular, cupped and fine; of a light rose, with a stripe of blush down the centre of each petal. Foliage handsome.

April 19. Exhibited.—FLOWERS: From H. Grundel, *Weigelia rosea*, in full bloom; an exquisite, hardy shrub.

VEGETABLES: From T. Needham, Young's Champion cucumber, twelve inches long; the first of the year.

[March 22. Josiah Crosby, West Cambridge, exhibited six heads of handsome Tennis Ball Lettuce.]

April 26. Exhibited.—FRUIT: From J. F. Allen, the first new grapes of the year; among which were Black Hamburgh, Grizzly Frontignan, Pitmaston White Cluster, Zinfindal, Early Black July, Chasselas Bar Sur Aube, and Miller's Burgundy.

From F. Tudor, Nahant, figs, prunes, and English walnuts, grown in his garden at that place.

From Mrs. N. A. Haven, Portsmouth, N. H., a sweet apple, of good size, and handsome form, with a greenish skin and blush cheek, which proved to be excellent at this late season; possessing a crispy flesh and an abundant juice. The committee thought it one of the best sweet apples for *late keeping* which has been shown at the Society's Hall.

HORTICULTURAL OPERATIONS

FOR MAY.

FRUIT DEPARTMENT.

THE month of April has been unusually wet, the ground in all but very dry situations having been nearly saturated the whole month; this has greatly retarded the spring work; and but for the cool northerly and easterly winds, vegetation would have advanced so rapidly that the planting season would now be nearly over. As it is, the season is no more forward than last year at this period. Saving the excessive moisture, the month has been a favorable one; no severe frosts have been experienced, and everything now bears the promise of a fruitful season; the easterly storms having already, it is hoped, spent their fury, there will be less of them in May, when the trees are in full bloom, or the young fruit just formed, as was the case last year, greatly damaging the crop.

GRAPE VINES in the graperie will now begin to swell their fruit, and will need considerable attention. Air should be given in all good weather liberally, and light fires put in very cool nights, as the least check is an injury to them now. Continue to damp down the walks twice a day, in all good clear and sunny weather. Keep the laterals cut in to the joint next the one which pushed last, and tie up the young shoots carefully, as they often break from their own weight. Thinning should be commenced as soon as the berries are as large as peas, which will be towards the last of the month. Grapes in cold houses should not be pushed forward too rapidly; give air freely, that the vines may better stand a change of weather. Vines in the open air should now be all tied up neatly to the trellis, if not already done. Manure liberally and dig the soil around the roots. Young vines in pots three or four inches high, will need a shift now.

PEACH TREES in pots will now have swelled their fruit to a good size, and will need an abundance of air. See that the red spider does not get the start of you, and injure the trees; fumigate with sulphur if they are troublesome. Water the plants occasionally with liquid manure or guano. Trees may yet be planted in pots.

STRAWBERRY beds may now be made. May is the best month, and if the work is well done, and the plants attended to, they will bear the greatest crop next year. Old beds should be cleared of all grass and weeds.

PRUNING of all kinds may yet be done ; it is the best month for this work.

GRAFTING may be safely done all this month. Head off trees budded last fall, and loosen the ties if not already attended to.

FIGS in pots will soon be showing their fruit, and will need small supplies of liquid manure.

TREES of all kinds will need attention as soon as the planting season is over ; they will require staking, ticing up, pruning, &c., to bring them into good shape.

FLOWER DEPARTMENT.

For the same reasons we have already named, the flower department, in common with the fruit garden, has been kept in almost a stationary condition during April. The damp and dull weather has required more exertion on the part of the cultivator to keep off mildew and disease. But if light fires have been put on, as they always should be, during such weather, no very bad effects need be apprehended. A liberal supply of water will be necessary as the season advances, and more frequent syringing in all fine weather. Give an abundance of air now to harden off the plants, preparatory to their removal to the open air.

DAHLIAS will now be objects of particular attention with every lover of this beautiful flower. For early blooming the roots may be divided and set out as early as the 20th of the month ; a second lot should follow these for exhibition, and then a third lot for the same purpose, which generally produce the finest flowers.

TULIP beds will require looking after ; if the soil has not been stirred and loosened, see that it is done immediately.

RANUNCULUSES planted in March or April will now begin to come up, and if the weather is hot and the soil dry, the beds should be shaded from the noon day sun, and occasionally watered. It is also a good plan to top dress the bed with half an inch of sand or very old manure.

CARNATIONS and PICOTEEES wintered in frames, should now be planted out in beds. Seeds may be sown now for raising new kinds.

AZALEAS will now be growing rapidly, and should be liberally supplied with water ; prune in straggling plants, and pinch off the tops of the new shoots so as to make bushy plants.

VERBENAS may be planted out as soon as all danger of frost is over.

ROSES in pots, wintered in the house, should be planted out in the open ground this month. Make the ground rich, and dig it as deeply as possible.

ACHIMENES will now need a shift into larger pots ; if properly attended to they will be among the finest ornaments of the greenhouse during the summer. GLOXINIAS and GESNERAS, which require nearly the same treatment, should be repotted if they require it. A light, open soil, and a warm situation, are all that are necessary to produce the finest plants.

FUCHSIAS will now require attention ; if fine specimens are wanted, shift the plants as rapidly as they fill their pots with roots ; with a good rich soil they will make plants three feet high by July, and will flower till October.

CHINESE PRIMROSES, of the double kinds, will require attention. Now

is the time to increase the stock by cuttings. Sow the seeds now of the single sorts in order to have good strong plants early in autumn.

CYCLAMENS, done blooming, should be placed in a cold frame in a half shady cool place.

HEATHS may now be shifted into larger pots, and plunged in the ground, or the plants may be turned out and planted in a light peaty soil.

CINERARIAS done flowering may be planted in the open ground, where they will make an abundance of small shoots, which may be taken off and repotted in August.

CHRYSANTHEMUMS may be propagated from cuttings or suckers.

GREENHOUSE PLANTS of all kinds will need attention. As they are taken from the houses, the last of this month, see that they are in good health, and do not need repotting; and on no account crowd them together in some out-of-the-way corner, if they are worth keeping at all.

ANNUAL SEEDS of all the hardy and tender kinds may now be planted in the open ground. The list is too numerous to particularize; but on no account omit such things as asters, balsams, portulacas, globe amaranthus, coxcombs, &c.

FLOWER GARDEN AND SHRUBBERY.

This month will be a busy one in this department. In our climate, generally, but little can be done in April, other than pruning, preparing the ground, making walks, laying edgings, &c. But this month all is activity. The whole garden and shrubbery should now be dug, and where there are large collections of herbaceous plants, many of them will require to be reset, re-arranged, &c. Flower seeds of all kinds should be got in—annual, biennial, and perennial, and a stock of bedding-out plants be put in a state of forwardness to plant in June. Box, thrift, and other edging should now be planted, if not already done. Roses wintered in frames should be put out, as early as possible, that they may get well established before warm weather.

Lawns should now have attention. If the surface has been disturbed much by frost, let it be well rolled with a heavy roller; manure well with guano. Spread on at the rate of 300 or 400 lbs. to the acre, according to the condition and richness of the soil. If the weather continues warm, they will need mowing this month. Many kinds of climbing plants may always be procured in pots, and these should be planted to cover up bare walls, fences, or unsightly outbuildings.

VEGETABLE DEPARTMENT.

All kinds of vegetables, with the exception of tomatoes, vines, peppers, and a very few tender things, may now be planted. The above sorts, unless planted now in *frames*, should be procured from nurserymen, who forward them in hotbeds. The produce of such early plants will pay more than ten times their cost.

Continue to sow seeds of lettuces, radishes, peas, beans, &c., for successive crops.

THE MAGAZINE
OF
HORTICULTURE.

JUNE, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Insects Injurious to Vegetation.*

By Dr. T. W. HARRIS.

NO. I. THE CURRANT-TREE BORER.

WHOEVER has paid any attention to the cultivation of the currant-bush, must have seen that it is very liable to be more or less broken every year. The inexperienced observer, on finding the whole stem, or several thrifty shoots, half severed in the early spring, and hanging downwards, may attribute the damage to the force of the winter's wind or to the weight of the drifted snow. Somewhat later, when branches, clothed in the fresh verdure of their tender leaves, and hung with many graceful tassels of yellow flowers, are bowed to the ground, he may think that a careless blow has thus stricken them down. Again, when the clustered fruit has begun to swell and to redden into ripeness, full many a loaded branch will be found trailing its strung rubies in the dust, as if suddenly yielding, at some accidentally weak point, to the increasing burthen. If, however, the observer duly considers the plant through all its vicissitudes, he will come to the conclusion that neither wind, nor snow-wreath, nor careless treatment, nor casual weakness could have broken short its budding, blooming, and blushing promises. He will look for some one specific cause of the injury. On examining the broken ends of the stem or branch in midsummer, he will find them perforated, in the direction of the pith, to the ex-

tent of several inches, and with a large hole, through the broken portion, communicating with the blackened channel. These perforations, by weakening the stem, have caused it to break off where the external orifice had been made. If the broken ends are carefully split open in the spring, the injury may be traced to its true cause ; for, in one or the other end, there will be found a soft whitish worm, about half an inch long, having a brown head, and creeping in its burrow with six slender claw-feet before, and ten very small stump-feet beneath the other part of its body. A magnifying glass brings to view a few short hairs, growing singly from small warts on the skin of this little worm. About the middle of May, but sometimes sooner and oftener later, these worms, or more properly caterpillars (for worms have not any feet and differ from these insects essentially in other respects), having come to their growth, creep towards the mouth of their burrows, and begin to line the portion wherein they are resting with a thin web of silk, spun from their lips. Should one of these caterpillars happen to find itself too far from the orifice to return to it readily, it gnaws a new hole through the wood, but leaves the thin outer bark untouched, and then weaves a silken shroud around its body in the same way as the others, and the rind that covers the hole easily yields to the efforts of the insect when it subsequently wishes to leave its burrow. Soon after they have thus finished their caterpillar labors, they cast off their skins, much after the manner of a snake, only that the skin is not turned inside out by the operation. They then appear in a new form, namely that of the chrysalis, an oblong or spindle-shaped body, without distinct limbs, which, although they exist, are fast soldered to the surface by a kind of brown varnish, that oozes out immediately and covers the whole body. The hinder extremity is surrounded with several small and short spines, and the edges of several of the transverse rings of the back are beset with exceedingly minute and sharp teeth, pointing backwards. The change to the chrysalis form may take place as early as the middle of May, or may be deferred to the end of June, according to the age and condition of the insect. In the

course of two or three weeks more, the chrysalis pushes through one end of its silken case, and, by the help of the transverse rows of teeth upon its back, which serve instead of feet, it works its way to the mouth of its burrow, and sometimes half way through it, into the open air. Then the chrysalis skin bursts open at the end, and from the fissure come forth the head, horns, limbs, and body of a slender four-winged insect. While at rest, its narrow wings are carried backwards like those of a fly, and the silky tuft at the end of its body spreads out like a fan-shaped tail, *fig.* 20. When about to take



Fig. 20. *The Currant-tree Moth.*

flight, its wings expand at right angles to the body, and then measure eight or nine-tenths of an inch from tip to tip: they are mostly transparent as glass, and glitter with the varying tints of the rainbow, but are veined and fringed with black, and across the tip of the anterior pair there is a broad opaque band which is tinged with copper-color. The rest of the body is of a brilliant blue-black color, except the under side of the feelers, the collar, the edges of the shoulder-covers, the breast, and three narrow rings across the hind-body, which are golden yellow. The males have an additional yellow ring on the body. Every fair day, from the first of June to the end of July, some of these graceful and pretty insects may be seen, basking in the sun-shine upon the leaves of the currant-bush, and alternately opening and shutting their fan-like tails, or darting with swift and noiseless flight from place to place. The females lay their eggs singly near the buds of the currant-bush. The eggs are soon hatched, and the little worm-like caterpillars immediately gnaw through the tender rind, and burrow in the stem which they penetrate to the pith. They make their way downwards in the stem, devouring the pith, and from time to time enlarge the mouth of their burrow, for the more easy discharge of their castings. They come to their growth mostly before winter, during which they remain at rest, or early in the spring, when they pass through the transformations already described. Naturalists call this insect

Ægeria tipuliformis. It is a native of Europe, whence it was introduced with the cultivated currant.

Nothing remains to add to this chapter of insect-life, but some advice, which, to have its full effect, should be followed by all whom it may concern. Early in the spring, which is the best time for pruning the currant-bush, let every stem and branch that is perforated and broken be cut off below the seat of injury. If a hole be found in the remaining portion, insert therein a knitting-needle or piece of wire, and push it down hard so as to kill any insect that may be there concealed. The branches that have been cut off, or *those portions of them that are perforated*, should be gathered together and *should be immediately burned*. The sound portions only, if wanted, and if suitable, may be reserved to be planted as cuttings.

Cambridge, May, 1851.

ART. II. *The Currant and Gooseberry, grown as Pyramids*. By DR. LINDLEY. FROM the *Gardeners' Chronicle*.

Few fruits of the excellence of the currant and gooseberry are more neglected in their cultivation. Either for the desert or the kitchen they supply an important place, yielding their fruit for two or three successive months, and the currant, if properly managed, supplying the latter with its valuable fruit from July to November.

In an article in one of our earlier volumes, (VIII, p. 324,) we detailed the culture of the currant in the ordinary way; and in our notice of the gardens at Chatsworth, (Vol. XI, p. 94,) we noticed the plan of growing them in that celebrated place as pyramids or standards, and recommended the plan to our own cultivators.

But like all new and untried methods of cultivation, which must be often brought to notice before their being adopted, we presume but few American cultivators have yet attempt-

ed the growth of the currant or gooseberry in this way, and it is therefore with pleasure that we again call their attention to this method, and commend to their careful perusal the following excellent article from the *Gardeners' Chronicle*.

Having seen the specimens in the kitchen garden at Chatsworth, in full bearing, we can testify to their beauty, as well as their utility, and we hope we may soon see trees of equal symmetry in the gardens of our cultivators.

Nothing can be more ornamental than a walk bordered with currants grown in this way, with straight and clean stems, a foot or more high, and the branches pruned so as to form a perfect pyramid, to the height of six or seven feet. Either arranged in this way, in squares by themselves; or trained to trellises, as recommended below, each and all of the methods are worthy of general cultivation :

Few things in gardening are more generally cultivated than the gooseberry and currant; they are indeed everybody's fruits, and at this season every one possessing a garden, however small, will be devoting some little attention to regulating their plantations of these useful plants. We not unfrequently notice these fruits occupying some out-of-the-way corner of the garden, as though they were only a secondary consideration; and even when ranged along the sides of the kitchen garden walks, their branches are allowed to spread out so far horizontally, that the fruit is shaded, and much valuable space is lost. But in some gardens, as those at Trentham, for instance, considerable importance is given to the small bush fruits, by having them either trained to neat trellises, or as standards or pyramids. By adopting such methods, the trees are more exposed to the action of the sun and air, and the fruit is consequently much improved both in quantity and quality, besides being kept perfectly free from grit, which destroys so much of the fruit upon low bushes; while, by the use of half-inch netting, the fruit is secured from the depredations of birds, and the late kinds are preserved for a considerable time after they are fully ripe.

We would not devote the whole of the side borders of a

kitchen garden to these fruits, for the apple and pear answer admirably for such situations; but would prefer arranging the gooseberry and currant bushes by themselves, in such a manner as to obtain the greatest quantity of fruit from the least possible space consistent with a proper admission of sun and air, and so that they could be more easily protected either from birds or weather. Some varieties, such as the Champagne and other upright kinds of gooseberries, and all the currants, are admirably adapted for training as pyramids; these we would plant 5 feet apart, along the centre of a border 8 feet wide, having a gravel path 2 feet in width, between it and the vegetable compartment. These should be trained to a central stem, 6 feet high, and the side shoots shortened in, so that when the plants have arrived at their full size, they should be of a pyramidal form, $2\frac{1}{2}$ feet in diameter, at the base, and 5 feet high, supported by a stem 1 foot in height. The weeping kinds, such as the Warrington Red, should be trained as standards, with stems 3 feet high, from which the branches spread and hang around, umbrella fashion. These should occupy the side rows of the border, standing opposite to each other, and alternating with the pyramids; filling up the vacant spaces with strawberries, not in rows, but in groups.

A border treated in this manner has the most orderly and pleasing effect possible; besides which, the economy of the plan is evident, as the pyramids being high, much fruit is obtained; and by placing the dwarfs alternately with them, no space is lost, while the sun has perfect freedom of access to every part of every tree.

A kitchen garden having the borders along the sides of the principal walks furnished with neatly-trained fruit trees and bushes, has a much better appearance than when the apple, pear, gooseberry, and currant are intermixed one with another, and the stronger growing kinds are allowed to overshadow the weaker, by throwing their coarse watery shoots so high in the air as to exclude the sun from everything near them. A few years back, the space at Trentham devoted to fruit trees and bushes in the kitchen garden, was reduced to

nearly one-half, with the view to growing more vegetables; the apples and pears were trained to vase-shaped and bell-shaped trellises alternately; and the gooseberries and currants as standards and pyramids. By having the trees planted on a prepared bottom, and carefully root-pruned when necessary, and the branches properly pruned and trained, there is now not only an increased quantity of fruit, but the quality is finer.

No doubt there are parts of this country where apple and pear trees grow almost as freely as willows, and yet ripen their wood perfectly, even when left nearly to nature; and in such places orchards of considerable extent are formed;—but we have in view such situations only as the best of our new hardy kinds of pears and apples do not succeed in, and where the gardener is, notwithstanding, expected to have plenty of fruit. In such circumstances is it that the placing of the various kinds of fruit trees and bushes under as perfect control as possible, becomes a matter of importance not only to the gardener, but to the owner.

Another plan adopted at Trentham would be not only economical in kitchen gardens of limited space, but a most agreeable thing, particularly during hot weather. It consists in throwing a light arched trellis of iron, about 8 feet high, over a walk or walks, running south and north, or in any other direction, if the kind of fruit intended to be grown on it is suited to the aspect. Such trellises as these are cheaply put up, and are not only much admired for their effect, but are so readily got at to prune, tie, and otherwise manage the trees, that we look upon this as the very best way of growing the hardier kinds of pears and choice apples. The effect of an occasional red currant planted between the other trees, upon these arched trellises, is excellent, and is the nearest approach that can be made in the open air, in this country, to the vine-covered walks of warm climates, as we sometimes see them represented in old Italian paintings.

ART. III. *The Principles and Practice of Grafting.*

From the Gardeners' Chronicle.

NO. IV.—CLEFT GRAFTING, (*Part 1st,*) WITH ONE SCION, AND THE STOCK CUT SLOPING: fig. 21. (*Grefte à un seul rameau, dont une partie du sujet est coupée en biseau.*)

M. Thouin has named this in honor of Bertemboise. It is one of the most usual modes of propagating many woody plants.

Operation.—The stock is prepared as indicated by fig. 21. The lower part of the scion, *a*, should be made thin, by slicing off a portion from each side, and forming a small shoulder at the top of the slope, as near as possible to which there should be an eye; the side of the scion on which the bark is left, should be broader and longer than the opposite side, by one-fourth, or frequently by one-third, or more, according as the stocks are large or small. For the latter, the inside of the scion should be cut very thin, with a short slope; and when intended for large stocks, the same side should be left fuller, so that

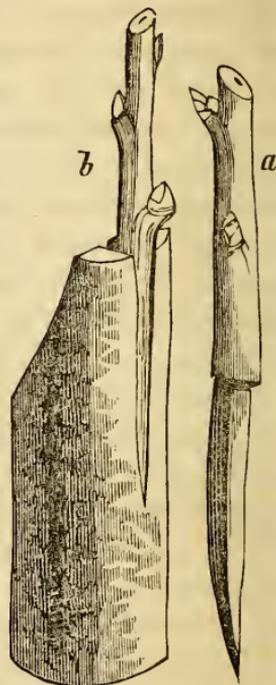


Fig. 21. *Cleft Grafting with one Scion on a sloping stock.*

the scions may better resist the pressure to which they may be subjected when they are introduced into the cleft. They usually leave two eyes to the scion, but the second is often superfluous; for the one nearest the small shoulder has an immense advantage in this respect, that when the scion is introduced, as is represented at *b*, it is close to the top of the stock, and as soon as it begins to grow, it forms a basis on the latter, and thus coöperates in healing over the wound of the stock. This position of the lower bud ought to be

attended to in all the modes of grafting described in this section.* The scion, such as it is represented, should be introduced in the cleft, prepared as follows:—by means of a strong knife, or preferably, by a sort of cleaver and small bat.† The first of these should be placed across the transverse section of the stock, and driven into the latter in such a manner as to split the bark before the wood; and always taking care that the cleft extend but little, if at all, to the bark on the opposite side, at the lower part of the slope; and on the other side, where the scion is to be inserted, it ought to be, at first, shorter than the wedge-shaped portion of the graft. This being done, the instrument is quickly raised by one or more strokes of the small bat on its under side, thus avoiding any kind of twisting; then the wedge-shaped beak, at the end of the handle of the cleaver, is introduced slightly into the cleft, so as to keep it sufficiently open for the introduction of all the wedge part of the scion; and this should be done in such a manner that the liber, or inner bark of the stock, may correspond as nearly as possible with that of the scion. But as we cannot always judge when this is exactly the case, it is better that the liber of the scion should be slightly outside of that of the stock, rather than that it should be placed in contact with the young wood. The graft being properly placed, we cover the wound with a mixture of equal parts of fresh loam and cow-dung; but it is better to do over the parts with the resinous composition adapted for covering the large wounds of fruit trees and others.‡ This composition ought to be applied more especially on the eye of the scion next the top of the stock, in order to

* The good M. Thouin has not sufficiently urged the importance of this practice, and one of his compilers has not even mentioned it. M. Thouin only states that there are some who place this eye in the cleft of the stock; and he adds, with reason, that the upper part of the section of this stock cannot be covered by woody layers, seeing that there is nothing to attract the sap to that part, which consequently dries up, and forms an obnoxious stub in all the trees thus operated upon, not even excepting the vine, for which this mode of proceeding has been extolled.

† This BAT is a small, round, wooden instrument, resembling a constable's staff. It is used to strike downwards upon the back of the knife, and upwards against its edge.

‡ This consists of Burgundy pitch, four parts; black pitch, yellow resin, and beeswax, of each one part.

secure it against insects and the bad weather which may supervene. Afterwards, there need not be any uneasiness on account of this coating; when the sap is put in motion, the resin liquifies sufficiently for permitting the growing shoot to pass freely through it. (What I have stated concerning the appliances to this mode of grafting, ought to be rigorously observed as regards all the others comprised in this paragraph.)

CLEFT GRAFTING WITH A SINGLE SCION, formed as the preceding; the stock cut horizontally: fig. 22. (*Grefte Atticus of Thouin.*)—Some additions have been made to this mode of grafting, in order to avoid repetition, seeing that they often employ modifications of it for large tubercular roots, herbaceous stems, &c., on which they graft, with good success, young herbaceous twigs, and others; but it is a bad proceeding for woody plants in all cases where the stocks are as thick, or thicker, than the little finger, because their transverse horizontal section is difficult to heal. But for small stocks, only two or three times the thickness of slender scions, such as we meet with in the state of small shoots, bearing leaves, sometimes flowers and fruits, it is well adapted; in this case the

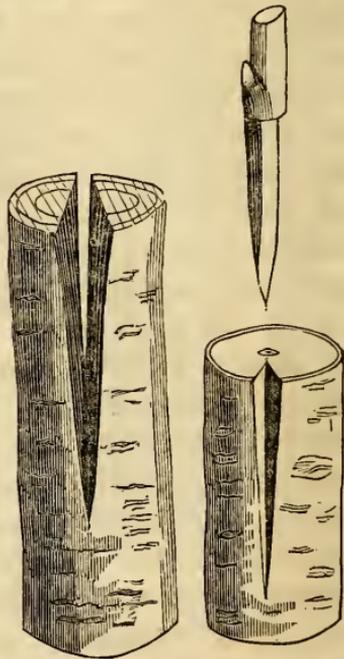


Fig. 22. Cleft Grafting with a single scion.

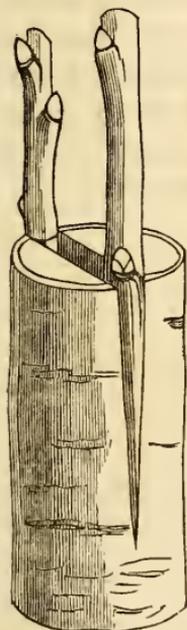
young shoots are split on one side,* see fig. 22; and in this cleft the scion is introduced. If it should happen that the latter be too large for the stock, cleft as already detailed, and of which the fibres are not sufficiently elastic for permitting

* When we adopt this mode of grafting on herbaceous stems or branches, they ought to be cut above a leaf, or young branch; then the cleft should be made opposite to them, and these small productions from the stock immediately below its section, ought to be preserved almost entire until such time as the graft shall have completely taken.

the scion to be inserted, we take off from the cleft one or two small parings, so as to give it a triangular form, (see fig. 22;) in this case we modify also the cut of the scion, in order that it may fill exactly the opening prepared for it.

By this method of grafting, and its modifications, we may propagate a great many hard-wooded evergreens, and likewise many with herbaceous stems or branches; such as the young shoots of pelargoniums; melons on gourds and cucumbers; tomatoes on the stems of potatoes; sunflowers on the Jerusalem artichoke, &c. For the latter, more especially, the minute care of shading, which we have mentioned, is indispensable.

CLEFT GRAFTING WITH TWO SCIONS: fig. 23. (*Grefte en fente à deux rameaux.*) (*Grefte Palladius, of Thouin.*)



Operation.—The stock, as may be seen, is cut horizontally, then split across the middle, in two equal parts, or nearly so, without regarding the medullary sheath, (*a maxim strongly recommended by ancient authors.*) The operations are similar to those required for the Ber-temboise mode, fig. 21, excepting that the stock is cut across horizontally, and two scions are inserted in the cleft. This mode is only used for stocks that are too large for one scion, and too small for being cleft for four. In many cases we cut back one of the grafts, when both take, if their growths are like-



Fig. 23. Cleft grafting with two scions.

Fig. 24. Cleft grafting with the stock and scion of equal size.

This, however, is not the case when these grafts are intended to form either fan-trained, or vase shaped trees. We also use this mode for grafting the strong stem of a bad sort of vine with a better variety; but the wood of the vine being flexible, it is necessary to bind, securely, the parts operated upon; then when

the graft is above ground, and generally exposed to the sun, we cover the wound with the resinous composition, binding the whole with a piece of cloth, in order to prevent the composition from being loosened, or even thrown off by the flow of the sap, formed in the small vesicules, which being evacuated, weakens the stock, and consequently the graft, which in this case runs the risk of perishing. Vines ought to be grafted when their sap flows abundantly from one or more small trial cuts made on their stems. [To prevent bleeding they should be in leaf.]

CLEFT GRAFTING (*Paragraph 2d*); WITH STOCK AND SCION OF EQUAL SIZE: fig. 24. (*Greffe Ferrari of Thouin.*)—This is applicable to herbaceous and woody parts.

Operation.—The scion, of whatever nature it may be, should be cut wedge-shaped at the base; the stock should be split down in the middle, and the two parts thinned as they are represented, in order that the wedge-shaped part of the scion may fill all the space, and coincide in every point. This particularly nice mode may be applied to many wooden plants, and to a great number of large herbaceous ones.

ART. IV. *Descriptions and Engravings of select varieties of Pears.* By the EDITOR.

IN continuation of our previous articles, describing new or select pears, we now proceed to give a full account of several American varieties, some of them of great merit, more particularly the Sheldon and Collins.

127. SHELDON.

No American pear, unless we except the Swan's Orange, of recent introduction,—or, we might almost say, any native variety which has yet been raised,—is destined to take a higher rank than the Sheldon, (*fig. 25.*) It first came under our notice at the meeting of the Pomological Convention in Sy-

racuse, in the fall of 1849, where some fine specimens were exhibited by Mr. E. L. Leavenworth, of Wolcott, Wayne Co., N. Y. At that time they appeared to us to be identical with

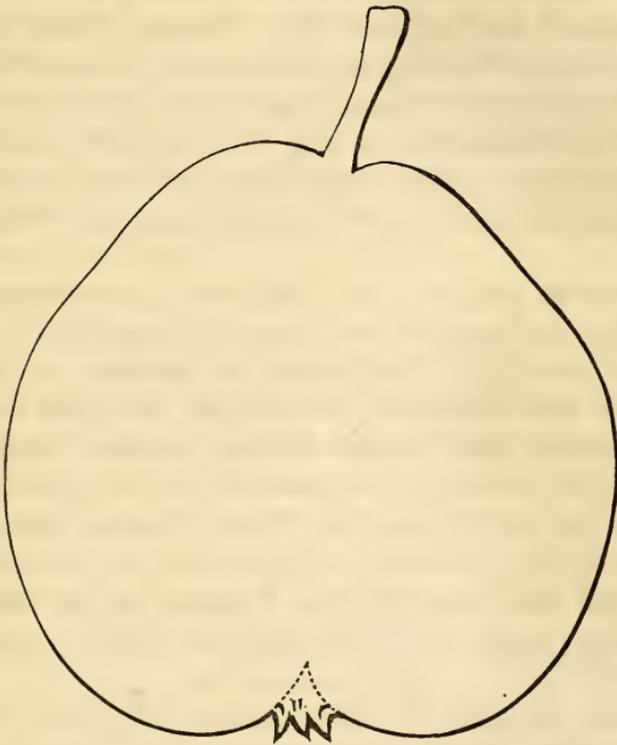


Fig. 25. The Sheldon Pear.

the Oswego Beurre, but on the assurance of Mr. Leavenworth, that the parent tree had been in bearing more than twenty years, we were satisfied it could not be that pear: through the kindness of this gentleman we were promised some specimens for trial, as soon as they were fully grown and matured, and in the month of October following, we received a box of the pears, in the finest condition, and upon tasting them we not only discovered it was quite distinct from the Oswego Beurre, but a far more delicious variety.

We at once wrote to Mr. Leavenworth for an account of the variety, with, if possible, some history of its origin, and to his further kindness and trouble we are indebted for

the following statement, which we now introduce to our pomological friends :

“On the 26th of January (1850), I went to see Maj. Sheldon, and derived from him the following account of the origin, &c. of the Sheldon. Maj. Sheldon’s father brought pear seeds from Washington, Duchess Co., in this State, between thirty and forty years since, and planted them in the place where Major Sheldon now lives, in the town of Hunn, (then Wolcott.) From these seeds the trees were raised which bear the pears known in this section as the “Sheldon” pear.

The seeds brought from Duchess Co. were from pears which grew on a grafted tree, name not known, but were introduced there by an Englishman of the name of Johnson, and Major Sheldon thinks he brought the grafts with him from England. But Norman Sheldon, an older brother, has since told me he thought he procured them at Boston. Major Sheldon has the Virgalieu or White Doyenne, growing by the side of the Sheldon, in eating at the same time, and has often tried them together, the Virgalieu in one hand, and the Sheldon in the other, and uniformly found the Sheldon superior.”

To this account, Mr. Leavenworth adds, that Mr. Verplanck and Mr. Mackay, both nurserymen of Geneva, as well as C. A. Cook, Esq., and Mr. Fellowes, both amateur fruit-growers of the same town, pronounce the Sheldon the best pear they have ever tasted.

We need only say that a trial of the pears fully confirms the opinion expressed by the above named gentlemen, and it must rank among the very best kinds in cultivation.

Our trees are yet small, and we can say little of its habit, period of bearing, &c.; or whether it will succeed upon the quince. The wood is very yellow,—about the same shade as the Duchesse of Angouleme, but much more slender,—short-jointed, with prominent buds.

Size, large, about two and three-quarters of an inch long, and two and three-quarters in diameter: *Form*, roundish obovate, regular, full at the crown, tapering little to the stem

end which is very obtuse : *Skin*, fair, nearly smooth, of a pale greenish russet, little bronzed on the sunny side, and regularly dotted with small dark russet specks : *Stem*, short, about half an inch long, stout, curved, and inserted with scarcely any depression on the obtuse end : *Eye*, medium size, open, and moderately sunk in a smooth, round, not very deep basin ; segments of the calyx broad, short, projecting : *Flesh*, yellowish, rather coarse, melting and very juicy : flavor exceedingly rich, sprightly, and sugary, with a delicious aroma : *Core*, rather large : *Seeds*, medium size, flat, dark. Ripe in October.

128. COLLINS.

Watertown pear, of some collections.

The Collins pear (*fig. 26*) originated in Watertown, Mass, on the farm of Mr. Collins, and was first brought to notice by

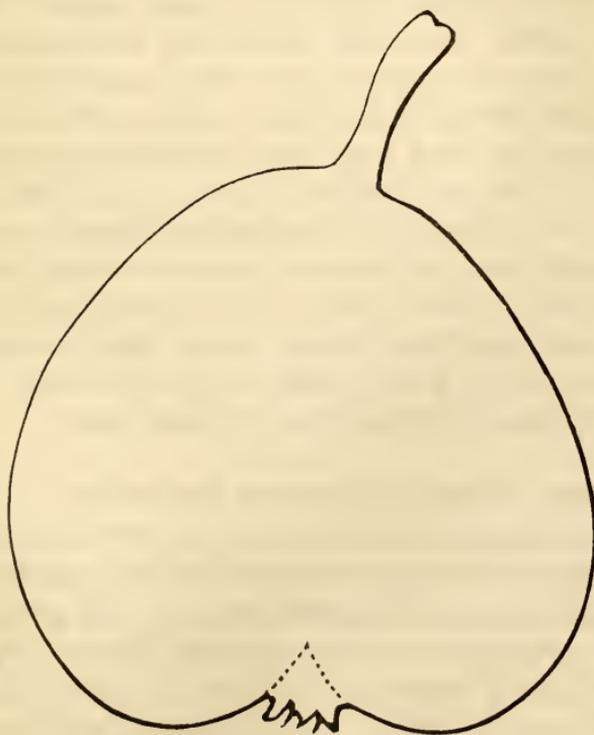


Fig. 26. The Collins Pear.

Mr. A. Pike, nurseryman of that town, in the autumn of 1848,

when specimens were exhibited by him at the Hall of the Mass. Hort. Society, from the original tree. Mr. Pike presented us with some of the pears, and we thought it had the promise of a most excellent variety; subsequent trials of the fruit in 1849 and 1850, have more than confirmed our first impressions of it, and considering it in all its qualities, it is a decided acquisition to the already large list of new pears.

It is supposed to be a seedling of the White Doyenne, resembling it very much in form, in color, and in the texture of its flesh; but it is a more vinous pear, and not quite so rich and sugary as that old variety. It is a most abundant and constant bearer, the original tree having produced a good crop the last three successive years.

Size, large, about two and three quarters of an inch long, and two and three quarters of an inch in diameter: *Form*, obovate, regular, full and broad at the crown, tapering roundly to the stem, where it is obtuse: *Skin*, fair, nearly smooth, yellowish green, mottled with dull red on the sunny side, somewhat clouded with grayish spots, little traced with russet, and regularly dotted with russet specks: *Stem*, medium length, about one inch long, stout, curved, little swollen at the base, and obliquely inserted without any cavity: *Eye*, large, open, and little sunk in a rather broad, open, somewhat funnel-shaped basin; segments of the calyx, short, stiff and slightly reflexed: *Flesh*, white, fine, buttery, melting and juicy: *Flavor*, sprightly, vinous, sweet, with a slight perfume: *Core*, large: *Seeds*, small, roundish obovate, broad. Ripe in September, and keeps well for some time.

129. LODGE. Kenrick's *American Orchardist*.

Mr. Kenrick first described this pear, (*fig. 27*) on the authority of Col. Carr, of the Bartram Botanic Gardens near Philadelphia. It was raised in the vicinity of that city, many years ago, and although brought to notice long since, for some reason, it does not appear to have been generally known, or generally introduced into collections. Among all the amateur fruit growers around Boston, we do not think that more than one or two, besides Mr. Manning, have ever had the Lodge in

bearing. We have never seen the pear but two or three times, and only once in fine condition, when Dr. Brincklé of Philadelphia, gave us some fine specimens which he exhibited at the meeting of the Pomological Congress in New York, in 1849, which were raised in the neighborhood of

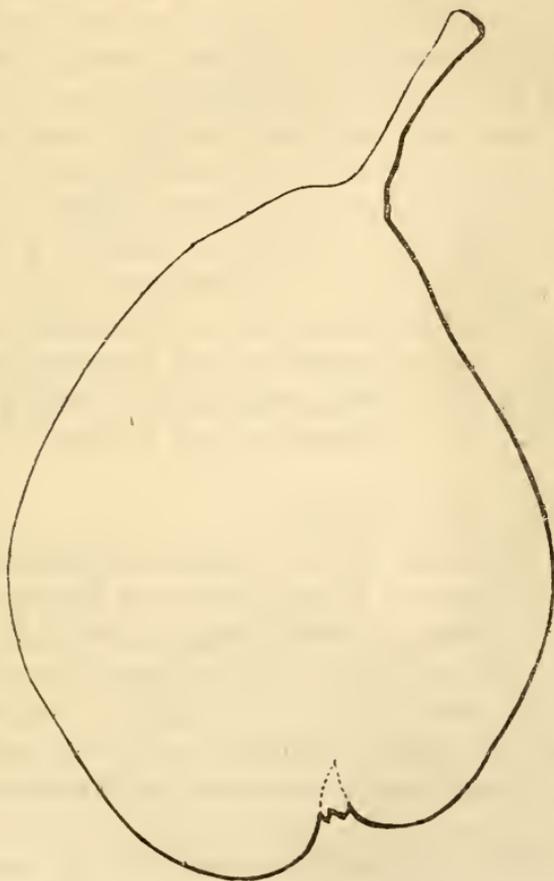


Fig. 27. The Lodge Pear.

Philadelphia. These specimens were really excellent, being very much like a prime Brown Beurré, and we were astonished to find a pear, which the committee at that meeting had placed upon the *rejected* list, to be of so much excellence. Thanks to the knowledge of Dr. Brincklé, that so good a pear was not placed upon that list ; for he, we believe, alone objected to its being put there.

Of the particulars of its origin we have no knowledge. It is evidently nearly allied to the Brown Beurré, and perhaps was a seedling from that variety. It is of good size, with a russet skin, and keeps well for an autumn pear.

Size, large, about three inches and a half long and two and a half in diameter: *Form*, ovate pyramidal, largest in the middle, narrowing little to the crown, and tapering to the stem, somewhat resembling the Brown Beurré: *Skin*, slightly rough, dull green, nearly covered with russet, and dotted with large russet specks: *Stem*, medium length, about one inch long, moderately stout, little swollen at the base, and obliquely attached, without any cavity, slightly on one side: *Eye*, rather small, open, and deeply sunk in a very small smooth basin; segments of the calyx short and rounded: *Flesh*, greenish white, rather coarse, melting, and very juicy: *Flavor*, rich, vinous, sprightly, and pleasantly perfumed: *Core*, medium size: *Seeds*, medium size, partially abortive, nearly black. Ripe in September and October.

130. PRATT. *Horticulturist.*

The Pratt pear (*fig. 28*), is a native of Rhode Island, originating in the town of Scituate, and was introduced to the notice of cultivators by Owen Mason, Esq., of Providence, in 1844. In the autumn of 1848 we were favored with specimens of the fruit by Mr. S. H. Smith of the same city, and though not equal to some of our best varieties, we thought it a very excellent pear, and worthy of general cultivation.

Of the habits and character of the tree we have not yet seen sufficient to give any general account. The young trees grow very freely, and appear to be among our hardiest varieties. It has not fruited yet out of the vicinity of its native locality.

Size, large, about two and a half inches long and two and a half in diameter: *Form*, oblong obovate, full at the crown, large in the middle and tapering to the stem end, which is very obtuse: *Skin*, fair, slightly rough, rich deep yellow when mature, and conspicuously dotted with large

bright russet specks: *Stem*, long, about one and a quarter inches in length, rather stout, curved, and obliquely in-

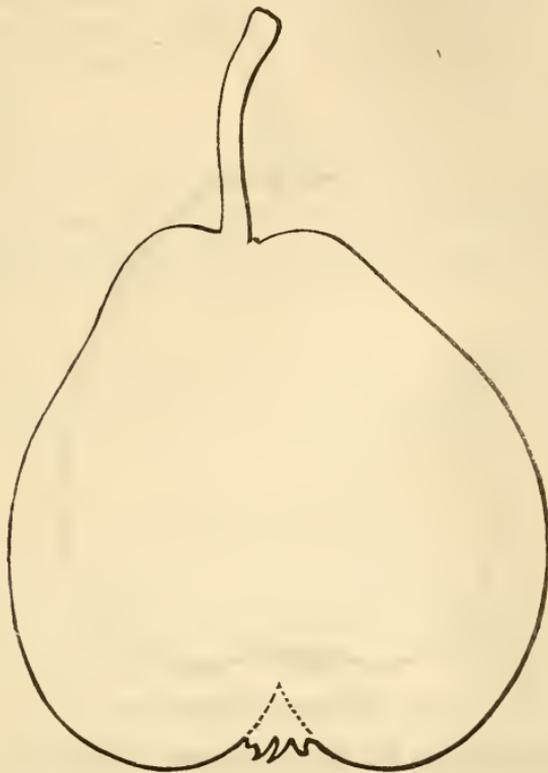


Fig. 28. The Pratt Pear.

serted in an open shallow cavity: *Eye*, large, open, and moderately depressed in a broad nearly smooth basin; segments of the calyx short, stiff, projecting: *Flesh*, yellowish, coarse, melting and juicy: *Flavor*, sweet, pleasantly perfumed and good: *Core*, medium size: *Seeds*, medium size. Ripe in September.

131. OSBAND'S SUMMER. *Horticulturist*, Vol. I.

Summer Virgalieu, of some collections.

This new pear (*fig. 29*), originated in the vicinity of Palmyra, in western New York, and although well known in Rochester, where the fruit has been offered for sale in the market under the name of the Summer Virgalieu, its merits

were not discovered till 1845 or 46. It was then first noticed in the *Genesee Farmer*, and afterwards more fully de-

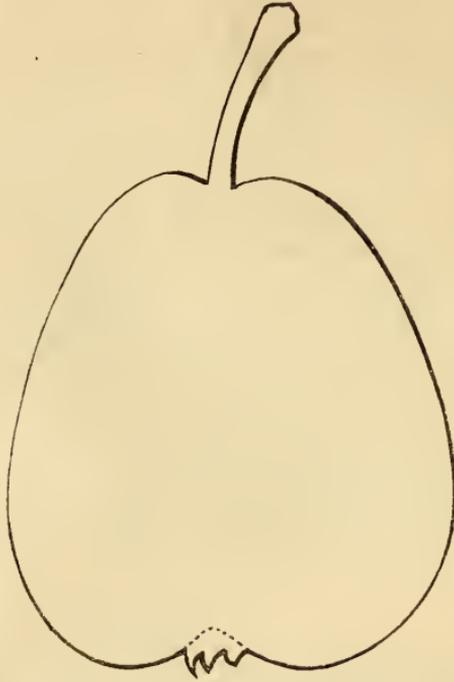


Fig. 29. The Osband's Summer Pear.

scribed and figured in the *Horticulturist*, by Mr. W. R. Smith, of Macedon.

The Osband's Summer, is a very handsome pear of good quality, though not equal to the Dearborn's Seedling, Rostiezer, Tyson, and others of its season: but its great beauty, productiveness, &c., will entitle it to a place in large collections, or as a suitable variety for the market. The tree is an upright and tolerably vigorous grower, with light yellowish wood.

Size, small, about two inches long and nearly the same in diameter: *Form*, obovate, rather full at the crown, and obtuse at the stem: *Skin*, fair, smooth, clear yellow, beautifully tinged with bright red on the sunny side, little russeted around the crown, and dotted with russet specks: *Stem*, medium length, about one inch long, rather stout, and slightly inserted in a small somewhat angular cavity: *Eye*, large,

open, and but slightly depressed in a smooth shallow basin; segments of the calyx short, projecting: *Flesh*, yellowish white, little coarse, melting and juicy: *Flavor*, pleasant, sugary, and little perfumed: *Core*, medium size: *Seeds*, medium size. Ripe the last of August and beginning of September.

132. WESTCOTT. *Horticulturist*, Vol. II.

The Westcott pear (*fig. 30*,) is another Rhode Island seedling, which originated in the town of Cranston, on the farm

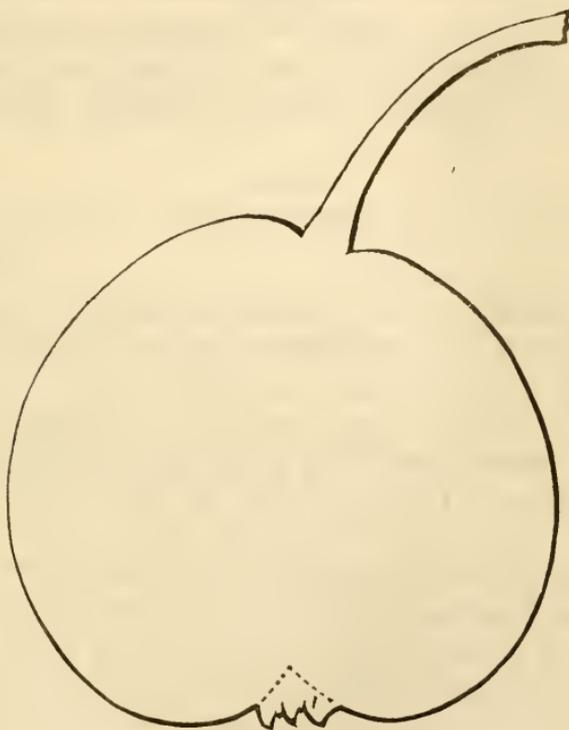


Fig. 30. The Westcott Pear.

of Mr. Niles, in that State. It has but recently been introduced to notice, and has not yet fruited, we believe, only in the vicinity of the locality where it originated.

Last year, we for the first time had an opportunity of tasting specimens of this pear. It is similar in quality to the Knight's Seedling and Pratt, which originated near Crans-

ton, but is handsomer than either of those varieties, having a clear yellow skin. We think it a decided acquisition.

Size, medium, about two and a half inches long, and two and a half in diameter: *Form*, roundish, large and full at the crown, rounding off at the stem: *Skin*, fair, smooth, yellowish green, little russeted around the crown, and dotted with numerous conspicuous specks of the same color: *Stem*, very long, nearly two inches in length, stout, curved, considerably swollen at the base, and inserted in a shallow cavity highest on one side: *Eye*, medium size, open, and little depressed in a shallow basin; segments of the calyx stout, rounded, projecting: *Flesh*, yellowish white, coarse, melting and juicy: *Flavor*, sugary, rich, perfumed and excellent: *Core*, large: *Seeds*, small, rather dark colored. Ripe in September.

ARV. V. *Report of the American Pomological Congress, at Cincinnati, Oct. 1850.* By the EDITOR.

THE first meeting of the combined pomological conventions, now known under the name above mentioned, was held at Cincinnati, Ohio, on the 2d, 3d and 4th of October, 1850.

The meeting was organized by the choice of Dr. W. D. Brincklé, as President, with eleven Vice Presidents, and F. R. Elliott, P. Barry, and Dr. J. A. Warder, as Secretaries.

After the usual preliminary business, the Congress proceeded to the discussion of fruits, &c. The committee appointed to bring in an additional list of rejected fruits and those worthy of trial, reported the following:—

REJECTED LIST OF FRUITS.

PEARS.

Spanish Bon Chrétien,	Princess of Orange,
Gold of Summer, (<i>true</i>)	Ah! Mon Dieu,

Hessel,	Bleekers Meadow,
Summer Rose,	Huguenot,
Petit Muscat,	Michaux,
Rousselet de Rheims,	Beurré Knox,
Franc Real d'Hiver,	Clinton.

APPLES.

Egg Top,	Cheeseborough Russet.
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FRUITS WHICH PROMISE WELL.

PEARS.

Paradise of Autumn,	Swan's Orange,
Stevens's Genesee,	Doyenne Goubault.
Nouveau Poiteau,	

APPLES.

Northern Spy,	Melon,
Mother,	Hawley.

The discussion which took place in regard to the merits of the different pears was very brief, and does not afford any thing of interest.

The Committee on Seedling Fruits reported the names of two apples which promise well, viz :—

Western Spy.—Originated on the farm of J. Mansfield, of Wells, Jefferson Co., Ohio. Was first grafted by Mr. Samuel Wood, of that place. The original tree is of more than twenty years standing ; it is a profuse and constant bearer, never being killed by the frost. The original tree, and that from which the specimen was taken, is growing in a limestone soil. A winter apple—January to May.

Fulton.—A new seedling variety of medium size ; color a delicate blonde in the shade, with crimson cheek on the sunny side. Flesh fine grained, tender, rather melting, juicy, with a rich and agreeable flavor. An early winter apple—from December to March. The original tree stands in the orchard of Elijah Coppes, Esq., Fulton Co., Illinois. It has borne thirteen good crops in succession.

The remainder of the report is occupied with the Reports of State Committees ; that from Illinois, by Dr. Kinnicott, being very interesting and of considerable length ; at a future time we shall notice some of these reports.

ART. VI. *Floricultural and Botanical Notices of New and Beautiful Plants figured in Foreign Periodicals ; with Descriptions of those recently introduced to, or originated in, American Gardens.*

THE RHODODENDRONS OF SIKKIMHIMALAYA.—In our volume for 1849, (XV, p. 269,) we gave a brief account of the splendid new Rhododendrons, which were discovered by Dr. J. D. Hooker, in his journey to the Himalaya Mountains ; and of which Sir W. J. Hooker published a full description with folio plates representing the flowers of the natural size and habit. Since then, Dr. Hooker has not only sent home numerous seeds of the several species, from which great quantities of plants have been raised, but he has by further explorations discovered an additional number of species, amounting in all to 43. A *second* part of the beautiful work representing these new species has already appeared, and a *third* is now in preparation. The second part contains 10 plates, and it is stated, that of these 43 species, found in the mountains of Sikkim alone, many “exceed, in the size and beauty of their flowers or their foliage, the handsomest of those which had been previously discovered.”

From the *Gardeners' Chronicle* we condense the following :—

“The first plate represents *R. Aucklandii*, a species from the lower ranges, at an elevation of 7—9000 feet. It is a bush 4—8 feet high, with large Laurel-like leaves, green beneath, and huge white flowers, remarkable for a large broad red four-cornered calyx. It occurs in dry sunny situations, and above forests of *Abies Brunoniana*.

Next comes *R. Thomsoni*, with loose bunches of deep blood-red flowers as large as those of *arboreum*, but with the foliage of *R. campanulatum*, except that it is not rusty on the under side. It is found in damp woods, where it straggles to the stature of 15 feet, rooting from its branches.

Third in order is *R. pendulum*, a species with small white flowers, hanging from the branches of tall pine trees, often covered with the *Usnea* lichen, at an elevation of 9—11,000 feet. 'Growing, as it does, an epiphyte, upon the trunks of trees, in the gloomy and almost impenetrable forests, it is a plant very difficult of detection.'

The fourth species is *R. pumilum*, a delightful Alpine species, with the habit of a *Pyrola*, and small bell-shaped flowers of the most delicate pink. It is described as 'the smallest of the Sikkim *Rhododendrons*.' Dr. Hooker only gathered it twice, on Alpine slopes among moorland plants, 'where its elegant flowers are produced soon after the snow has melted; and there its pretty pink bells are seen peeping above the surrounding short heath-like vegetation, reminding the botanist of those of *Linnæa borealis*.'

Then follows, in No. 5, a striking contrast, in the form of *R. Hodgsoni*—a tree with ample leaves, silvery white beneath, and great rose-colored flowers containing 18 stamens. This and *Abies Webbiana* are described as the characteristic underwood and tree at the elevation of 10—12,000 feet in all the valleys of Sikkim. It will probably be found one of the most cultivable of all the species. Cups, spoons, and ladles are made of its wood. 'Nor is the foliage without its allotted use. The leaves are employed as platters, and serve for lining baskets for conveying the mashed pulp of *Arisæma* root, (a kind of *Colocass*); and the accustomed present of butter or curd is always made enclosed in this glossy foliage.'

R. lanatum, the sixth of the plates, again reminds us of *R. campanulatum*, but the wool beneath the leaves is white or tawny, and the flowers pale sulphur color. It is found 'on the rocky spurs of the humid mountains and gullies, at an elevation of 10—12,000 feet.'

R. glaucum, No. 7, is a delicate little species, about 2 feet high, with scurfy leaves, and pale pinkish purple flowers. The leaves are remarkably glaucous on the under side, and the whole plant has a powerful resinous smell. It is from 'rocky depressed ridges, at an elevation of 10—12,000 feet.'

The eighth kind, *R. Maddeni*, has very large white flowers, and dark green sharp-pointed leaves, covered with rusty down on the under side. It has 18—20 stamens, and a faint perfume. It forms a bush 6—8 feet high, at an elevation of 6,000 feet.

Finally, the work closes with *R. triflorum*, a yellow-flowered species, with scurfy leaves, something like the plant exhibited at the last Horticultural meeting, by Dr. Hussey's gardener, and *R. setosum*, a Box-leaved bush, looking like a *Rhodora*. This last inhabits extensive moorland tracts, and rocky slopes, at the height of 13—16,000 feet, and evidently belongs to a drier climate than the preceding. Dr. Hooker says, 'It is the 'Tsallu of the Sikkim Bhotas and Thibetians, who attribute the oppression and headaches attending the crossing the loftiest passes of the Eastern Himalaya to the strongly resinous odor of this and of the *R. anthopogon* Wall. (Palu of the natives.) The species certainly abounds to within a few miles of the summits of all the passes, and after hot sunshine fills the atmosphere with its powerful aroma, too heavy by far to be agreeable; and it is, indeed, a sad aggravation to the discomforts of toiling in the rarefied medium it inhabits.'

It is by studying details like those we have quoted, that gardeners will learn how to manage the species they have reared; and, we trust, that in the next part of this important work, the learned and indefatigable author, whose return from India is daily expected, will furnish cultivators with an abundance of similar information."

Undoubtedly but few if any of these will stand our northern climate in the open air; they will however succeed in the South and West, and will therefore be desirable objects

for introduction. But their value to us, will be for the purpose of hybridization and mixture with our own hardy *R. maximum* and *catawbiense*; by judicious intermixture a splendid race of hardy kinds must be the result.

139. NEMATA'NTHUS IONE'MA *Mart.* VIOLET-STEMMED NEMATANTHUS. (*Gesneraceæ.*) Brazil.

A stove plant; growing two feet high; with dark red flowers; appearing in spring and summer; increased by cuttings; grown in loam, leaf mould and sand. *Flore des Serres*, pl. 498, 1849.

A new and pretty species of the *Nematanthus*, similar to the *longipes*, but with darker colored flowers, and with the pedicels or stems of a violet hue. In other respects it differs but little. It requires the same treatment as the former species, and both of them, on account of their fleshy deep green foliage, are desirable additions to every collection. (*Flore des Serres*. Aug.)

140. CAPPANIA GRANDIFLO'RA *Decaine.* LARGE FLOWERED CAPPANIA. (*Gesneraceæ.*) New Grenada.

A greenhouse plant; growing two feet high; with white spotted flowers; appearing in summer; increased by cuttings; cultivated in heath soil, or leaf mould and sand. *Flore des Serres*, pl. 499, 1849.

A new and unique plant; "elegant in its habit, ample in its flowers, gracefully effective in the lively spotting of its colors upon the soft ground of its corolla, entirely new in its introduction, easily cultivated in the greenhouse, we hope to see a numerous offspring of hybrids combining the beauties of this with the other gesneraceous plants: we are confident it is a plant which will find a place among the choicest favorites of our gardens."

It was introduced from New Grenada, and was raised from seeds received from the environs of Santa Fe de Bogota, in the collection of M. Van Houtte. The drawing is from the species in its native locality. In general appearance it resembles a *Gloxinia*, but much larger and more spreading at the mouth: the color a creamy white, elegantly spotted with deep rose or carmine. It is one of the most unique plants of this tribe we have lately seen, and surpasses the *Achimenes* in the size as well as beauty of its flowers. It is easily cultivated in the

same manner as the Achimenes or Gloxinias. (*Flore des Serres.* Aug.)

141. *CAMELLIA JAPO'NICA*, var. *CANDOR* *Herb.* HON. AND
REV. MR. HERBERT'S SEEDLING.

This Camellia which has been in cultivation some time, was raised by the late Mr. Herbert, and was pronounced one of the finest whites yet raised. The drawing represents a charming flower fully equal to the old double white, being regularly imbricated, full and regular. We believe it is in some of our American collections, but it has not yet flowered. (*Flore des Serres.* Aug.)

142. *RIGIDE`LLA IMMACULATA* *Herb.* SPOTLESS RIGIDELLA.
(*Iridaceæ.*) Guatemala.

A greenhouse shrub; growing fifteen inches high; with orange-colored flowers; appearing in spring; increased by offsets; cultivated in loam, leaf mould and sand. *Flore des Serres*, pl. 502, 1849.

An exquisite little iridaceous tribe, with spikes of orange scarlet flowers, which depend gracefully from the stem: there are now three species, this being the newest: all are pretty, and deserve a place in every collection of Cape bulbs. Easily cultivated in the same manner as the *Ixias*, *Sparaxis*, &c. (*Flore des Serres.* Sept.)

143. *SALVIA PATENS* var. *ALBA*. WHITE-FLOWERED SALVIA. Garden hybrid.

A greenhouse plant; growing two feet high; with white flowers; appearing all summer; increased by cuttings; cultivated in light rich soil. *Flore des Serres*, pl. 503, 1849.

The *Salvia patens* is well known in our gardens as one of the most beautiful summer blooming plants turned out into the open border. The *S. patens alba*, is precisely like it in everything but the color of the flowers: bedded out with the blue and the scarlet, the white spikes of the *alba* will make a rich contrast, and render it one of the most desirable plants for general introduction. It grows as readily as the other kinds of *salvias*. (*Flore des Serres.* Sept.)

144. *LI'LIIUM SZOVITSIA'NUM* *Fisch. and Lalle.* MR. SZOWITZ'S LILY. (*Liliàcæ.*) Caucasus.

A hardy bulb; growing two feet high; with yellow spotted flowers; appearing in August and September; increased by offsets; cultivated in light rich soil. *Flore des Serres*, pl. 507, 1849.

A new and fine lily introduced by Messrs. Fischer and Lalle, of the Garden of St. Petersburg, who found it in their excursions in the Russian Provinces. It is a beautiful and hardy species, with pale yellowish flowers, spotted with dark brown: the flowers pendent, with reflexed petals like the Japan lilies. It is a great addition to this splendid family of hardy plants, and we hope to see it speedily introduced. (*Flore des Serres.* Sept.)

145. *CYDONIA (CHÆNOMELES) JAP'ONICA*, VAR. *UMBILICATA*. UMBILICAL FRUITED JAPAN PEAR. (*Rosàcæ.*) Japan.

A hardy shrub; growing six feet high; with deep rose-colored flowers; appearing in spring; increased by layers; cultivated in light rich soil. *Flore des Serres*, pl. 510, 1849.

A new and beautiful rose-colored variety of the Cydonia or Japan pear, (*Pyrus japonica*, as it is best known) introduced by Dr. Siebold in his tour to Japan, and fruited for the first time in his garden in 1849. The flowers are of a deep and beautiful rose, and they are succeeded by fruits, which are green and handsomely tinged with bright red on the sunny side, and are almost as ornamental as the flowers. It is perfectly hardy, and requires the same treatment as the common *Pyrus japonica*. (*Flore de Serres.* Sept.)

146. *AMHE'RSTIA NO'BILIS* *Wall.* NOBLE-FLOWERED AMHERSTIA. (*Leguminosæ.*) East Indies.

A stove shrub; growing ten feet high; with rose-colored flowers; appearing in spring; increased by cuttings; cultivated in light rich soil. *Flore des Serres*, pl. 515, 1849.

Few plants have had a greater reputation for beauty precede their introduction, and few have better sustained it after their blossoms have been seen. The Amherstia is truly a noble plant. With a pinnate foliage similar to our hardy acacias, it has immense pendent racemes (4 or 5 feet long) of huge flowers of a brilliant rose or carmine shade, than which nothing in the floral world can be more beautiful.

The credit of first flowering the Amherstia in England is

due to Mrs. Lawrence, at Ealing, whose collection of plants, and whose success in their cultivation is so well known. The Duke of Devonshire sent out Mr. Gibson, expressly to introduce the *Amherstia* and other East India plants: and a plant has been in his collection several years without blooming. The plant of Mrs. Lawrence was given to her by Lord Hardinge, in 1847, and in 1849 it enriched her collection with its magnificent flowers.

It has been supposed to be difficult to bloom: but the success of Mrs. Lawrence shows that with proper management it will readily flower, and that it should now find its way into all choice collections.

It requires a light rich soil, a high temperature and a partial shade to grow it successfully. (*Flore des Serres.* Oct.)

147. GRAMMANTHES GENTIANOIDES *D. C.* GENTIAN-LIKE
GRAMMANTHES (*Crassulacæ*). Africa.

An annual plant; growing six inches high; with yellow and orange flowers; appearing all summer; increased by seeds; cultivated in light rich soil. *Flore des Serres*, pl. 518, 1849.

A new and beautiful annual, growing about six inches high; with oblong elliptical fleshy leaves, and small star-shaped yellow and orange flowers; it is a native of the arid sands of Africa, and, like the annual *Mesembryanthemums*, likes a warm and dry situation, when its little starry blossoms literally clothe the dwarf and bushy plants. It will prove a fine companion to the *Portulacas*. Easily raised from seeds which are abundantly produced. (*Flore des Serres.* Oct.)

148. BRAVOA GEMINIFLORA *Llave & Lex.* GERM-FLOWERED
BRAVOA, (*Amaryllidacæ*). Mexico.

A greenhouse bulb; growing a foot high; with scarlet flowers; appearing in summer; increased by offsets; cultivated in light rich soil. *Flore des Serres*, pl. 520, 1849.

A pretty bulbous plant with racemes of tubular orange scarlet flowers, which hang in twos upon a slender stem, and open successively until arrested by cold weather. The little bulbs may be treated like the *amaryllises*, that is, planted out in spring, and taken up after blooming and placed out of the reach of frost until the return of another season. (*Flore des Serres.* Oct.)

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

CULTURE OF THE DAHLIA FOR EXHIBITION.—The following concise rules, to be observed in the successful culture of the Dahlia for exhibition, are not presented so much for any novelty in the practice recommended, as to point out a few of the most essential things to be done at the proper time, For economy in carriage, the plants are grown and sent out in small pots : therefore, on receiving them from the nursery, place them in a close frame for a day and a night to recover them from their confinement ; then repot them into 4-inch pots, using rich soil : the pots should be drained with coarse partly decomposed leaf-mould, so that in planting out there will be nothing to abstract from the ball of earth. A good start is of great importance ; therefore care should be taken that the plant is grown to a fair size without drawing during the time it is in the pot ; the stouter it is the better, without being tall ; and it should not be potbound at the time of planting out ; both the roots and the point of the plant should be in a thriving condition, and free from aphides. It may perhaps be unnecessary to state that the plants must be carefully hardened off before they are turned out. If the soil and plants are in a proper state, the first week in June will be a good time for the general planting, which, with ordinary care and attention, will produce good blooms in time for the earliest exhibition. A short period will suffice to have plants of a good size ; but it should be borne in mind that hours lost in repotting them when in a young state will make a difference of days in the time of blooming, and it is important that this should be clearly understood, that no neglect in the matter may be permitted to take place. Examine the plants often, to see if any require water ; by no means let them become dry so long as they are in pots. Secure them with proper and strong fastenings at the time of planting ; water whenever they require it, and sprinkle the foliage slightly almost every evening with soft water. Tie out the branches, and, as the plant increases in size, secure the side-shoots firmly to extra stakes. Cut away all superfluous small shoots. Some varieties have scarcely any to remove, while others have a considerable number. Fearless is of the class which has but few shoots requiring the use of the knife ; but such kinds as *Shylock* require it freely. Indiscriminate pruning must therefore be avoided. Study the habit of the plant, and consider if the flower will be improved by increased size ; all varieties need some thinning and disbudding, which should be effected at different periods. Small flowers require it as soon as the young shoots and buds can be removed, while large flowers, such as *Thames Bank Hero*, *Princess Louisa*, and many others, would be rendered coarse and valueless for the purposes of exhibition if a number of buds were not permitted to remain till the plant was coming into bloom. Size in this case would be gained at the expense of

quality ; besides, there is the advantage of having three blooms where two would be grown. On the other hand, size, in moderation, must not be lost sight of. It was not with small blooms that I have taken first prizes for these last fifteen years. I would therefore advise the young grower to avoid the two extremes. In shading blooms for exhibition, as a general rule, they should be one-third blown before they are put under the shade ; and take care to secure such as appear to be coming good, and at the time they are required, from injury by friction. Slugs and earwigs are very destructive, and must be perseveringly kept down from the time the plants are put out till the end of the season. If you should be annoyed by a small black insect (which is often the case in July), use every means to encourage the plants to make rapid growths, by watering and syringing them overhead, and by brushing the depredators from the points of the shoots. Snuff, tobacco-water, and various other remedies are often resorted to ; but these, if effectual in killing the pests, generally destroy the points of the shoots ; if the plants are in a thriving condition, they will soon recover themselves. If the season proves dry, water freely two or three times a week ; but never let it be done by halves ; give a good soaking when you do water, if that should not be so often. Employ manure-water once a week as soon as they begin to throw up their buds ; but it should be used in a weak state at the commencement. Before concluding these remarks, permit me to bear witness to the increasing interest taken both in the culture of the Dahlia for competition and in the raising of seedlings. The enjoyment and pleasing recreation attending the cultivation of florists' flowers add numbers to the fancy ; and I have much satisfaction in stating that no flower is more generous in repaying the enthusiastic florist for his labor than the Dahlia.—(*Gardeners' Chron.*, 1851, p. 279.)

MESSRS. LANE AND SON'S NEW ROSE-HOUSE.—It will be remembered that at a meeting of the Horticultural Society, held on the 1st of April last, Messrs. Lane contributed an exhibition of cut Roses, fresh and beautiful as in the month of June. So fine a display of the Queen of flowers in such vivid colors at so early a season necessarily attracted much attention, and therefore we have thought it expedient to furnish our readers with some information on the subject, beyond what was stated at page 215. Some time last year, Messrs. Lane put up a span-roofed Rose-house, 60 feet long, 20 feet wide, and 9 feet high, and glazed it with good sheet glass in large panes, in order that as much light might be admitted as possible. Having no stage in the centre, the floor of this house was filled last autumn with Roses standard, high in the middle, and gradually sloping off to dwarfs at the outer edges, the surrounding shelves being occupied with the smaller varieties. All were lifted and potted in the spring, previous to their introduction into the house, and when placed there, the only care they required was ordinary treatment and a healthy growing atmosphere. In order to supply the latter requisition, Mr. Lane, considering the principles of Polmaise a step in the right direction, decided on adopting a modification of that system of heating, and the result has proved all that could possibly be desired ; for with a very small consumption of fuel, any reasonable degree

of warmth may be obtained, and when the apparatus is in full play, the circulation of the air is so rapid as to visibly move the foliage. Under such conditions it need hardly be mentioned that the plants not only exhibit luxuriant health, but a brilliancy of coloring is infused into the blooms which in a sluggish atmosphere they could hardly be expected to have possessed, and all this has been effected by means of a peculiar arrangement of the common flue. On the outside of the house, near one end, is a furnace constructed of Welsh lumps; the flue from this is led along the inside of the house to near the other end, where it terminates in one upright shaft. This flue, during its whole length inside the house, is chambered or encased in another flue, out of which there are openings for the escape of hot air, which, after circulating across the house, is collected on the opposite side by cold air drains that restore it to the hot chamber, in which it is again heated, and dispersed over the atmosphere; and thus the latter is kept in continual motion—a condition found to be not only conducive to the health of the plants, but so agreeable to one's feelings, that, although the heat is 75°, it does not seem to be above 60°. Indeed so rapid is the circulation, that no scorching can possibly be experienced; in proof of which, tender Rose shoots overhanging the warmest opening above the furnace were unscathed and flourishing. In a house of this kind "the bloom" will continue in good condition for two or three months, provided the temperature is not very warm and the atmosphere dry. But in addition to the benefits which vegetation derives from this plan of heating, it is also an advantage to the proprietors' pocket. This we think will be acknowledged when we mention that the whole cost of erecting Mr. Lane's Polmaise house, which, as we have stated, is 60 feet long, 20 feet wide, and 9 feet high, is just 88*l.* 1*s.* 9½*d.* This is exclusive of rollers and shading, which would be about 5*l.* more. Among the many fine varieties of Roses which this house contained, we saw few better than our old friends Baronne Prevost, Duchess of Sutherland, Geant des Batailles, Lady Alice Peel, Madame de Lamoriciere, Madame Trudeauux, Marquise Boccella, Miss Pepin, Polybe, Regulata, Sidonie, William Jesse, Souvenir de la Malmaison, Adam, Devoniensis, Goubault, Moire, Souvenir d'un Ami, and Vicomtesse de Cazes. Most of these are budded on the Dog Rose, on which they are stated to withstand sudden changes from heat to cold, better than on their own roots. The other houses here were extremely gay with Cinerarias, and other early flowering plants, and the Camellias were beautifully in blossom. Among the latter, we remarked many, not more than four inches high, bearing large and well-shaped flowers. These are obtained by taking off the blooming points, and striking them in a little heat.—(*Id.* p. 279.)

GREAT EXHIBITION OF AMERICAN PLANTS AND ROSES.—Few persons, who know or care anything about flowers, need to be told of the magnificent floral display which took place in the Garden of the Royal Botanic Society in the Regent's Park during the last two summers: we refer to the collections of American plants, from the great nurserymen at Bagshot and Knap-hill: Baker, Standish and Noble, and John Waterer. These nurserymen

will again display their collections as on former years, and in a condition, as we understand, superior to anything which they have been enabled to do before. It is impossible to conceive more beautifully cultivated plants than the magnificent standards of *Rhododendron*, brought by Mr. John Waterer—last season especially. The experience of the last two years has pointed out means whereby improvements can be effected; and the Council have just determined on an entire re-arrangement of the ground in which these plants are exhibited; so that beautiful and effective as the whole thing was admitted to be, it cannot fail to be much more so during the coming season. That which was an experiment two years ago, is now no longer so; and can be treated from the result of experience, and rendered more than ever attractive and beautiful. The practice of shading plants from the direct rays of the sun receives an illustration on a broad scale in this exhibition. The result of which is, that the plants, which in the open air, exposed to the sun, would last in perfection two or three days at most, continue here, shut out as they are from the sun, and exposed to a damp, cool, and still atmosphere, not less than a month, and some of them even longer. This, then, is the effect of shading plants while in flower; and what results here to American plants, would equally follow with respect to all other plants, if treated in the same way; varying the treatment, of course, according to the nature of the plants: some requiring more, some less of shade. In all cases, where it is possible, the shading ought to be movable, so as to be taken up and down at pleasure. With this treatment, the constitution of the plants themselves would be strengthened, and the delicate tints of coloring of the different kinds would be still more perfectly developed; for we maintain that where *Rhododendrons* are grown in the open air, be the situation ever so favorable, if exposed to the sun, the display of bloom can never, under any circumstances, be at all comparable to that seen under such a shading as we refer to, to say nothing of the length of time the plants last in bloom in the one case compared with the other. If all this advantage accrue from the shading of *Rhododendrons*, and if they can be kept in bloom and in beauty for six weeks instead of one, the question naturally arises, why not apply it to other kinds of ornamental plants—such, for instance, as the rose? The question is a very natural and a very proper one; and we are very happy to be able to say, that the Council of the Royal Botanic Society, at a cost, of from six to seven hundred pounds, have placed such a structure at the disposal of the great rose growers—Mr. Rivers, of Sawbridgeworth; Messrs. Lane and Son, of Great Berkhamstead; and Messrs. Paul of Cheshunt; who, like the great Bagshot nurserymen, that display these American plants entirely at their own risk and cost, deserve the special thanks and patronage of the public. These great rose growers, then, planted during the past autumn a piece of ground, not much less in extent than the American garden, with several thousand roses, each filling his own department with the kinds which he deemed the best for the situation and the experiment to be tried. This garden also is provided with a substantial iron frame-work, on which canvas blinds are to be run up and down as often as the weather and other circumstances may require. Here,

then, is another experiment to be tried, and the efficacy of shading plants in bloom on a large scale tested; the result of which will prove to the public how far such a practice is deserving of imitation. Our own calculation is, that the rose bloom, which in the open air comes into flower, and is exceedingly beautiful for an hour or two in the morning, before the force of the sun falls upon it to destroy the delicate coloring of the petals, and is tolerable only for a short time afterwards, will, by means of shading, last nearly equally beautiful for a week or ten days. If this calculation prove nearly correct, the result will be a large increase of expanded blossom at the same time; turning what in ordinary cases, would be but a meagre display from the paucity of open bloom into a gorgeous mass of flower, such as it would be impossible to see in the same space under other circumstances. This, at least, is what we expect; and, if the delicacy and beauty of the blooms do not incomparably surpass anything that was ever seen before in roses, we shall be greatly disappointed. Here, then, is something new for the year '51. Taking the American Garden, the Great Exhibition Tent, and the Rose Garden, joining each other as they do, they will form one entire awning upwards of an acre in extent, of open, uninterrupted promenade, during part of the month of May and the whole of June and July, such as no spot, similar in extent, on the face of the globe could supply.— (*Gard. Journal*, 1851, p. 131.)

[The exhibition continues the whole of this month, and we invite the attention of our amateurs to the hints above thrown out relative to the benefits of shading, more particularly under our hot sun.—ED.]

A GARDEN OF BULBS.—How universally everybody, even persons comparatively indifferent to gardens, admire the flowers of all bulbous-rooted plants; yet how few gardens among those in the highest keeping make them form anything like a conspicuous feature in the general arrangement. How this happens I know not, nor can I imagine, because the temptation is great; for be it known, that from February to July, aye, even to September, there may be kept up a continual succession of the most neat and lovely, as well as the most gorgeous bloom, according to the taste of the gardener; not that I would recommend an entire reliance on bulbs, for there are many perennials of quite another class, that would wonderfully aid the general effect, and they might be so contrived as to supply those colors which may be most efficient at particular seasons. I am an advocate for bulbs upon the same principle that I am for perennials, apart from their great beauty; that is, for the little trouble they give one. For the most part they need only be disturbed once in three years, and then only because the increase is so great that they want thinning, so also does a perennial: indeed so do most perennials, for they spread their roots in three years into large patches, and require to be parted, or they become uncouth. I have a bulb border; I cannot call it a bulb garden, but it completely eclipsed all the rest of my garden, until, with the increase in the third year, I was enabled to make bulbs a very important feature in the general arrangement, but I will confine my remarks to the bulb border; and although I write from memory and far from home, I will endeavor to convey an idea of its plan,

arrangement, and effect. In February and March, the principal subjects are the Snowdrop, the early Daffodils, the brilliant *Scilla sibirica*, and the Crocus, of which there are several varieties; then I have the white of the Snowdrop, the yellow of the Daffodils, the bright blue of the *Scilla*, and among the Crocuses the dark purple, the white, the striped, and the golden yellow. Here, then, is but one leading color deficient; but there are dwarf trees of the *Pyrus japonica* upon the wall, and they, from Christmas to the end of spring, furnish a great abundance of red. But before my favorite bulbs already mentioned decline, I have early Tulips of many colors—the first of which show their colors before the Crocuses depart, and Hyacinths of many shades in blue, red, and an apology for yellow, and after this the late varieties of the so called early Tulips and the later Hyacinths and the *Narcissus* tribe assisting them, keep up a complete gallery of beauty all the month of April and part of May. The *Iris* family, which is immensely extensive, begin to help me, and the late Tulips take their full share of decoration until the *Iris* become numerous and various, when the Lilies render great service, and continue, with some of these species, to enliven the borders to about the end of summer. Now, during all these months very little aid is required to keep up a full bloom, and I have not once contemplated disturbing the ground, except by hoeing carefully, to destroy weeds, nor do bulbs require watering. I do not conceal the fact that I was a considerable time before I could please myself with the arrangement to keep something like a uniform quantity of flowers always on the border, for it was only four feet wide, but I derived infinite pleasure from the changes I made from year to year, and I will also confess that now that I have distributed bulbs moderately in the general borders, I am better pleased with the other part of the garden than with the border dependent on bulbs, except so far as it interests me as an experiment; for they are brilliant additions in early spring, and greatly assist the general effect all the year. At times the bulb border is almost too dazzling, yet I am convinced that I shall in time so regulate it as to secure a good bloom nearly the whole year; at the fall, I now have, to succeed everything, the autumnal Crocuses in variety, and the (so called for many years) *Amaryllis lutea*, so that there is a fair struggle to keep up the flowers up to winter. My greatest trouble is in keeping the border neat as the various bulbs go out of bloom; but as fast as the stems or leaves turn yellow I shorten them to the part that is a good color, and thus manage pretty well. I would not go so far as to recommend every body to try a border of bulbs, but I would seriously advise them to have in all the borders a few patches (for all bulbs look best in patches), of Snowdrops, Crocuses, *Scilla sibirica*, and the earliest Daffodils in sixes. A few patches of Hyacinths in threes, early Tulips the same; if these several patches were 10 yards apart they would still do wonders in “lighting up” the garden as it were. I have patches of dwarf bulbs six feet apart all along my border, but as I give all of them fair play, the patches of each family are a considerable distance from each other; all these are within six or nine inches of the edging. Half way between them I have patches of taller bulbs, *Iris*, Lilies, &c., but I only plant these patches 12 feet apart, so that they come

in the centre, but further back between every alternate two of the dwarfs. I may be a little particular, but I place the same kind in all cases opposite each other. I have strongly recommended one of the great importers of bulbs to make out his catalogue for the next season, with the names of all bulbs flowering in the particular months, so that a tyro may order exactly what he wishes. There are many bulbs of great interest, but little known by their names; and London seedsmen are generally unable to inform us anything about them; but a descriptive list, with the heights, colors, season of planting, and season of bloom, would be valuable. The principal points that require attention in the culture of bulbs are—1st, to have the ground well drained; 2d, to have the soil rich and light; 3d, to plant them before they make the least effort to grow; 4th, not to take them up until the leaves have died down; lastly, while they are out of ground, to protect them against heat, frost, and damp. I feel assured that if those who do not make bulbs a feature in the gardens will but try the effects of a few Hyacinths, a few Crocuses, a few *Scilla sibirica*, and a few early Tulips, they will very soon desire to add to their list of bulbs.—(*Gard. Chron.*, 1851, p. 229.)

ROSES FOR BEDDING.—“Are roses adapted for bedding in a flower garden?” is a question asked by Mr. M’Ewen, and answered by him in rather conclusive terms. I do not tax the experience, neither the opportunities of observation of your correspondent; I grant that *Géant des Batailles* is one of the most brilliant, perfect, and most constant blooming roses in its class; but to tell us that *Géant* is the only rose to be tolerated in a flower garden bed is, in my opinion, unfair to the “Queen of Flowers.” I think there cannot be two opinions of the rose for the above purpose, with those who have seen well-managed beds of the following: *Comte d’Eu*, *General Merlin*, *Pompon*, *Cérés*, *Anne Beluze*, *Dupetit Thouars*, *Edouard Defosses*, *Souvenir de la Malmaison*, *Abricote*, *Carolina*, *Clara Sylvain*, *Eugene Hardy*, *Pactolus*, *Cramoisie Superieure*, *Mrs. Bosanquet*, *Moira*, *Prince Charles*, *Comte de Paris*, *Niphetos*, *Pumila Devoniensis*, *Miss Glegg*, *Narcisse*, *Nemesis*, with a host of others of equal merit, many of which far surpass *Géant des Batailles* in constancy and profusion of bloom. Let them speak who have seen these lovely roses grown to perfection, and I am convinced that they will, with one accord, admit that they are gay, elegant, compact, constant, blooming, effective—in short, that they are calculated to take a prominent place in any well-arranged miscellaneous flower garden. It is true, that very few Hybrid Perpetuals produce a sufficient succession of bloom to render them eligible for bedding. Bourbons are preferable, many of them all that could be desired. China, tea-scented China, and Noisettes on their own roots, are, in my opinion, of all roses the best adapted for the purpose in question, but they must be grown, they must be *well grown*. Root-prune them, and their roots will be multiplied, and a corresponding increase of blooming material will be the result. Not only does root-pruning produce a greater amount of bloom, it also tends to keep the plants dwarf and compact. Grow them in light rich soil, give them abundance of moisture, occasionally manure in a liquid state at the roots in

dry weather, and no fear need be entertained of a lack of constancy and profusion of bloom. Your correspondent "Rodophilos" complains that *Souvenir de la Malmaison* on its own roots does not with him open its blooms freely. Last season I had several plants of it on a south border, (worked and unworked,) in a soil neither of the best nor the richest quality, and not half of its bloom-buds opened; but in a bed in the flower garden, with a soil as mentioned in a previous communication, where the plants grow luxuriantly, its bold and massive blossoms expanded as freely as any other rose, thus proving (at least with me) that this famous rose freely grown will freely open its blossoms; and in some degree showing the advantages accruing from an interchange of opinions and modes of culture on this and other important subjects.—(*Gard. Jour.*, p. 100.)

STANDARD SCARLET GERANIUMS.—Grown as a standard, six or eight feet high, the scarlet geranium is a very graceful object placed among the dwarfer plants in the conservatory. And it is equally as easy grown in this way as in the usual dwarf form. Select in the spring, from the stock of young plants, such as have at least one fine strong shoot. Cut all the others clean away from as near the root as possible, and stake the shoot that remains carefully, as it is very apt to get broken in the operation, and, indeed, it is better to leave two or three of the best shoots on the plant until this operation is completed, in case of any emergency. The plants may be placed in any moderately warm house, such as a vinery, where they can command a sufficiency of light. By-and-by the upright stem will throw out laterals, which should be allowed to make a couple of leaf-buds, and then stopped; by this means the stem gets beautifully feathered with leaves all the way up, and by stopping the laterals the ascending fluid continues the growth of the main stem. On this point the whole affair turns, for if any suckers are allowed to push out from the bottom, they divert the sap from the proper channel, and the main stem almost ceases growing. This stem should never be stopped until it has attained the desired height, when it is stopped, and the four or five laterals next the extremity encouraged, in order to form a head. Treated in this manner, with liberal pot-room, and occasional waterings with liquid manure, they will bloom in the conservatory the whole winter through. I see no reason why there should not be a regular succession of geraniums and pelargoniums in bloom all the year through. When visiting Dalkeith, in September last, Mr. McIntosh showed me several lots of beautiful bushy pelargoniums, in different stages of growth, for winter and spring blooming; and our conservatory is now gay with both sorts. *Flore pleno* and *unique* are particularly useful for winter.—(*Id.*, 1851, p. 101.)

PSIDIUM CATTLEIANUM (GUAVA).—The *Psidium Cattleianum* is the only fruit that I know of that is improved in flavor and color by giving it abundance of water and copious syringing when approaching ripeness. The fruit will set freely in a cold greenhouse or conservatory, and after it attains the size of a small cherry, it remains a long time without making any apparent progress. The fruit in this state should be thinned; and as soon as it begins to swell, it should have the temperature of the pine stove 60 to 70

deg.; syringing often and watering freely. Thus treated the fruit will swell to double its usual size, and will be much improved in color and flavor, and will make an agreeable addition to the dessert. The fruit will ripen in about three weeks after its removal to a higher temperature.—(*Id.*, p. 101.)

SELECT LIST OF AUTUMNAL ROSES ADAPTED FOR BEDDING.—[N. B. Those marked with an asterisk, are particularly beautiful.]

- *1 Mogador. Brilliant crimson. Damask perpetual.
- *2 Géant des Batailles. Scarlet crimson. Hybrid perpetual.
- 3 Jeanne d'Arc. Pale flesh, fine. Hybrid perpetual.
- *4 Madame Aimée. Very light pink. Hybrid perpetual.
- *5 Madame Guillot. Very bright red. Hybrid perpetual.
- 6 Duc d'Anjou. Purplish red; excellent.
- *7 Etendard de Marengo. Very rich red. Hybrid perpetual.
- *8 Marquise Boccella. Light pink; a stout and short grower; the petals are singularly reflexed.
- 9 Pourpre Royal. Rich red and purple. Hybrid perpetual.
- *10 Comte Bobrinsky. Scarlet crimson; excellent dwarf. Hybrid perpetual.
- *11 Comte d'Eu. Very deep crimson; very dwarf. Hybrid perpetual.
- *12 Madame Angelina. Creamy fawn; most lovely. Bourbon; (this does admirably with the "Géant.")
- 13 Souchet. Very dark purple; opens well. Bourbon.
- 14 La Gracieuse. Rich pink. Bourbon.
- 15 Madame Margat. Deep rose. Bourbon; very free flowerer.
- *16 Aimée Vibert. Good white; very free flowerer. Noisette.
- *17 Miss Glegg. Pinkish white. Noisette; very good.
- *18 Fabvier. Splendid scarlet crimson; a little striped, and thin of petals. China.
- *19 Cranioisio Supérieur. Velvety and rich crimson; splendid; a little too tender for exposed situations. China.
- *20 Henry the Fifth. Fine crimson; sometimes striped. China.
- *21 Clara Sylvain. Creamy fawn, splendid; a little tender. China.
- *22 Boisnard. Rich creamy fawn; a little tender; large. China.
- 23 Eugène Beauharnaise. Purplish red; excellent. China.
- 24 Madame Bureau. Pure white; rather tender; very good. China.—(*Id.*, p. 100.)

ART. II. *Domestic Notices.*

BIRDS INJURIOUS TO FRUIT TREES.—Some years ago, after a severe snow storm in April, I observed that the surface of the snow under my peach trees was literally covered with blossom buds, and, on minutely examining the branches, saw with regret that all hopes of a good crop, for that year at least, had entirely vanished. At first, I thought that this might be the effects of the late storm, but on a closer examination, saw that the buds had been torn with violence from the branch, and that it must have been

the work of some living animal. The next morning, determined to solve the mystery, I took a gun, watched the trees, and soon discovered flocks of small birds, apparently sparrows, busily engaged eating the blossom buds, and scattering the refuse on the snow-covered ground. Having shot several of the petty thieves, I dissected a couple, and found them full of my missing blossoms, thus leaving no doubt on my mind, as to the cause of the bare appearance of the trees. One branch alone, which I showed to a friend, having ten buds eaten off, and only two remaining perfect. This spring, again observing the buds eaten in the same manner, led me to think that many persons, who complain of the peach blossoms having been killed by cold weather, may, with much more justice, attribute their loss to the real cause, that is, the bud-eating propensity of these birds. A neighbor complained to me to-day, that several buds from his newly budded trees had been, as he thought, rubbed off; but, from his description of the state the buds were in, I have every reason to believe that this likewise is the work of birds. Not having seen any notice in your journal, upon this subject, I thought I would take the liberty of making this fact known, as perhaps some species of bud-eating birds may cause more devastation in peach orchards than we imagine. The bird to which I allude, is the Purple finch, or American linnet—"Fringilla purpurea." Nuttall says, that "when reduced to necessity, they are observed to eat the buds of the beech, and those of fruit trees, probably for the sake of the stamens contained in them, of which they are greedy, when displayed in the opening blossom." However, in summer they partly repay us, as then "their food consists principally of insects," although at the same time "they eat small juicy berries, as those of the honeysuckle, and others." The Purple finch is about six inches in length, and has a sweet and varied song. The adult male, Nuttall says, is of a crimson color, (but my specimens are of a dusky crimson shade, with the back dusky brown, probably young birds,) the belly is partly white. The females and young are of a pale brown, and dusky, beneath yellowish white, spotted with dusky brown; the legs are of a brownish flesh color, and the bill dull dark brown color. As I am much opposed to shooting any small insectivorous birds, deriving as we do, from them, more benefits than most of us are aware of, as they destroy daily innumerable eggs, and insects, and larvæ, which if suffered to multiply would totally destroy not only our fruit, but the very orchards themselves,—could not some plan be devised to frighten away these little thieves? as at one meal they destroy hundreds of peaches, for the sake of, as Nuttall states, merely the stamens. I would not thus intrude upon your time and patience, had I not suffered pretty severely from the depredations of these birds, and thought it might be well to warn others, who have been, or now are, in a similar situation.—*Yours, D. R. April 18, 1851.*

[We have noticed this species of linnet frequently, in our grounds, but never having suffered much by the destruction of any quantity of the peach buds, we have not noticed their peculiar propensity to eat the flowers of this fruit. We gladly, however, insert the above, and would be glad to have

cultivators, who may suffer in the loss of their peach buds, notice the habits of this bird, which may be readily known by the description. In some localities they may be much more injurious than others.—ED.]

ART. III. *Massachusetts Horticultural Society.*

Saturday, April 26, 1851. Exhibited.—FLOWERS: From H. Grundel, a fine plant of *Weigèlea ròsea*.

GRATUITY AWARDED.

To H. Grundel, for a fine plant of *Weigèlia ròsea*, the society's medal, \$5.

May 3. An adjourned meeting of the Society was held to-day,—the Vice President in the chair.

No business of importance was transacted, and the meeting was adjourned two weeks, to May 17th.

Exhibited.—FLOWERS: Beautiful hyacinths, from J. Breck & Son and A. Bowditch.

PREMIUMS AWARDED.

HYACINTHS.—For the best display, to A. Bowditch, a premium of \$5.

For the second best, to J. Breck & Son, \$3.

VEGETABLES.—From T. Needham, a brace of cucumbers,—varieties, Young's Victory of Suffolk and Young's Champion,—fine for the season.

May 10. The opening of the Hall for the season, took place to-day. The display was not so large as we expected, but the specimens were remarkably fine. Owing to the earliness of the season, there were but few cut flowers, and those mostly from the greenhouse. The fruit was very good, particularly the cherries from Mr. Allen.

FLOWERS: From Hovey & Co., twenty-five plants, in pots, among which were *Ixòra coccinea*, *Begònia sanguinea*, and *parviflòra*, *Gladiolus pudibùndus*; two fine seedling mimuluses, *Kennèdia racemòsa* and *grandiflòra*, &c.; also, six fine pelargoniums, viz., *Blanche*, *Cassandra*, *Forget-Me-Not*, *Centurion*, *Pearl*, and *Mustee*; six roses, six *calceolarias*, and six cactuses; cut flowers, and a fine new striped seedling verbena.

From J. Breck & Co., cut flowers, among which were *Mahònia aquifòlium*, *Pulmonària virginica* and *officinalis*, &c. From A. Bowditch, and E. M. Richards, cut flowers. From L. Davenport, beautiful specimens of cut roses. From R. M. Copeland, hyacinths.

From G. Monachine, by Geo. Mountfort, U. S. Consul at Canea, Island of Crete, 80 dried specimens of native flowers, in beautiful condition.

PREMIUMS AND GRATUITIES AWARDED.

GREENHOUSE PLANTS.—For the best display, of not less than twenty pots, to Hovey & Co., \$25.

No second or third premium awarded.

PELARGONIUMS.—For the best six new and rare varieties, in 8 inch pots, to Hovey & Co., \$6.

ROSES.—For the best six varieties of Tea, Bourbon, and other roses, to Hovey & Co., \$6.

CALCEOLARIAS.—For the best six varieties, to Hovey & Co., \$3.

CACTUSES.—For the best six varieties, to Hovey & Co., \$3.

GRATUITIES.—To R. M. Copeland, for the best display of hyacinths, during the season, \$5.

To L. Davenport, for fine roses, &c., \$3.

To A. Bowditch, for cut flowers, \$2.

To J. Breck & Co., J. Nugent, and Miss Russell, for cut flowers, \$1 each.

FRUIT.—Pears, from Eben Wight—Easter Beurré, preserved by D. T. Curtis, and also two varieties for a name. Grapes, from J. F. Allen—Deccan Superb, Zinfindal, Chasselas Bar Sur Aube, Black Hamburg, Red Chasselas, White Early of the French, Early Black July, Miller's Burgundy, and a seedling; figs and cherries. The seedling grape is of a Muscat flavor—it has before been exhibited, and is of good promise.

VEGETABLES.—From T. Needham, a brace of Young's Champion cucumbers.

May 17. An adjourned meeting of the Society was held to-day,—the President in the chair.

No business of importance was transacted, and the meeting was adjourned two weeks, to May 31.

Exhibited.—FLOWERS: From H. Grundel, eight varieties of Calceolaria, (fine,) one plant *Erica tricolor*, *Azalea variagata*, one *Azalea* seedling (Bijou,) twelve varieties new pelargoniums, *Verbena Eclipse*, *Weigelia rosea*, and a variety of Tea roses, &c. From A. Bowditch, pansies, roses, geraniums, verbenas *Iphigene*, *Reine du jour*, *St. Marguerette*, *Robinson's Defiance*, *Jenny Lind*, and two fine seedlings, &c.; two bouquets, &c. Cut flowers, in variety, from J. Breck & Son, J. Nugent, L. Davenport, A. Bowditch, J. A. Kenrick, P. Barnes, Messrs. Winship, and others.

GRATUITIES AWARDED.

To A. Bowditch, for cut flowers and bouquets, \$3.

To H. Grundel, gardener to M. P. Wilder, for pot plants, \$2.

To P. Barnes, Breck & Co., J. Nugent, J. A. Kenrick, L. Davenport, Winship & Co., and H. Grundel, for cut flowers, \$1 each.

FRUIT.—From J. F. Allen, grapes, *Black Hamburg*, *Tottenham Park*, *Muscat*, *Xeres*, and *Seedling*; cherries, *Elton*, extra large, *Mayduke*, fine; figs, *Black Fig of St. Michaels*. From W. C. Strong, strawberries, and peaches, (without name.)

VEGETABLES.—From A. D. Williams & Son, 13 stalks *rhubarb*, fine for the season. From Josiah Crosby, West Cambridge, 4 bunches *radishes*, large and fine.

May 24. *Exhibited.*—FLOWERS: From the President of the Society, *Dodecátheon Meadia* and *alba*, *Spiræa prunifolia pleno*, and other flowers. From Winship & Co., ten varieties of *azaleas*, cut-leaved *horsechestnut*,

and other shrubs and flowers. From Thomas Page, Waltham, fine calceolarias and Prairie roses. From A. Aspinwall, a fine collection of splendid Noisette and Bourbon roses. From A. Carter, a fine seedling Dodecatheon, very beautiful.

From Hovey & Co., Lilac saugeana, grandiflora, Vattellina, &c.; purple beech, purple oak, Carragana arborescens, Amalanchier florida, Double White and Double Purple primrose; 15 var. of Beck's pelargoniums, 30 var. of tulips, &c. From Jos. Breck & Co., 30 var. of tulips, and other flowers. Fine pansies were exhibited by Dr. C. F. Chaplin, A. Bowditch, E. Smith, and P. Barnes. Cut flowers, from W. Kenrick, P. Barnes, A. Bowditch, J. A. Kenrick, J. Nugent, and others.

PREMIUMS AND GRATUITIES AWARDED.

TULIPS.—For the best 30 distinct varieties, to Hovey & Co., \$8.

For the second best, to J. Breck & Co., \$6.

For the third best, to J. Breck & Co., \$3.

PANSIES.—For the best 12 distinct varieties, to A. Bowditch, \$4.

For the second best, to Dr. C. F. Chaplin, \$3.

For the third best, to P. Barnes, \$2.

GRATUITIES.—To A. Aspinwall, for fine roses, \$2.

To A. Bowditch, for cut flowers, \$2.

To J. Breck & Co., P. Barnes, Winship & Co., and Hovey & Co., for cut flowers, each \$1.

FRUITS.—From W. C. Strong, Black Hamburg (fine,) and Black Frontignan grapes; strawberries and peaches, unnamed. From B. Harrington, Baldwin and Bowen's half-sweet and sour apples, in good condition. They were all preserved by being gathered and placed in a cellar on boards.

From Hovey & Co., Golden Chasselas, Wilmot's Black Hamburg No. 16, and Red Chasselas grapes, all very fine; also lemons, of extra size. From J. F. Allen, Hunt's Tawney nectarines, Elton and May Duke cherries, extra size and very superior; also Chasselas Bar sur Aube, White Early of the French, White Bual, Black Hamburg (fine,) and Violet Muscat grapes.

VEGETABLES.—From A. W. Stetson, twelve stalks of Victoria rhubarb, weighing 19½ lbs., extra fine for the season. From W. F. Walsh, gardener to Jona. French, one dish China Dwarf beans, well grown. From A. D. Williams, rhubarb. From J. A. Kenrick, rhubarb.

May 31. An adjourned meeting of the Society was held to-day,—the President in the chair.

The following Report of the Fruit Committee was read by the chairman, accepted and ordered to be printed:

The Fruit Committee, to whom a communication from Mr. Daniel T. Curtis, in respect to a method discovered by him for ripening and preserving fruits has been referred, ask leave to report at this time but in part, upon the subject committed to them.

Specimens of fruit, consisting mainly of pears, have repeatedly, during the past year, been placed upon the tables of the Society, by Mr. Curtis,

that had been preserved by him for a long time after their usual period of maturity, that were found on examination to be perfectly sound, and, in some instances, to have retained unimpaired their juice and flavor. Among these pears were specimens of the Seckel, Bonne Louise de Jersey, Duch-ess d'Angouleme, and Easter Beurré. The Seckels, though a kind peculiarly subject to early decay, were perfectly sound, and retained in perfection the peculiar flavor of that variety. Of the other varieties, the specimens exhibited were generally, though sound, insipid and tasteless, arising from the circumstance, as Mr. Curtis stated, and as their appearance indicated, that they were, when packed and subjected to his process, immature and imperfect.

These pears were exhibited by Mr. C. as late as January and February, months after their usual season of ripening, thus proving, as no signs of decay were visible, that their season could be almost indefinitely prolonged.

Mr. Curtis has sent pears preserved and packed in his peculiar method, to the Havana, to London, and St. Francisco, thus subjecting his method to the most severe trials.

The following extract from a letter from his correspondent at Havana, shows the result of the experiment, so far as the shipment to that city is concerned. "The pears arrived in perfect order: they were delicious. I never thought they could be eaten in so perfect a state, except in the country where they grow."

The Gardeners' Chronicle of April 5th, states, that at the Exhibition of the London Hort. Soc., April 1st, a box of 15 Easter Beurré pears, received from Mr. Curtis, of Boston, were exhibited; that cases containing seven of these pears were opened, and of them, four were found to be decayed and three good; and then states, "These pears were stated to have been ripened by a method peculiar to Mr. Curtis, the nature of which was not explained. They were, for the most part, melting, sweet, and perfectly ripe, a condition which this fruit with difficulty attains with us in England." The society awarded Mr. Curtis its Knightian medal.

The California Daily Courier of April 9th, acknowledges the receipt, through Mr. D. H. Haskell, of Adams's Express, of a "magnificent pear, as sound as when packed at Boston." The Pacific News, Alta Californian, and other St. Francisco papers, make similar acknowledgments, and all concur in stating that the pears were perfectly sound, and that as they were sent for the purpose of testing the practicability of sending fruit to California, across the Isthmus, speak of the experiment as successful. These pears were shipped at Boston, January 27, and after a detention of 70 days, arrived in California in April. The papers referred to state, that the pears, though sound, were deficient in flavor, a circumstance to be imputed, as with those exhibited to the Society, perhaps to the immature and imperfect state of the fruit when shipped, and not to the effect of the passage, or a difference of climate.

From the facts now detailed, as well as from their own observation, your committee feel justified in expressing a confident opinion, that after many unsuccessful trials of various processes and different methods, Mr. Curtis

has succeeded in discovering a method of preserving fruit for a very long, if not for any desired period, and that this method is capable of a practical application.

Although Mr. Curtis has, as he states, preserved other varieties of fruit besides pears, yet so far as the personal knowledge of the committee extends, the fruit subjected to his process has thus far been mainly of the latter description, and they feel, before arriving at a conclusive opinion respecting the value of this discovery to the Society, experiments with other species of fruit, as peaches, plums, &c., &c., should be made, and opportunity be offered for their examination, after being subjected to the process. With a view to the gratification of the committee in this particular, Mr. Curtis is about commencing, under their inspection, some experiments with the early and soft fruits, to be continued with other kinds, as they come into season.

In addition to the discovery of a mode of preserving fruit, Mr. Curtis seems also to have succeeded in finding out a process by which such varieties as are difficult to ripen, may be brought to perfection,—a discovery of almost as much interest to cultivators, as that by which the season of all varieties is so greatly prolonged and their safe transmission to distant places secured.

That the discoveries of Mr. Curtis are important, and that he is justly entitled to an honorary and pecuniary recompense at the hands of the Society, as well as that a knowledge of the process should be, if possible, procured for the use of its members, your committee entertain no doubt, and they believe that it will be but fulfilling some of the objects for which it was instituted, in testifying by such recompense, a proper appreciation of the merits and discoveries of Mr. Curtis, and in procuring for the public the means of availing itself of the advantages to be derived therefrom.

Under existing circumstances, however, while they wish now to place on record such evidence of the claims of Mr. Curtis as is afforded by this expression of their opinions and statement of facts, your committee are of opinion that the final action of the Society, in relation to this matter, should be yet delayed until the result of the experiments referred to are ascertained, and such further information with respect to the expense attending the process and mode of practising it procured, as will enable them, in view of the beneficial results of which it is capable, the better to recommend, and the Society to adopt, such measures in relation to these discoveries, as Mr. Curtis seems to deserve and its own interest to demand.

With these views, your committee ask that the whole subject may yet be left in their hands, and that further time be allowed them to consider what action it is proper that the Society should take in reference thereto.

JOSEPH S. CABOT, *Chairman.*

Mr. Wilder, in behalf of the Finance Committee, reported that they had purchased 20 shares of the Portsmouth and Saco Railroad Co., amounting to the sum of \$1990, and that the certificate had been transferred over to the treasurer.

Mr. Haggerston reported, that the specimens of dried plants, presented to the Society, by Mr. Monachine, had been preserved in the finest condi-

tion and put up in the best manner. The thanks of the Society were voted to him for the same.

[Mr. Monachine sent with the specimens, a list of the native plants of the Island of Crete, which we shall notice in another number. He also kindly offered his services as a Botanist to the Society.]

Henry Partridge, Medford, Geo. E. White, Boston, and James Ellison, Waltham, were elected members of the Society. Adjourned.

HORTICULTURAL OPERATIONS

FOR JUNE.

FRUIT DEPARTMENT.

JUNE, though a busy month to the ambitious gardener, is not attended with the hurry of April and May.

The severe work has been already accomplished, but there is yet plenty to do in every garden of any extent. The weather during May has been mild and free from any injurious frosts, and there has been a sufficiency of rain to freshen and invigorate the trees, shrubs, &c. which have been planted during the spring; indeed a more favorable season, in all respects, than we have had for several years.

GRAPE VINES in all the forward houses will have made good progress by this time, and the berries have swelled sufficiently to finish up the thinning at once: the bunches should also be shouldered, as it is termed; that is, the Hamburgs and other sorts of grapes which produce large bunches, should have the upper parts of the cluster or shoulders tied up with matting to the trellis so as not to press upon the lower berries. Air should now be given freely and a good moist temperature kept up by watering the floor, walks, &c. twice or thrice a day, according to the weather. Keep the laterals pruned in to the last bud next to the previous stopping, and tie up the leading shoots carefully where the vines have not made the entire length of the house.

Grapes in cold houses will now just be in bloom or just setting their fruit, and will require to be kept at a slightly raised temperature, by closing up the sashes early in the afternoon.

The border, if not over rich, may now have a slight dressing with guano, at the rate of two or three pounds to each vine spread equally over the surface.

PEACH TREES, IN POTS, may now be placed in the open air, selecting a warm sheltered place. Water occasionally with guano.

PEACH TREES should now be attended to. The fruit should be properly thinned, on no account leaving too much on the trees, which is only done at the sacrifice of quality. See that the branches are properly thinned out, so as to produce a succession of *young wood*, on which *alone* the peach bears its fruit.

STRAWBERRY BEDS should now be covered with short straw or grass to keep the fruit free from dirt.

BLACKBERRIES should be firmly secured to tall stakes, and mulched with mowings of the lawn.

FRUIT TREES budded last fall or grafted this spring should be looked to. See that the suckers, which always break out after the tree is headed down, are rubbed off to prevent the robbing the bud or scion of the sap. This being done the young buds should be securely tied to the stock or to a stake to prevent their being broken off by the wind.

PRUNING TREES. This work may now be attended to at more leisure than in April and May, and if any have been only partially done, or if there are others which need the knife to bring them into shape, now is the best time to attend to it.

FLOWER DEPARTMENT.

Attention should now be given to all such plants as it is intended to bed out for summer blooming, and the sooner they are got into the ground the earlier and stronger they will bloom; not but the work may be done safely for all the month, and must be where there are extensive grounds: but a portion at least should be bedded out at once.

This is the time too to tie up many kinds of plants and shrubs, such as Pæonies, Herbaceous plants of the tall sorts, and Roses, before they come into bloom, that the branches and blossoms may not hang upon the ground and have their beauty marred by the dust and dirt. This is quite too much neglected in most all gardens.

The Greenhouse and Conservatory will soon require to be put in order for the summer, by removing the winter flowering plants, and filling their places with Achimenes, Fuchsias, Japan lilies, &c. Be careful in the arrangement of the Greenhouse plants, that they are not huddled together in some by-place, to be forgotten, and injured for want of proper care.

DAHLIAS will now require to be planted out, the earlier the better for abundance of bloom: but not earlier than the 18th or 20th when wanted for exhibition. Make the ground deep and rich.

RANUNCULUS beds will require to be occasionally watered if the weather proves dry.

CAMELIAS, as soon as they have made their growth, and set their flower buds, should be removed to the open air, selecting a place shaded from the noonday sun. Plants yet in the growing state may remain in the house a week or two longer.

JAPAN LILIES should now be shifted for the last time into flowering pots.

ERICAS which require it should be shifted into larger pots, or they may be planted out in the open ground in a half shady aspect in a proper soil.

ANNUALS of all kinds forwarded in frames, such as Asters, Coxcomb, Amaranthus, &c., may now be set out in the border.

GLADIOLUS, TIGERFLOWER, &c., should now be planted in beds in the open ground.

PORTULACAS of the different sorts may now be set out in circles or in beds, where they make a dazzling show all summer.

ROSES should be planted out now, selecting a deep rich soil.

CARNATIONS and PICOTEEES will now be running up to flower, and will require to have their stems neatly tied up to stakes.

AZALEAS will now need to be liberally watered and syringed so as to get up a vigorous growth, on which their successful blooming wholly depends.

HYDRANGEAS may now be shifted into larger pots.

CACTUSES may be repotted as soon as they have done flowering.

PELARGONIUMS, now in full bloom, should be shaded from the noonday sun—and they will keep in flower a long time.

GREENHOUSE PLANTS of all kinds will need attention as they are removed from the house. Some should be shortened in, others repotted, and the whole kept in as neat condition as if they remained in the house.

FLOWER GARDEN AND SHRUBBERY.

Owing to the abundance of rain in April and May we presume the garden and shrubbery is scarcely more than in good order now. If not let it be done immediately. The edgings should all be neatly clipped—if box—and mown if grass, and the vacant spaces allotted to flowers filled up as soon as possible. Dahlias answer a good purpose in many places, and Salvias and other tall growing sorts do finely in others.

The earth should be stirred often, and kept entirely free from weeds: not neglecting to tie up every plant which, from the weight of the flower-stems or the foliage, is likely to fall to the ground.

June is a good month to sow all the biennial and perennial seeds which are usually raised for producing seedlings, such as Blue Bells, Foxglove, Hollyhocks, Pinks, Sweet Williams, &c. In the hurry of the spring this is often forgotten till too late to have them bloom next year.

Hyacinths may be taken up the last of the month and their places supplied with annuals or verbenas, &c.

Attend to the destruction of insects, particularly the Green fly and the Rose slug; oil soap will doctor them off in "no time."

VEGETABLE DEPARTMENT.

To keep up a succession in this department is the aim of a good gardener. This can easily be done with a little attention and by successive sowings of seeds.

Tomatoes, Peppers, Egg plants, and all such tender things should now be set out. Celery should be pricked out in beds, preparatory to the final planting in trenches. Peas for a succession, as well as Sweet Corn, should be planted immediately.

Attend to the frames, and bring forward the Cucumbers and Melons. Water liberally, and give an abundance of air in warm weather.

THE MAGAZINE
OF
HORTICULTURE.

JULY, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Ornamental Trees adapted for Parks, Lawns and
Pleasure Grounds.* By the EDITOR.

HAVING in our two previous papers, noticed and described those kinds of trees of which there were two or more species adapted to the purposes of ornamental planting, we shall conclude the series by detailing the names and characteristics of those of which there are mostly only one well known and desirable species.

34. THE HORSE CHESTNUT, (*Æsculus Hippocastanum.*) Few trees are more popular or generally admired as a street tree than the horse chestnut: its large deep green foliage, and its huge clusters of beautiful flowers, making it when in bloom one massive but stiff bouquet, render it a pleasing and desirable tree. For picturesque effect, the horse chestnut has very little claim; its regular round head and its compact form do not harmonize well with other trees. Gilpin calls it a "heavy disagreeable tree." It has neither lightness nor airiness, but on the contrary its qualities are the density of its foliage, casting a deep shade, the showiness of its blossoms, and the deep green hue of its large leaves. As a street tree, it pleases from the regularity of its growth; and, as single specimens in large ornamental plantations, it has a fine effect: but it must be introduced sparingly, or its clumpy head will render the whole mass heavy and monotonous.

It is only a moderate grower, and requires some time to attain a good size. When, however, well started it gets on rapidly and forms a very large head.

35. THE ALDER, (*Alnus glutinosa*.) The trees generally known as alders, are merely large shrubs of but little beauty, which abound in damp localities throughout the country. This, however, is a foreign tree, attaining a height of forty or fifty feet. It loves a rich moist soil, and thrives admirably in low land, where scarcely anything else will grow. Gilpin calls it a "more picturesque tree, both in its ramification and its foliage, than any of the aquatic tribe except the willow." In England, he states, it fringes the banks of the river Mole, and what beauty the stream possesses "it owes chiefly to the alder."

The trees become much more picturesque from age, and in suitable locations on wet lands and near running streams the alder may always be introduced.

36. THE ASH-LEAVED MAPLE OR NEGUNDO, (*Negundo fraxinifolium*.) A light and rather graceful tree, nearly allied to the maple, but with leaves formed of three to five leaflets, and of a light green. The tree grows rapidly in a good soil, branches near the ground, and forms a low and rather loose spreading head. It is a very pretty tree, a native of the Western States, and should be more generally introduced into ornamental plantations.

37. THE JUDAS TREE, (*Cercis canadensis*.) This is one of the most beautiful low growing ornamental trees, attaining the height of twenty feet, forming a parasol-shaped head, and with small, smooth, heart-shaped leaves. In spring, when in bloom, it is exceedingly showy, as the branches are profusely laden with small pea-shaped blossoms of purplish pink, which appear before the leaves. This tree grows on the banks of rivers from Canada to Virginia. It grows in warm sheltered valleys on the Hudson, and seems partial to a light warm soil in a sheltered locality, where it soon forms a handsome head.

There is a foreign species, the *C. siliquastrum*, from the

south of Europe, but we believe it is not quite so hardy as the above. It is similar in general appearance.

38. THE TULIP TREE, (*Liriodendron tulipifera*.) The tulip tree, Mr. Loudon states, (*Arboretum*, Vol. 1,) "is one of the most magnificent trees of the temperate zones." In the Western States where it is found in the greatest abundance, and where it attains its greatest perfection, the trees are 120 to 140 feet in height, with a trunk 6 to 7 feet in diameter. The leaves are large, smooth, of a glaucous green, and of a peculiar form, four-lobed, the middle one appearing to be cut off and notched at its summit. The flowers are large and brilliant, of a yellow tint, shaded or variegated with red and green. They are produced singly on the terminal shoots, and appear in great abundance on large trees.

Nothing indeed can be more splendid than the tulip tree, in whatever situation it may be planted; either as single specimens in parks or lawns,—introduced into belts or irregular plantations of trees, or employed in the formation of stately avenues. Its majestic pyramidal head, and its straight trunk,—its large, clear, singularly formed foliage, and its showy tulip-formed blossoms, each give it a claim to the first place among ornamental trees.

Unfortunately the tulip tree is rather difficult to transplant, unless when young, say from five to six feet high; every additional year's growth adds to the uncertainty of its success. The roots are large, soft, fleshy and brittle, and unless nursed with peculiar care and planted in a light, fine, friable soil, they are apt to die off. It is one of the most desirable of all our hardy trees, and deserves all the care that may be bestowed upon it.

39. THE UMBRELLA TREE OR MAGNOLIA, (*Magnolia triptala*.) No trees can exceed in majestic growth, beautiful foliage, and magnificent flowers, the several species of magnolia. Indeed, estimating them in all their qualities, they must be considered the grandest tribe of ornamental trees in the world. They almost exclusively belong to North America: *M. conspicua*, and some smaller species, are found in China and Japan, but with the exception of these, which are

scarcely more than shrubs, they are wholly American. They extend throughout the United States from Massachusetts to Louisiana, and embrace six or eight different species, namely, *M. grandiflora*, *auriculata*, *acuminata*, *tripetala*, *arolata*, *macrophylla*, &c.

The *M. tripetala* is one of the hardiest and most common species, and is found growing as far north as New York, though rather rare in that State. It attains the height of thirty to forty feet, and is somewhat branching, forming a low spreading head. The leaves are large, broad and long, and the flowers are about seven or eight inches in diameter. It is a fine tree for the latitude of New England, and should be introduced wherever there is space to plant a beautiful tree. It grows rapidly, transplants readily, and soon forms a handsome head.

The *M. auriculata*, *acuminata* and *macrophylla* are each beautiful trees; but they are less common than the above: the latter is said to be rather tender in the climate of New England. It flourishes finely around Philadelphia, and if a light soil and a dry location in winter are selected, we think it will prove quite a hardy tree.

40. THE KENTUCKY COFFEE TREE, (*Gymnocladus canadensis*.) The *Gymnocladus*, though a native tree growing tolerably abundant from Kentucky to Canada, is quite uncommon in our gardens. It is rare to find even a moderate sized specimen under cultivation. Its northern limit is about Montreal, but it is plentiful in Kentucky and Tennessee, where it flourishes in the greatest perfection, attaining a large size.

It is an upright growing tree, with but few small branches, and with very blunt shoots, which in winter appear wholly destitute of terminal buds, and which then have a dry and dead appearance. But as spring approaches, these apparently lifeless sticks bud out, and in a short time are clothed with a luxuriant and beautiful foliage, whose individual leaves, which are bipinnate, are upwards of three feet long, and of a pleasing bluish green shade. The head is roundish or oval, and from the lightness of its leaves, forms an elegant tufted

head. The flowers are white, in racemes of two inches long, appearing from May to July.

It likes a deep and rich soil, where its roots can penetrate downwards, and it then forms a most beautiful tree.

41. THE CATALPA, (*Catalpa syringæfolia.*) The Catalpa is a native of the Southern States, and is found growing on the banks of rivers in the Carolinas, Florida and Georgia, where it often attains the height of fifty feet. It is very showy, particularly when in bloom; its large panicles of bell-shaped flowers, of a whitish tint, finely spotted with purple and yellow, give it the appearance of a huge bouquet. These, terminating the end of every shoot amid its very large light green foliage, have a remarkably gay aspect.

The tree, in some localities, is sometimes winter killed; but it is generally considered quite hardy, and with the single exception that it is likely to be broken by the wind from the soft and brittle nature of the wood, it would be very extensively planted. Introduced sparingly, as all such large flowering trees should be, in ornamental plantations, it has a fine effect amid other trees.

42. THE PAULOWNIA, (*Paulownia imperialis.*) This recently introduced tree, which greatly resembles the catalpa both in leaf and flowers, proves to be fully as hardy as the latter tree. It grows with the same luxuriance, has immense leaves when young, and its flowers are produced in large panicles like the catalpa, and differ little only in color; those of the Paulownia being of a pale bluish violet.

It is one of the most rapid growing trees for two or three years, and in consequence of this, the gross half ripened wood, made late in summer, is often likely to be killed by the winter: but it springs up from that portion below where it is injured, and soon renews itself and forms a good head. It grows readily from cuttings of the branches or roots, and will ere long become a common as it is a beautiful tree. It likes a good soil on a dry substratum, where it stands the winter much better than where the water remains about its roots.

(To be continued.)

ART. II. *Principles and Practice of Grafting.*

From the Gardeners' Chronicle.

NO. V.—ENGLISH CLEFT GRAFTING, fig. 31, (*Grefte en fente dite à l'Anglaise.*) This mode is not generally employed, except for hard-wooded plants, with little sap, and small medullary sheath.

Operation.—Take a straight well-grown shoot, and cut it to the length of two or three eyes; cut the base with a long slope opposite the lower eye; make a longitudinal slit in the face of the slope, so as to form a tongue. Let a counterpart be made in a stock of the same size as the scion; introduce the tongues of each into the slits prepared for them, and thus unite the whole. A piece of paper tied round this graft will be sufficient for securing it.*

CLEFT-GRAFTING IN THE SIDE OF YOUNG STEMS, BRANCHES, AND SHOOTS, OF THE SAME SIZE AS THE SCION: fig. 32.

Operation.—Whatever may be the nature of the scion, its base should be cut in as lengthened a wedge-shape as circumstances will permit. The place intended for it in some analogous stock should be previously fixed upon, and always in the fork of a small ramification of the young stem, or in the axil of one of its leaves, or of an eye. This young stem should be cut back a little above the place intended for the insertion of the scion, always taking care that the small stump has one or two eyes left, or some small branchlets, half leaves, &c.

We make at the place selected for the operation in the stock a somewhat slanting cut, downwards, till it reach the

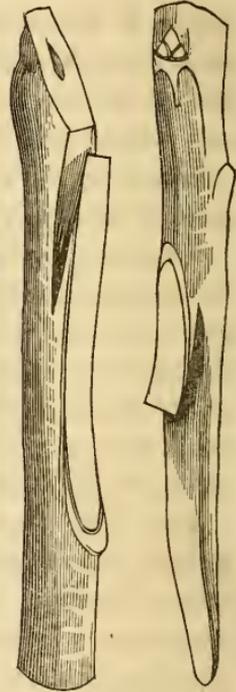


Fig. 31. *English Cleft Grafting.*

* In M. D'Albret's figure the tongues are represented much too long. Fig 31, as here given, will convey a correct idea of the form which the respective parts should possess.

medullary sheath, dividing it into two nearly equal parts, as may be seen by the figure. This cleft should be made by a single effort, and as quickly as possible, in order that the blade of the knife may not have time to deposit oxide of iron, which is always injurious to vegetation. The place being thus duly prepared for the reception of the scion, it is inserted; and it must be maintained in its position, and otherwise attended to according to the principles explained under the head of "General Observations."



Fig. 32. Cleft-grafting in the side of young Stems, Branches and Shoots, of the same size as the Scion.

This newly-invented mode may be substituted for all the others comprised in this group, and it possesses many advantages which cannot be obtained from them; for it is applicable to plants of which the branches and other younger productions are of the smallest possible dimensions. I have grafted by this proceeding some Heaths and Junipers, of which the parts worked were scarcely one-twenty-fifth of an inch in diameter.

The different species of Oaks, Beeches, Walnuts, and Chestnuts, &c., either in the solid or herbaceous state, generally take well by this mode of grafting. We can, moreover, easily comprehend the advantages which result from the small stump being reserved for the purpose of drawing the sap, which, forced to collect in it, descends along the bark, and powerfully contributes to the union of the adjoining parts. During the time that the graft is taking, the productions which are developed on the small stump should be pinched, or otherwise kept in check, in order to prevent them from producing a different effect from that for which they were intended; after the graft has fairly taken, the small stump should be gradually more and more reduced, till it entirely disappears.

SECTION III.—GENERAL OBSERVATIONS ON CROWN GRAFT-

ING.—The name of this mode of grafting indicates sufficiently the manner in which it is usually applied (see fig 33), but it is not unique, as will be seen. It is adapted for the regrafting of large old Pear and Apple trees* of bad sorts, or others that are too numerous, or that are placed in situations unfavorable for the variety of fruit which they bear. The stocks ought to be treated in February as the strong trees destined for being cleft-grafted are at that period. It does not make old trees young, as has been stated by many authors; but it gives them a somewhat youthful appearance by the renewal of their branches. It is an advantageous substitute for the lopping in of good sorts, for the shoots from grafts are more proper for training than those are which spring naturally through the old bark.

We can know the proper time by the movement of the sap in some reserved shoots, as in the case of cleft-grafting; besides this inspection, we may assure ourselves by ascertaining whether the bark of the stock is easily detached from the alburnum, and if so, we proceed with the operation as follows:—

Before amputating afresh the branch or trunk, fix upon the most suitable place for the graft, and with a saw shorten back to that point, regulating and smoothing the wound with a knife; then mark out the place for each scion, about $1\frac{2}{10}$ inch apart, always choosing those points where the bark is the most regular; but as the latter is always coarse and tough on such trees, we cut it lengthwise for about an inch in length, taking care that the blade of the grafting-knife does not pene-

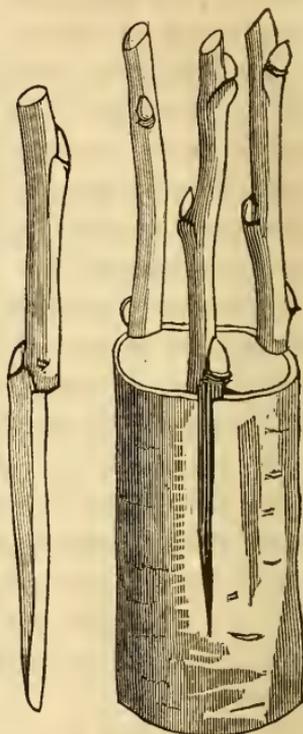


Fig. 33. Crown Grafting.

* Stone-fruit trees cannot be grafted by this proceeding, because their bark will not rise at the time.

trate the alburnum. As this instrument is frequently insufficient for raising the bark so as to make way for the scion, we make use of a small piece of hard wood, cut in the form of the scion, such as the latter is represented, *fig. 33*; and in introducing the point between the bark and the alburnum, we must always be careful to bruise the latter as little as possible. In order to avoid this, the instrument should not go down farther than the end of the cut made in the bark, thus effecting merely a slight entry for the scion, which, it will be observed, is cut with a long slant, and a small shoulder at the upper part of the slope, opposite to an eye. The scion thus prepared is inserted in the opening commenced for it, and gently pushed down till its shoulder rests on the top of the stock. The operation is similar for all the other scions which the stock may require, their number depending upon its size. The whole being placed, they are secured by a split Osier firmly fixed to the stock, and brought two or three times round, and as near to the amputated part as possible.

We may employ this mode of grafting, in some extraordinary cases, without cutting off the top of the stock, when

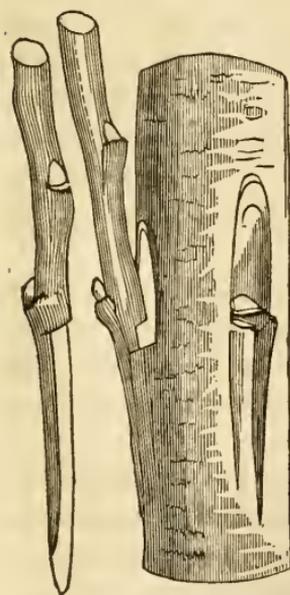


Fig. 34. Side Grafting.

we would wish to place one or more scions along a stem destitute of lateral branches. This, which M. Thouin has enumerated amongst the varieties of side-grafting, has received some modifications, which we shall here detail, referring, in the first place to *fig. 34*. By means of a sharp chisel, three-quarters of an inch broad,

a

make in the stock a transverse cut the whole breadth of the chisel, and about as deep as the thickness of a finger; above this, cut out with the same tool a somewhat triangular notch, of $1\frac{1}{2}$ to 2 inches in length, with its depth almost nothing at the commencement; but increasing progressively as the chisel

is made to penetrate towards the bottom of the first cut, as is represented at *a*. The object of this notch is to stop a small portion of the ascending sap, in order that it may be absorbed by the scion. In putting on the latter we place it as directed in the preceding case.

ART. III. *Pomological Gossip.*

LACHMERE'S SEEDLING GRAPE.—This grape, which has been highly praised as a new seedling, possessed of qualities "resembling the Muscat of Alexandria," and of which information was asked in our last volume, by one of our correspondents, (XVI, p. 138,) has recently fruited in the collection of Mr. Allen, of Salem; and if his vine was true to name, as there is little doubt, it proves to be Macready's Early White, an excellent early grape, but no more like the Muscat of Alexandria, than the Black July is like a Hamburg. For several years we have cultivated and exhibited Macready's Early White, and have recommended it to amateurs, as an excellent early sort, peculiarly sweet and rich; and we were somewhat surprised to find this comparatively old variety brought out under a new name, with qualities ascribed to it which it never possessed. Mr. Allen had his vine of Mr. Buist, of Philadelphia, and if it is not true, we presume he will correct the error.

This notice reminds us that we intended to advise cultivators, who would like to try the foreign grape in the open air, that Macready's Early White would probably prove one of the best, as it is earlier than the Pitmaston White Cluster, or Sweet Water.

PRESERVATION OF APPLES.—We recently had occasion to notice some fine specimens of pears, which had been remarkably preserved by Mr. D. T. Curtis, of Boston. We have recently had the pleasure of receiving several varieties of apples, which, for their condition and excellence, at this late season, were fully as remarkable as the pears of Mr. Curtis. These apples

we received from Mr. J. M. Ketchum, of Brandon, Vt., with the following note:—

Dear Sir: Accompanying this I send you a few varieties of apples, of my raising in the years of 1849 and 1850. The specimens are perfect as to complexion and smoothness of what are generally raised here; as to size I may say they are deficient. The varieties are as follows:—

Winter Pippin.—Generally in use from December to March. I saw a tree of this variety that bore over thirty bushels of fine fruit the past year, (not any refuse.) [This we do not doubt is the Winter Harvey, which we noticed last year, (Vol. XVI, p. 75.)]

Baldwin.

Esopus Spitzenberg.—Tree apt to canker. I kept the fruit of this variety very well into July, and the last of them into November.

R. I. Greening.—(Generally good.) Kept well the past year into July; after that time worthless.

Black Gilliflower.—(Very dry here.)

Roxbury Russet of 1849 and 1850. I have now nearly a peck of those grown in 1849.

For long keeping, I arrange the fruit on shelves in a tight cupboard, with great care not to have the temperature changed. I had Porters last week that were fresh and nice, kept in barrels: last year I had them into July. I have now in the process of cultivation about two hundred and fifty varieties of apples, and a good proportion of other fruits. I have many new kinds that I expect will come into bearing this year. Resp'y yours, J. M. KETCHUM.

KINGSLEY APPLE.—Specimens of this new apple, which has been highly praised in Western New York, have been forwarded to us by Dr. Moses Long, of Rochester, and we shall give an account of it in another number. It certainly keeps well, and if its quality is equal to its long keeping, it will be a valuable acquisition.

XERES, or SHERRY WINE GRAPE—This new grape, which has fruited in the collection of Mr. Allen, of Salem, and

which was noticed by our correspondent, Mr. Cabot, in his communication upon new fruits, (p. 64,) proves to be the White Nice. Mr. Allen recently exhibited specimens of this year's crop, and their large size and better growth at once enabled him to detect its identity with the latter variety. This adds another to the many errors with which our catalogues of grapes abound.

PRESERVATION OF FRUIT.—H. Meigs, Esq., secretary of the New York Farmer's Club, recently read the following translation of a mode of preserving fruit, from the *Revue Horticole*, by M. A. Du Breuil, of Rouen.

A novel but judicious mode of preserving grapes is given by M. A. Du Breuil, Professor of Arboriculture and Horticulture. Cover the table in the fruit-room with fine dry moss. On this lay the bunches which have been carefully picked, cleaned of all bad berries; wipe the sound ones very carefully with a delicate piece of flannel. Leave the bunches on the moss three days, each bunch separated from the others an inch or two. For want of moss, cotton will answer. This prevents the grapes from being injured by the pressure of their own weight. Prepare hoops of proper strength, some three feet in diameter, with proper strings to suspend them, and the grapes to be attached to the hoops. Take iron wire stout enough when made into an S shaped hook to suspend one bunch. Now, fix one of these hooks in the bottom end of the bunch, and hang it on the hoop. This position causes every berry to *hang away from its neighbor*.

This position is found to give the most perfect chance for preservation to each individual berry. One hoopfull of grapes may be hung over another; or we can use square frames with slats across, far enough apart, and hang the bunches on these slats. When they have hung some eight days, they will be free from moisture, if the weather is not too damp. When they are dry, close up the fruit-room, *hermetically*, if you can. Examine the grapes every eight days and remove all bad ones. A moderate amount of chloride of lime, very dry, as it melts by taking up the moisture of the fruit-room. About thirty pounds weight of it will answer for the fruit-

room I have described—that is, about fifteen feet long, twelve feet wide, and ten feet high. All other fruits may be preserved in this room as well as grapes. The grapes intended for preservation must be gathered when fully ripe.

It is unnecessary to say that the fruit-room has double walls, thick roof, and that frost must not get inside of it.

M. Du Breuil's method is well worthy of trial. Mr. Meigs truly remarks, in a note, that the Isabella and Catawba grapes might be had from Christmas to May Day.

THE WESTCOTT PEAR.—In our description of this pear in our last number, (p. 261,) we remarked that we believed it had not yet fruited, “only in the vicinity of its native locality.” This was an error, which we take this early opportunity to correct, as it fruited last year in the collection of the Hon. M. P. Wilder. Our mistake arose from the fact that Mr. Wilder had exhibited, at various times, specimens of new pears sent to him from various cultivators. The Westcott, however, was not one of the number.

ART. IV. *Treatment of Plants intended for Winter and Spring forcing for their flowers.* From Paxton's Magazine.

THE following excellent article on the treatment of plants for winter forcing is one of great value to every cultivator, who is desirous of keeping up a fine succession of bloom in the conservatory or greenhouse through the winter and spring. It is scarcely necessary to remark that the proper treatment of plants for this particular object, is not generally understood by amateurs, for it requires a certain amount of experience which only the observing professional man is generally able to acquire. It is the common complaint, that, though plants will grow and thrive, they do not repay their care by a sufficient amount of bloom; and while they should be objects of beauty, they are merely specimens of winter

verdure. To remedy this is the great art of the gardener, and though we cannot suppose it will be at once accomplished by merely reading an article, we can at least hope that the treatment recommended will enable every amateur to make great improvement in cultivation, and eventually to have entire success :—

When the summer and autumnal beauty of the flower-garden is departed, the gardener commences an anxious supervision of the reserve-garden ; or, to employ a commercial phrase, “he begins to take stock” of what he has in store likely to be serviceable in producing an in-door floral display, throughout the approaching winter ; and he may consider himself an enviable man, if he is quite satisfied with the result of his inspection.

Too often the very reverse of this is the fact ; nor is there anything very surprising in the circumstance, if amid the unceasing activity of business, and the various demands continually made on his attention in summer, the stock of forcing-plants should have become somewhat overlooked until late in the season.

It is a truthful proverb which declares that “to reap in summer we must sow in winter ;” and this is equally applicable to plants intended for forcing as well as other things, for unless an efficient stock of robust, well-cultivated plants be provided early in the summer season, it is in vain we look for flowers—leaves and shoots will rather be the produce, when artificially excited in the winter season.

The purport of the following observations, therefore, is to invite more timely attention to the matter, as I have known the following treatment advantageously and with the best success attend the preparation of plants intended for forcing for their flowers, or fragrance.

As a general rule, to which, however, there are exceptions, plants intending for forcing may be separated into two classes—those requiring to be established in pots at least a year, as Roses, Persian Lilacs, and other hardy shrubs, Rhododendrons, Pæonies, or what not ; and those that have been pot-

grown five or six months previous to forcing, as *Pelargoniums*, *Salvias*, *Heliotropiums*, and other half-hardy plants.

Amongst the exceptions to these, may be enumerated the *Lily of the Valley*, and a variety of hardy, fibrous-rooted, herbaceous plants, as *Phloxes*, &c., which, if taken up with good balls containing their roots undisturbed, will succeed, if forced immediately; although a better and more certain production of bloom might reasonably be relied on, if established in pots two or three months previously to the operation of forcing.

On the practical appreciation and observance of two or three essential principles, all the ultimate success in the artificial excitation of plants depends; for, unless they are early induced to establish themselves, complete a vigorous and healthy growth, and are, therefore, early thrown into a state of comparative rest; and, moreover, unless when introduced into the forcing-house the excitement is conducted slowly and gradually at first, a due balance being carefully maintained between the artificial application of heat, and the natural amount of light obtainable in our dreary winters, the certain result will be a very imperfect premature development of inflorescence; for notwithstanding the ease with which plants may now-a-days be supplied with heat artificially, it is apparently impossible for science to produce a substitute for light; and solar light is equally as essential to mature and healthy growth, as heat is advantageous in inducing any elongation or development of the plant itself.

With reference to the first-mentioned class of plants intended for forcing—hardy deciduous shrubs and evergreens, as *Persian Lilacs*, and *Roses*, *Rhododendrons*, *Kalmias*, &c., some attention should be paid in selecting them to procure such as are dwarf, robust, short-jointed, and yet the most vigorous young plants, that can be obtained from the nurseries. The most sunny and exposed part of the reserve-garden should be selected for them; and the soil, if not naturally the best, should be improved by incorporating with it a good body of turfy mellow loam and peat, and if the latter is not naturally sandy, a considerable portion of rough sand must

be artificially added, so as when roughly dug over to afford an extensive rooting medium, and in a deep rich soil nothing will induce the production of abundance of fine fibrous rootlets, sooner than the plentiful presence of sand.

The middle of October is a good time for transplantation to the reserve department, where the plants should be inserted in nursery lines alternate with each other, and plenty of space should intervene between them in the rows and lines, so as to encourage their development into compact bushy specimens. When the planting is finished, if any pruning or removal of stray branches will improve their appearance by rendering them more symmetrical, this should immediately be performed.

When the selection is made from the nursery, a few of the most vigorous looking plants that possess a greater tendency than others to grow upwards, should be selected; and for the sake of having a variety formed into standards of different heights. This will be easily accomplished with such genera as *Rhododendron*, *Kalmia*, *Azalea*, *Prunus*, *Cerasus*, *Ribes*, *Seringa*; and such leguminous genera as *Genista*, *Cytisus*, and *Adenocarpus*, especially make nice standards by grafting on some vigorous member of the family to which they belong, and which I have seen exemplified in a very interesting manner in the Arboretum at Bickton. The genera just enumerated are well adapted for forcing; and although the neatest standards are formed by grafting, very good ones may be obtained by choosing vigorous young plants, and ultimately concentrating all the vigor into one stem, by subsequently removing all other branches, and heading back the one retained when three or four feet high, and attention paid to the removal of the stem-laterals, as often as they make their appearance *after the formation of the head*, which will generally be accomplished in two seasons after the first heading-back of the chosen stem.

When the planting is finished, the ground should be superficially forked over, to render all straight and even, and afterwards receive a good mulching of exhausted tan or short litter of any kind to ward off the effects of severe frost; a

similar mulching being continued the succeeding spring and summer also, if a very dry one, when copious waterings should be given occasionally to obviate the effects of drought.

Whatever pruning is requisite should be altogether accomplished in summer during the growth of the young wood, which must be repeatedly regulated by disbudding and stopping ; or in the case of standards by training erect the stems, removing their side-shoots, stopping when high enough, and supporting for a season or two with stakes. Any tendency to flower must as repeatedly be checked by the removal of the germs of inflorescence as soon as they are perceptible, as this operation, in conjunction with the timely disbudding of superfluous growth, and the stopping of the more rampant shoots, will greatly invigorate the remaining wood, which, in consequence of being thereby exposed to the greater influence of sun and air, will attain an earlier and more perfect maturity before the approach of winter. This is always a desideratum in cultivation ; but in the case of plants intended for forcing, the maturity of the wood either naturally, or by artificial means, is an indispensable step to success.

The plantation will now have completed one year's cultivation under circumstances consonant with its well-doing and the object in view ; and doubtless the best plants will be in fit condition for potting, &c., to be forced the year ensuing : but, pre-supposing the major part to have been young plants, when selected, they will certainly be greatly benefited and in better forcing condition if encouraged in their present position for another year, in the same manner as adopted the first season ; namely—by timely attention to disbudding, stopping of every sign of inflorescence, and mulching, watering, &c., in very dry weather.

An additional operation or two, however, must this season be performed ; each plant should have its strongest horizontal roots severed, by making a concentric incision at a judicious distance from the main " ball " of roots, with a sharp spade inserted perpendicularly to its full depth, several times during the season, previous to the taking up the plants in the autumn for forcing. This operation will of course induce a

greater number of fibrous rootlets to protrude, and consequently the energies of the plants will scarcely receive a check by lifting. Where such plants as *Rhododendron*, *Kalmia*, &c., have attained a large size—too large probably to be potted conveniently, it is a good plan to allow them to remain where they are, until wanted at once for forcing; and abundance of fibrous roots may easily be obtained by opening a suitable trench around, and laying bare the surface of the roots of each plant, then filling up the trench and covering the exposed roots with rich flakes of leaf-mould or rotten dung, and plenty of fine sand or sandy peat, in which they will freely make new rootlets. This operation is likewise applicable to large bushes that may have been long-established, and which it may be desirable on an emergency, to take up for forcing; it must, of course, be performed several months previous to forcing, otherwise there will not be time enough for the roots to find their way into the new compost.

Another operation of the greatest importance to be observed, is the protection of the plants from an excess of natural moisture towards the completion of their annual growth, whether in pots or in the open ground. This is not easy of accomplishment where plant-forcing is carried on, extensively, especially as the plants should receive every atmospheric influence apart from actual wet.

The principal difficulty, however, resides in the extent to which this is required; and surely in these days of "rough plate glass," "oiled calico," "composition bunting," and more recently "patent frame lights at 7*d.* or 8*d.* the superficial foot," something might be done for the protection of a lot of plants intended for forcing from an excess of moisture. Greater expense is sometimes bestowed upon a less deserving purpose; but however this may be, protection of some kind is indispensable to success; for if plants are exposed to all the rain which falls from Heaven in a "wet English season," their annual growth will not ripen sufficiently to flower except, very imperfectly, when artificially excited.

Perhaps the most economical protection that could be devised, would be a tent-like erection on the ridge-and-furrow

principle, similar to that erected last spring over the exhibition of American plants in the Botanic Garden, Regent's Park, where the protecting material is supported on a skeleton frame of strong posts inserted into the ground, with stout wires stretching from ridge to furrow to retain the supporting frame-work in position. The sides and ends should of course be left fully exposed to a free circulation of the atmosphere at all times; and in fine, or only partially wet weather, the covering should be altogether removed, or rolled up, whilst the frame might remain to be used again in case of need.

I have been thus diffuse upon this subject, because it is an all-important one, and a circumstance that too much escapes observation in the treatment of both fruit trees and flowering shrubs that must undergo artificial excitement, at a period, too, when every natural influence is but fitfully present in a very modified form.

Pots as deep, and otherwise as roomy as can be spared for the purpose, must be selected for potting the stock early in October in a rough compost of good loam, leaf-mould, and sandy peat, the drainage being secured by crushed bones or lumps of charcoal and green turf. In lifting the plants from the ground, three individuals should be employed, two for the opposite insertion of their spades, and one for taking care of the plant being lifted; the balls, composed of a mass of root-fibres, must be reduced as much as it is consonant with discretion and common sense; and when potted with tolerable firmness, and as deep as circumstances will admit, must be plunged under the north wall of the reserve-ground, in saw-dust, coal-ashes, old tan, or sand; and unless the weather is inclined to be dry and windy, no water should be given, although a brisk shower or two will refresh and make them clean. Here they may remain plunged; the same attention to watering and general management being accorded them as when in the open quarters of the reserve garden; and, if needs be, protected from *excess* of moisture also, as before hinted throughout the winter and following summer, until wanted for forcing in succession, before which the plants should be lifted from the plunging medium, the

pots well cleansed, and placed upon the surface of the bed for a week or two, so that the effects of removal may not be felt when introduced into the forcing-house or warm conservatory. Plants thus treated, will continue in capital forcing condition for many years, provided care be taken not to expose them too suddenly to the vicissitudes of early spring winds immediately after being forced; they must rather be gradually inured to the open air again.

A little fresh compost may easily be introduced about them *immediately after flowering*, by reducing the balls somewhat, and repotting and treating them in all respects in conformity with the directions given above. After being successively forced four or five times, it will be necessary to gradually discard any debilitated ones, and replant the others for a couple of years or so, in a good soil and situation in the open ground, where they must receive a severe old-wood pruning if requisite, to reduce them within bounds, and encourage a new growth, before being potted again precisely under the conditions first adopted, with the addition of watering them well occasionally with weak liquid manure, to reinvigorate them for forcing again, which they will generally be better suited for than newly provided plants. As the old ones deteriorate, however, a new stock should gradually be preparing for supplying the deficiencies; for, by the preparation of a few fresh plants annually of what may be most required, a vigorous, healthy supply is thus always kept on hand.

The generality of half-hardy plants suitable for the purpose should be propagated as early in spring as cuttings are obtainable—say in February; and when well-rooted, potted in suitable pots and compost, and grown in a pit or frame until the last week in May, when they will be fit for planting out in a good stiff, though not over rich compost, on the north or west border of the reserve-garden. In planting, they should be allowed two or three feet asunder, to enable them to grow into large, robust, and compact plants, which they will do by the end of July, if the following treatment of them is adopted:—From the time they become established in pots, check every effort to grow in a straggling manner by

closely pinching back every shoot when two or three inches long; rigidly observe the same practice when planted out, and growing vigorously (by the aid of liquid manure if the season is a dry one). Not a bloom must be permitted to expand upon them, nor a shoot to go "unstopped" when four or five inches in length; for if the resources of the plants are permitted to be expended beyond the production of sturdy shoots and foliage now, a poor return of flowers will be the certain result at the time they are anticipated and most in request.

At the commencement of August, preparation must be made for potting them in a compost similar to that in which they have been growing; with the addition to it of a plenty of coarse portions of well decomposed turfy loam and vegetable matter.

A single potsherd and plenty of moss in a fresh state will make the best of drainage, as into the latter, when becoming somewhat decomposed by the action of water passing through the pots, the plants will freely root. Whilst the employment of good roomy pots will be necessary on the one hand, (as obviating the necessity of reducing the balls of the plants no more than can be avoided in the process of taking them up), there can exist no objection to their employment on any other score, being mainly intended (and chiefly employed when in flower) to fill up vacant spaces and occupy the most prominent positions in large greenhouses or conservatories, the decoration of corridors, entrance halls, &c., in conjunction with forced specimens of *Rhododendrons* and other hardy shrubs. The beginning of August is oftentimes very hot and dry; it will therefore be necessary to remove the plants when potted into the north side of a cold pit, where they must receive a good watering, and be kept tolerably close, with an occasional syringing for three or four days as many times a day; by which time they will have recovered from the check unavoidable under the best of circumstances in transferring plants in the midst of vigor, from the open ground to the confined medium of a pot.

Gradually inure them to the open air again, and after the lapse of ten days or a fortnight, they will be fit to transfer to the open ground, where they must be plunged in coal-ashes, &c., as hinted for shrubs. In this situation due attention must be paid to the routine of watering, stopping; and the removal of flowers, &c., must again be persevered in; and if the remainder of the season continues fine and dry, the plants will derive the greatest benefit and assistance in the maturity of their summer growth, from the check experienced in being repotted, combined with freedom of exposure afterwards. In consequence of their comparative hardiness, a nocturnal frost or two in September need not create alarm for their safety; although it will be advisable to remove them to the temporary protection of a cold-pit towards the end of that month when the "Ice King" has sometimes made havoc amongst half-hardy plants left unsheltered in the open air.

When placed in the pit, they must again be plunged to the pot-rims, receiving but little moisture, being rather allowed all the repose, short of actually suffering from dryness at the root, and plenty of air in favorable weather throughout the rest of the autumn and ensuing winter, until wanted for forcing in succession, in conjunction with hardy shrubs.

Pelargoniums, Verbenas, and Heliotropiums, are bad plants (from the stringy nature of their roots when grown vigorously) to "lift" with good "balls" when planted out; they must therefore be cultivated in good roomy pots throughout the season, precisely under the same conditions and treatment as above recommended for other half-hardy plants; bearing in mind, however, that Pelargoniums intended for forcing cannot be propagated too early, too rigorously be subjected to the "stopping" process, nor lie exposed to too much sun and air in the maturation of their wood when plunged in the beds of the reserve-garden; and the compost they are grown in should be exclusively loam and a good deal of sandy peat, with plenty of charcoal lumps and potsherds, about the size of marbles, extensively commingled. Such a treatment we have known render Pelargoniums what they ought to be for forcing; namely, as dwarf, hardy, and

stocky as a worn-out besom, with the foliage free from the "spot" disease, and correspondingly rigid.

In addition to the foregoing general directions for the preparation of plants for forcing, a few special ones are necessary, as being applicable in particular cases. Hyacinths, and most Dutch bulbs, for instance, if required, as they sometimes are, for exciting very early, must be planted in their blooming pots directly they are imported—in August, if they can be got—and plunged in sawdust or coal-ashes, beyond the influence of light, and well protected both from excess of cold and moisture, until required for use : but by no means should bulbous-rooted plants be introduced into the forcing-house until such time as the pots are full of roots, and the bulb found "starting" into growth.

Half the failure which occurs in the forcing of Dutch bulbs, arises from the circumstance of their not being planted long enough to establish themselves sufficiently by filling the pots full of roots, before being placed in heat. Notwithstanding, this circumstance cannot at all times be controlled, in consequence of the annual importations from the Continent not regularly taking place so early in the season as desirable.

Many annuals and biennials too, although they will scarcely bear "forcing," are well adapted for assisting in the winter gaiety of the greenhouse and conservatory, and affording cut-flowers for the drawing-room ; the suitability and attractive fragrance, for example, of Mignonette, Ten-week Stocks, and Double Wall-flowers, when made to flower in winter, are too well known and appreciated to require eulogizing.

For this purpose, they must be sown thinly, the last week in July or beginning of August, in pots or pans kept closely in a frame until germinated, when they must be thinned out to four or five plants in a pot, receive little water but plenty of air, and be occasionally topped or pinched back (not too much so) to render them dwarf, permitting no flowers until placed in their winter quarters, the greenhouse or warm conservatory. There is nothing more attractive than nice Dou-

ble Stocks and Wall-flowers, when they flower well in winter and early spring; the former should be sown with other annuals in July or August, the latter in April, and both should be sown on a slight or exhausted hotbed, and will make nicer plants if potted singly in a rich compost of mellow loam and rotten manure when about three inches high.

Another plan for raising annuals for winter flowering is, to sow in an open sunny border in the middle of July, and then transplant into pots; but although this may suit some kinds very well, it will be found that the generality of hardy and half-hardy annuals and biennials will succeed better by sowing in the pots or pans where they are to remain, and more especially if the semination be made rather deep in them, so as ultimately to admit, when about half-grown, of adding some fresh compost, which will additionally support and stimulate them.

Pinks and Carnations for forcing must be propagated on a hotbed, as early as pipings are procurable, and planted out when rooted in a rich border, where they must not experience any drought, but be encouraged with weak liquid manure until September, when they must be taken up with good balls carefully preserved entire, potted, in a compost the principal ingredients of which must be stiffish loam and very rotten cowdung, and plunged with other plants intended to be forced. The previous season's pipings and layers, however, will be stronger and better for this purpose, if planted on a north aspect, in nothing but peat and loam, thwarting every attempt to blossom, and potting them early in September with good balls in a richer compost than that they have just been taken from.

Such plants as Cinerarias, Callas, &c., which grow herbageously, should be planted out in rough peat, a good distance asunder, on the north border of the reserve-garden, the last week in May. They must be encouraged well with liquid manure occasionally, prevented flowering at all, taken up with good balls, divided, and the strongest plants potted singly, the weaker ones several in a pot, in September, in a substantial rich compost of loam, peat, leaf-mould and sand, with

plenty of open drainage, and plunged with other things in the cold reserve-pit, until wanted for forcing, or, what is better, placing them in their flowering situations without being forced at all beyond in the atmosphere of the greenhouse or conservatory.

Various herbaceous perennials, as has been before observed, succeed very well, if lifted from the open ground with good balls, potted and placed at once in heat. They must not be permitted to flower, however, the season previous, and will make better plants if taken up and potted in September, having their flower stems thinned out to half-a-dozen or so, when they commence to grow : and such fragrant kinds as Lily of the Valley, the Sweet-scented Colt's-foot, &c., should not only have their flowering prevented and foliage thinned out, but should receive abundant liquid manure-waterings also, in showery weather, to invigorate the roots throughout the season antecedent to their being in requisition.

Finally, the beauty and utility of *Primula sinensis*, the fringe kinds especially, are well known, and the plants being universal favorites, they are indispensable for winter decoration. Although the Chinese Primrose will last two seasons (if division of the root-collar, and recultivation after having flowered one season, is resorted to), they best succeed when treated as a frame or greenhouse annual. Let them be thinly sown in March, in rather sandy soil, on a slight bottom heat, and when two or three rough leaves are developed, pot them singly in small pots and light rich soil, and grow them on a north aspect in a cool pit or frame, free ventilation being afforded night and day. They require a rich dry compost, containing plenty of decomposed cowdung and a little sharp sand, and in hot weather delight in moisture, though not an excess of it. In June, either shift them into their flowering pots at once, or turn them out on a shady border in the reserve department into a good, though rather stiff compost, that they may "lift" the better, and grow steadier. In either case, secure drainage and a rougher compost must be employed in their final re-potting, and this performed, they should be plunged, wide asunder, in coal-ashes, in a free, airy

exposure, and neither over watered, nor allowed to become at all dry; a medium condition being maintained, or they will either become too luxuriant to bloom at all, or have their flowering period premature; both of which extremes must be guarded against. Here they may remain until October, when they should be introduced into any appropriate situation in which they are wanted to bloom, but they must not experience a higher temperature than that of the greenhouse, conservatory, or sitting-room, for which latter situation (inasmuch as they delight in partial shade) the Chinese Primrose is admirably adapted.

The *Chrysanthemum*, too, although scarcely to be reckoned a plant for "forcing," is one of our most attractive genera for making gay the flower-garden and conservatory, at a time when the brighter hues of summer have vanished beneath the chilly breath of autumn. In a general way, this useful autumn plant is propagated as early as cuttings or suckers can be obtained from the old plants, and grown in large pots, kept plunged throughout the summer in the reserve-garden: but the neatest and prettiest specimens are to be got by turning out the old plants in April in rich soil, and thinning out the shoots to three or four upon each plant. They should be made to recline upon the ground when planted, so that the principal stems, when grown to about the length of eighteen inches, and have formed flowers, may be layered. The layers will soon root and become very dwarf, compact plants, full of flower buds by the middle of October, when they must be taken up with good balls, and potted in rich soil, and placed in a cold pit for a week or two, when they may be removed at once to their blooming situations.

The two main points to be attended to in their cultivation are to obtain strong, bushy plants (by supplying food in the liquid rather than in the solid form, and pinching back the shoots) as early in autumn as possible. They enjoy a free compost of sand, loam, and rotten manure, well incorporated, and, being thirsty plants, must at all times, especially when the flowers are about expanding, be freely sup-

plied with water or weak liquid manure. And although severe stopping and thinning of the young wood early in their season of growth is indispensable, the process must not be repeated after the formation of flowers, (beyond thinning out the buds individually, if very fine flowers are a desideratum), or the season's bloom will be altogether lost.

The fields and river-banks of Britain teem with many an indigenous flower, whose beauty and fragrance could vie, if subjected to cultivation, with many a rare exotic. *Myosotis palustris*, the marsh Forget-me-not, for example, is ever a charming plant (alike from the associations inseparable from its name, and the intrinsic modest beauty of its flowers), and will bear forcing capitally, if grown in spongy soil, and is in turn denuded of all its summer inflorescence.*

ART. V. *Notes on Summer and Autumn flowering Greenhouse Plants.* By HORTUS.

PELARGONIUMS

ARE universal favorites, no collection can be complete without them; they are also particularly well adapted for window culture. They are often allowed to grow into long bare stems with a few leaves at top, having a very unsightly appearance. To prevent this they should be cut down annually, immediately after the flowering season is passed, to within two or three inches of the main stem, and set in a shady situation to form fresh shoots. When these are two inches in length, turn the plant out and shake away all the soil from the roots, prune these a little, and repot in fresh soil, using the same sized pots, or smaller, if the roots can be got into them. Thin out crowded shoots, and shift into flowering pots during December, or January. In February

* In the removal of undeveloped flowers from plants the season before *i. e.* the summer previous to forcing in the ensuing winter, such plants as the *Rhododendron*, of course, are not included.

pinch out all the tops ; they will throw out numerous side-shoots, and form fine dwarf bushes. They bloom most profusely when the pots are full of roots. They require plenty of air and little water during winter, but must be well supplied with water as they approach a flowering state. Guard against the green fly by slight fumigations with tobacco, but it must be done cautiously while they are in flower, or the petals will drop. Cuttings root readily. When the plants are cut down is a good time for putting in a stock. Seeds should be sown as soon as ripe, not later than the end of July, to flower the following year. Place the young plants in 4 inch pots and do not shift them ; they will flower in May. The following are fine varieties and pretty distinct in color :—Marc Antony, Pearl, Forget-me-not, Orion, Desdemona, Arabella, Jenny Lind, Celestial, Rosamond, Gigantic, Mustee, and Cassandra. Those who secure these varieties will have something worthy of care and attention.

CALCEOLARIAS.

The spotted Calceolarias, showy and exotic in general appearance, and beautifully unique in their individual blossoms, are much and justly admired. Sow seeds in August, in a well drained pot, covering slightly with soil ; transplant them into boxes or pots, as soon as practicable, about an inch or so apart ; when they get crowded, pot singly in small pots, and finally shift into 6 inch pots, where they remain to flower. They succeed well on a front shelf in the house, from the time of sowing the seeds until the flower stalks appear. Keep them regularly watered and syringe overhead after the last shift. They will bear liberal supplies of water while growing luxuriantly, if the pots are well drained, and planted in a turfy, porous soil. They are easily propagated either by cuttings or offsets. After they are done blooming cut down the flower-stalks, and set the plants in a shady place to make young shoots for cuttings, or plunge them up to their necks in soil, and keep them well watered to obtain offsets. Raising them annually from seed is the simplest method of cultivating them for a large show of flowers.

GESNERAS.

There are several distinct habits in these plants. First, those having large tubers buried in the soil, the stems dying down annually like gloxinias : such as *G. Coopèrii*, *G. magnifica*, *G. Douglásii*, &c. The tubers of these should be shaken out early in spring, placed in small pots, and repotted as they require it. Again, there are those whose stems do not die annually as *G. discolor*, *G. Polyànthi*, &c. these should be well pruned down when the blooms fade, rested for a time by keeping them short of water, turned out of the pots, the roots pruned and repotted in fresh soil, when it is wished to set them a growing. And, lastly, those that make fresh tubers every year like *Achimenes* ; of this class are *G. zebrina*, *G. Herbertiàna* &c., the tubers of these should be covered lightly with soil until the leaves appear, then planted in pots to flower. A light loamy soil will suit the whole family well. Heat, moisture and shade, while growing, and keep cool and dry when dormant, are all that is necessary to produce them in the greatest perfection. They are easily propagated and increased either by cuttings, leaves, or seed. *Gésnera zebrina* has beautifully veined leaves of a rich velvety texture, with mottled scarlet flowers, and whether grown singly in small pots, or planted in masses in large ones, is second to no greenhouse plant in cultivation.

TORENIA ASIATICA

Is a gem of recent introduction. The richness and delicacy of coloring in the flower is exquisite. It is a native of the East Indies, where it has an extensive range, also widely diffused in Alpine regions ; hence it is a plant of easy cultivation, and readily propagated by cuttings. A lot of cuttings should be inserted in the fall, placed singly in 4 inch pots when rooted, so that they will be well established and the pots full of roots, before winter. During dull weather in winter they must be carefully watered, and shifted into larger pots in April, in fresh loamy soil. They soon attain a large

size, and flower all summer. Small plants are easier kept over winter than large ones, and these must be kept in the warmest end of the house, rather dry; otherwise they will damp off.

BALSAMS.

This is an old and well known flower garden annual, but when well grown in pots, branches strong and plentiful, well covered with double flowers, it is not easily surpassed in beauty, and worthy a place among greenhouse plants. Seeds should be sown about the first of April, the plants potted separately in small pots when they have made three or four leaves. When these are filled with roots, shift at once into 8 or 10 inch pots, plunging the stem as deep as possible, using rough turfy soil. Never let them droop for lack of water; if they are placed in saucers of water so much the better. When fumigating the house set them on the floor; tobacco smoke hurts the leaves.

TREMANDRA VERTICILLATA.

A new plant of great beauty; heath-like in foliage, flowers blue, bell-shaped, and produced in abundance. It is slender in growth and looks best on a small trellis. Cuttings rooted in autumn, and shifted into flowering pots in March, in a light friable soil, will flower throughout the summer, with ordinary treatment.

GLOXINIAS

Are fine summer flowering plants, of various colors, and highly ornamental. The tubers should be potted in spring, in small pots, and repotted when requisite. They require plenty of drainage and rough soil. Give plenty of water when growing and in bloom; when the leaves decay dry them off gradually; turn the pots on their sides under the stage to remain all winter. They are easily propagated from leaves inserted in sand like a cutting; a knob soon forms at the base, from which a bud is subsequently developed. Seeds are plenti-

fully produced. Sow in spring in well drained pots. The seeds are very small, and must be lightly covered with soil. Transplant them as soon as possible, lifting the plants with a small forked stick; they are apt to damp away if not lifted soon after they vegetate. Be careful of the seed pot, as they will come up for months after being sown. Prick the small plants rather thickly in light sandy soil, and afterwards pot singly in 4 inch pots, in which they will flower towards the end of summer. When they become deciduous the tubers should be kept dry, and in spring shift them into larger pots, watering carefully until they start into growth. Gloxinias hybridize freely with Gesneras and Achimenes, and undoubtedly many novelties might be produced by a careful hybridizer. It is well worthy the attention of amateurs, who have generally more leisure to devote to these subjects than practical gardeners.

COXCOMBS.

These curious annuals are generally admired, especially if grown to a large size. A comb of good dimensions should measure from two feet to thirty inches in length, oval in shape, and distinct in color. Sow seeds in April, and pot in three inch pots when they have made four or five leaves, plunging the plants up to the leaves in soil. When these pots are filled with roots, turn the plant out and shake away all the soil, repotting in the same sized pots. This keeps them dwarf; subsequently shift as they require it; any ordinary soil will grow them if well drained, and not adhesive. Occasional syringing will keep them clear of the red spider. They remain in perfection for months. Always save seed from the dwarfest plants and largest flowers.

HYDRANGEA HORTENSIS.

This is a much neglected plant; under good treatment, it is a fine object, remaining a long time in flower. Cuttings rooted in the fall, should be placed in small pots and kept over winter. They will not require much water when de-

ciduous. When the buds start in spring, rub them all off except the top one, and shift in six or eight inch pots in turfy loam. These will form one noble truss of flowers very unlike what is generally seen. The flowers are ordinarily of a pinkish color; they may be turned blue by watering occasionally with a weak solution of alum, or mixing the sediment of a grindstone with the soil; some varieties of peaty soil also have the same effect. Water freely when in flower, and sparingly in winter. They are very hardy, and may be kept out of doors if covered up with leaves in cold weather.

June 20th, 1851.

(*To be continued.*)

ART. VI. *Floricultural and Botanical Notices of New and Beautiful Plants figured in Foreign Periodicals; with descriptions of those recently introduced to, or originated in, American Gardens.*

OXALIS ELEGANS. This new and beautiful oxalis is now flowering profusely in our collection. It is a summer flowering species, blooming from April to September, of the habit of *A. cernua*, but with small fleshy leaves. The flowers are produced on long stems in clusters of five or six, and are of a deep rose color, with a rich purple eye. In England, in the collection of Messrs. Veitch, of Exeter, who introduced it, it has proved quite hardy; but in our climate it will probably require to be taken up and housed during winter. It will be a fine plant for bedding out.

TORENIA ASIATICA. This beautiful plant is rarely seen in the perfection in which it may be grown by proper care. As a plant for summer culture in the open ground, it is exceedingly elegant, provided the soil and situation suit it. It loves moisture and shade, and if exposed to the rays of our hot sun it will not grow freely, or flower abundantly. When planted out, therefore, avoid an exposed and sunny place; se-

lect one shaded the largest part of the day: water and syringe freely and a liberal show of flowers will be the result.

A fine way of having this plant in its greatest beauty is to cultivate it in rustic baskets filled with coarse peaty soil; these baskets may be suspended by wires from the roof of the greenhouse, and if the plants are shaded, and the house kept damp, their blue and purple corols will form the most conspicuous objects throughout the summer.

DIELYTRA SPECTABILIS. This new and showy herbaceous plant, which will probably prove hardy, we lately saw in bloom in the collection of Messrs. Hogg & Son, of Yorkville, N. Y. The foliage is similar to the common *Dielytra* (*Fumaria*), but the spikes of the flowers are very long and dense, and the individual corols also of fine size. It will prove a beautiful acquisition to our hardy perennials.

NEW VARIETY OF DODECATHEON. Mr. W. E. Carter, formerly of the Botanic Garden, Cambridge, has raised a new and much improved variety of the *Dodecatheon*. The flowers are larger, of a pale lilac, and the habit is more dense and robust than *Meadia*. It will prove the gem of this pretty tribe.

DEUTZIA GRACILIS. A new and beautiful shrub, said to be hardy, from Japan, was exhibited at the May exhibition of the London Horticultural Society, by M. Baumann, of Ghent. Dr. Lindley notices it as "a brilliant graceful hardy bush, with snowy white flowers like those of the syringa." If hardy in our climate, as most of the Japan shrubs are, it will prove a fine acquisition. We have plants in our collection which we hope to see in flower another year.

CALANDRINIA UMBELLATA. This new species of *Calandrinia* is a biennial or perennial of great brilliancy, almost equalling the portulaca in the size and color of its blossoms. Small plants, sown last spring, and wintered in the greenhouse, are now about six inches high, and on bright days are covered with its deep crimson blossoms. As a bedding out plant it will prove one of the showiest things recently introduced. It is readily raised from seeds.

VAN HOUTTE'S ALSTROMERIAS. The *alstromerias* are all fine showy plants, and easy of cultivation. We have now in

bloom a collection of several kinds, raised from seed received from Mr. Van Houtte, some of them exceedingly brilliant, and all of them very handsome in their various hues of orange, pink, buff, salmon, &c., with the upper petals distinctly striped. They flower in very large clusters, and as some of the plants have five or six stems, they form the showiest objects of the greenhouse during May and June.

FANCY PELARGONIUMS. The new varieties of *Fancies* seem just now to be in great repute with the English cultivators, and at the May exhibition of the London Horticultural Society a new tent, devoted to these plants and containing 400 feet of tables, was more than filled, and formed the most attractive part of the display. The varieties which secured the prizes were Queen Superb, Statinski, picturatum, Hero of Surrey, Alboni, Gipsy Queen, Annais, formosum, Jenny Lind, &c. They are all profuse flowerers, and prolong the season of pelargoniums to the end of summer.

149. CUPHEA CINNABARI'NA *Planch.* CINNABAR-COLORED CUPHEA. (*Lythariæ.*) New Mexico.

A greenhouse plant; growing about a foot high; with deep blood-colored flowers; appearing all summer; cultivated in loam and leaf mould; increased by cuttings and seeds. *Flore des Serres*, 1849, pl. 527.

A new and beautiful species of the Cuphea, with very dark and brilliant colored flowers, and a habit somewhat like *C. platycéntra*. It was introduced from New Mexico, and is one of the finest of this family. Easily cultivated in the same manner as *C. platycéntra*. (*Flore des Serres*. Nov.)

150. PASSIFLO'RA MEDUSÆ'A *Chas. Lem.* MEDUSA FLOWERED PASSION FLOWER. (*Passiflo'réæ.*)

A greenhouse climber; growing ten feet high; with orange-colored flowers; appearing in summer; cultivated in light rich soil; increased by cuttings. *Flore des Serres*, 1849, pl. 528.

A pretty species of the Passiflora, with very small flowers, and quite distinct from the ordinary kinds; one of its greatest singularities is the mutability of the color of its floral crowns; they open with a beautiful tint of orange, and as the flowers become older, they change to a lilac or rose color. In habit it is rather slender, but it is a very profuse bloomer. (*Flore des Serres*. Nov.)

151. BEGO'NIA CINNABARI'NA *Hook.* CINNABAR-COLORED BEGONIA. (*Begoniaceæ.*) Bolivia.

A greenhouse plant ; growing two feet high ; with orange-red flowers ; appearing all summer ; cultivated in heath soil, leaf mould and loam ; increased by cuttings. *Flore des Serres*, 1849, pl. 530.

One of the most showy and beautiful of the pretty tribe of Begonias, having a fine palmate foliage of a shining green, and long trusses of bright orange-colored flowers of large size, which are highly ornamental throughout the summer. It belongs to the tuberous rooted section of the Begonias, and should be treated in the same manner as the other species of the same character. (*Flore des Serres.* Nov.)

152. AQUILE'GIA MACRA'NTHA *Hook & Arn.* GREAT FLOWERED AQUILEGIA. (*Ranunculaceæ.*) United States.

A hardy perennial ; growing three feet high ; with white flowers ; appearing in summer ; cultivated in good rich soil ; increased by division of the roots. *Flore des Serres*, 1849, pl. 531.

A very large and pretty species of the Aquilegia, described by Nuttall (in the *Journal Acad. Phil.*, Vol. VII. p. 8) as *A. leptoceras*. It is a native of the high mountainous regions of New Mexico, Texas and California, and was found by Douglas, James, Drummond and other botanists, but it was first introduced to the Kew gardens, by Mr. Burke, who sent home the seeds from which plants were raised. The flowers are very large, and of a blush white. It will be a fine addition to our hardy perennials. (*Flore des Serres.* Nov.)

153. AQUILE'GIA JUCU'NDA *Fisch & Lallemand.* AMIABLE AQUILEGIA. (*Ranunculaceæ.*) Siberia.

SYN. *A. glandulosa.* D. C.

A hardy perennial ; growing two feet high ; with dark blue flowers ; appearing in summer ; cultivated in good rich soil ; increased by division of the root. *Flore des Serres*, 1849, pl. 535.

A very showy species which flowered in the Botanic Garden at Cambridge, three or four years ago, where it was raised from seeds received from Dr. Fischer, of St. Petersburg. It has since been introduced from England under the name of *A. glandulosa*, and is now becoming more common

in collections. It is one of the grandest of the species, and should be in every collection of herbaceous plants. (*Flore des Serres*. Dec.)

154. *MICROSPE'RNA BARTONIOI'DES* Walp. *BARTONIA-LIKE*
MICROSPERMA. (*Loasàcæ.*) Mexico.

An annual plant; growing two feet high; with yellow flowers; appearing all summer: cultivated in good rich soil; increased by seeds. *Flore des Serres*, 1850, pl. 532.

A new and showy annual, with large golden yellow flowers, filled with numerous long stamens somewhat resembling the *Bartonia*. The leaves are large and deeply dentate, and the flowers solitary at the axils of the leaves. It will be an acceptable addition to our annual border flowers. (*Flore des Serres*. Dec.)

155. *ACHI'MENES LONGIFLO'RA* VAR. *A'LBA* Haage. *LONG FLOW-*
ERED WHITE ACHIMENES. (*Gesneriàcæ.*) Guatemala.

A greenhouse plant; growing a foot high; with white flowers; appearing all summer; cultivated in heath soil and leaf mould; increased by offsets. *Flore des Serres*, 1849, pl. 536.

A lovely variety of the beautiful *A. longiflora*, introduced into Belgium in 1848. Mr. Haage, who first received it, states that it was found by M. Warszewicz, in the environs of Guatemala, where he discovered among thousands of the *longiflora*, of various shades of lilac and purple, *one* single specimen with flowers as white as snow. This was of course immediately removed to the garden of M. Klee, the Prussian Consul. In the fall of 1848, Mr. Haage received the roots in fine order, and had it abundantly in bloom in 1849. It will be a decided acquisition, as we may now hope, by hybridization with the scarlet species, to produce many new seedlings having all the tints to be found in the several species. Its cultivation is the same as the *longiflora*. (*Flore des Serres*. Dec.)

156. *FU'CHSIA VENU'STA.* H. B. K. *BEAUTIFUL FUCHSIA.*
(Onagrariæ.) New Grenada.

A greenhouse plant; growing three feet high; with orange-colored flowers; appearing in summer; cultivated in light rich soil; increased by cuttings. *Flore des Serres*, 1849, pl. 358.

“New and striking in its colors, of an exquisite habit,” in-

roduced to Belgium in 1848, by Mr. Linden, who exhibited it at the Horticultural Society of Gand. It has much of the habit and character of *F. serratifolia*, but the color is an orange red. The flowers are long and large, and the corolla, instead of being closed round the stamens and stigma as in most of the fuchsias, is freely expanded like the sepals. If a free bloomer, it will prove a fine addition to this elegant tribe. (*Flore des Serres.* Dec.)

157. *GLADIO'LUS GANDAVE'NSIS* VAR. *CITRI'NUS* V. *Houtte.*
CITRON-FLOWERED VARIETY. (Garden hybrid.)

A new variety of the *G. gandavensis*, raised by Mr. Lemo-
nier of Lille, a celebrated cultivator of the Gladioli. In
habit, &c. it is like the parent, but the flowers are of a fine
citron color, and are exquisitely formed. It will be a decided
acquisition to our summer flowering gladioluses, of which the
gandavensis is one of the most brilliant. (*Flore des Serres.*
Dec.)

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

THE *GLYCINE SINENSIS*, (*WISTARIA*,) AND WHERE IT IS FOUND WILD.—
Before the last war with China, foreigners were confined to narrow limits
about Canton and Macao, where they had no means of knowing anything
of the more hardy plants of the north, which they sometimes met with in
gardens, and introduced to Europe. Now, however, we can prosecute our
botanical researches in a country which is nearly a thousand miles further
to the northeast, and at many other places which lie along that line of coast.
The island of Koo-lung-sù, for example, near Amoy, was taken by our
troops during the war, and occupied by them for some years, according to
treaty, until a portion of the ransom money was paid. It seemed to have
been a place of residence to many of the mandarins and principal merchants
in peaceful times, and boasted of its gardens and pretty fish ponds. When
I first saw these gardens, they were mostly in a ruinous condition, and ev-
erywhere exhibited the fatal effects of war. Many beautiful plants, how-
ever, still continued to grow and scramble about over the ruined walls. Cap-
tain Hall, of the Madras army, who was stationed there for some time, was
very fond of botany, and took great pleasure in pointing out to me all the
plants which he met with in his rambles. "I have good news for you,"
said he, one morning when I met him; "come with me and I shall show

you the most beautiful plant on the island, which I have just discovered. It is a creeper; it produces fine long racemes of lilac flowers before it puts forth its leaves, and it is deliciously fragrant." What could it be? was it new? would it produce perfect seeds? or could young plants be procured to send home? were questions which rapidly suggested themselves. It is only the enthusiastical botanical collector who can form an idea of the amount of excitement and pleasure there is when one fancies he is on the eve of finding a new and beautiful flower. Captain Hall led the way, and we soon reached the spot where the plant grew. There had been no exaggeration in his description; there it was, covering an old wall, and scrambling up the branches of the adjoining trees; it bore long racemes of pea-shaped flowers, and scented the surrounding air with its odors. Need I say it was the beautiful glycine. But it was not found in a wild state even at Amoy, and had evidently been brought from more northern latitudes.

When I reached Chusan, in latitude 30° north, I found a remarkable change in the appearance of the vegetation. Tropical forms had entirely disappeared, or were rarely met with. Although the summers were as warm, or even warmer than they were in the south, yet the winters were nearly as cold as those we have in England. On this ground, and all over the provinces of Chekiang and Kiangnan, the glycine seemed to be at home. It grew wild on every hill-side, scrambling about in the hedges by the foot-paths, and hanging over and dipping its leaves and flowers into the canals and mountain streams.

But by far the most beautiful effect is produced when it attaches itself to the stems and branches of other trees. This is not unfrequent in nature, and is often copied by the Chinese and introduced into their gardens. You can scarcely imagine anything more gorgeous or beautiful than a large plant of this kind in full bloom.—(*Fortune's Letters in Gard. Chron.* 1851, pp. 340, 341.)

ART. II. Domestic Notices.

IMMENSE HOVEY'S SEEDLING STRAWBERRIES.—At a late meeting of the Farmer's Club, of New York, Mr. Geo. S. Riggs, of Baltimore, who visited the farm of Mr. Pelham, Vice President of the Institute, in company with Judge Meigs and Gen. Chandler, stated that Mr. Cunningham, the gardener, showed them a basket of Hovey's Seedling that he had picked to present to a neighbor. Thirty-nine were laid on a flat surface, and covered a space of nine inches by eleven, that is, one to every $2\frac{1}{2}$ inches. I saw one weighed and found it weighed 2 ounces, and was eight and three eighths inches in circumference. Mr. Riggs remarked that he could say, without fear of contradiction, that this was the largest and heaviest Hovey's Seedling strawberry ever grown.—(*New Yorker*.) [We do not doubt it, nor do we doubt its being the largest strawberry of any kind ever grown. We are happy to record such an instance of superior cultivation, and we thank Mr. Pelham and his gardener, Mr. Cunningham, that they have done their part to sustain the character of our seedling.—ED.]

PINE APPLES WITHOUT BOTTOM HEAT.—Dear Sir: Will you please inform me, in your next magazine, whether pine-apples can be successfully cultivated without bottom-heat during the winter months. And whether they will admit of temperature below 50° Fahrenheit, during the night, in the winter.

I see it stated that they are much easier raised in beds than in pots. When raised in beds, how is bottom-heat applied?

Perhaps pine-apples are not cultivated at all about Boston, and you may have no practical experience or reliable information on the subject of my inquiries. Your ob't servant, M. C. JOHNSON.

[Pine-apples are not cultivated around Boston, but we believe we are sufficiently acquainted with their growth from what we have seen in England, and read, to say that they cannot be cultivated with much success without bottom heat during winter. The plants, if kept rather dry, will undoubtedly winter well in a night temperature of 50°, but this could only be done before they show their fruit, as it would be too great a check afterwards.

The best pine apples are now raised in pits or beds, and bottom heat is applied in various ways. When first rooted they are usually grown in hot beds made of tan or manure, and afterwards removed into what are called succession houses, in which bottom heat is supplied either by tan, or by hot-water pipes running beneath the soil in which the plants are growing. The minimum temperature for plants after they show fruit, is 70° in winter, and 85° in summer. The Queen pine requires fifteen to twenty months to fruit, and the Providence and other large sorts, two to three years.

If the suckers were planted in August, and the beds kept lined with manure during winter, so as to keep the bottom heat at 55 to 60°, we think they could be fruited the following October, in the climate of Kentucky, with but a small amount of bottom heat during summer.—Ed.]

EXHIBITION OF THE GENESEE VALLEY HORTICULTURAL SOCIETY.—The June show of this society was held at Rochester, on the 19th of last month. The display was beautiful, but owing to the lateness of the season, the show of roses was not so complete as usual. The first premiums for roses, pæonies, flowering shrubs, and herbaceous plants, in the nurserymen's class, were awarded to Ellwanger & Barry. For the best collection of greenhouse plants, to C. J. Ryan & Co. For 27 varieties of seedling pæonies, some of which promise to be fine, to John Donellan.

From the report, we should judge the exhibition of strawberries was not so large as usual. R. G. Pardee exhibited Burr's New Pine, measuring four inches in circumference, and these were awarded the first prize of \$3. J. J. Hathaway exhibited the best Hovey's Seedling, which gained the second prize of \$2. Several other cultivators exhibited fine specimens of Hovey's Seedling. From Ellwanger & Barry, No. 1 Seedling, first quality, in flavor nearly equal to Burr's Pine; very promising specimens Monroe Seedling; also, other seedlings and varieties. From Bissell & Hooker, several varieties, among them the Cushing—which is stated to be "large and rather poor." M. G. Warner had 15 varieties, the largest and best collection.—(*Rural New Yorker.*)

TWENTY-FOURTH ANNUAL FAIR OF THE AMERICAN INSTITUTE FOR 1851.—The next fair of this flourishing institute will be held in Castle Garden, New York, commencing October 1, and continue open nearly the entire month.

It is the intention of the managers to make it an exposition of American industry, and they invite "farmers, gardeners, manufacturers, inventors, artisans, &c., of the United States," to bring the best productions of their skill and labor for competition for the premiums, which, as heretofore, will be liberally bestowed by the Institute.

The board awarded at the last fair, 92 gold medals, 326 silver, 85 silver cups, 510 diplomas, 136 vols. agricultural works; 132 dollars and 27 certificates to apprentices and minors; 30 dollars and four bronze medals, and 329 dollars in cash premiums.—Ed.

ART. III. *Massachusetts Horticultural Society.*

Saturday, May 31. Exhibited—**FLOWERS:** From the president, *Spiræa prunifolia pleno*, pæonies, Lilac saugeana, &c. From Hovey & Co. thirty elegant varieties of hardy azaleas, eight varieties of tree pæonies, *Spiræa lancifolia*, and *trilobata*, *Tamarax africana* (quite hardy), Lilac saugeana, &c. From M. P. Wilder, several varieties of beautiful tree pæonies and fine calceolarias; some of the best pæonies were *Le Soliel*, *Reine de Belgique*, *Delachii*, *Keiser Leopold*, and *Violacea purpurea*. From J. Breck & Co., *Aquilegia glandulosa*, *Trollius europæa*, and other flowers. From J. S. Cabot, several var. of fine tree pæonies. Cut flowers in great variety from Winship & Co., W. E. Carter, P. Barnes, A. Bowditch, E. M. Richards, J. Nugent, W Kenrick, Dr. E. G. Kelley, and others.

PREMIUMS AND GRATUITIES AWARDED.

TREE PÆONIES.—For the best six varieties, to M. P. Wilder, \$5.

For the second best, to M. P. Wilder, \$4.

For the best display, to M. P. Wilder, \$3.

HARDY AZALEAS.—For the best display, to Hovey & Co., \$5.

For the second best, to Winship & Co., \$3.

HAWTHORNS.—For the best display, to Winship & Co., \$3.

For the second best, to W. E. Carter, \$2.

GRATUITIES.—To J. Breck & Co., Winship & Co., P. Barnes, and A. Bowditch, each \$2.

To J. A. Kenrick, Miss Russell and Jas. Nugent, each \$1.

FRUITS.—From J. F. Allen, Elton cherries, superior; Black fig of St. Michaels, Hunt's Tawney nectarine, and the following grapes:—Chasselas Musque, Wilmot's New Black Hamburg, (well colored,) Tottenham Park Muscat, Black Portugal, and Macready's Early White.

From W. C. Strong, Black Frontignan, (fine,) Muscat of Alexandria, Black Hamburg, (fine,) and White Chasselas grapes; also strawberries and peaches.

From Hovey & Co., White Frontignan, (very fine); Wilmot's Black Hamburg, No. 16, (fine;) Red Chasselas, (fine,) and Golden Chasselas. From B. Harrington, Baldwin and other apples.

VEGETABLES.—FROM M. P. Wilder, Victoria and Myatt's Linnæus rhu-barb; the latter was of tender quality, juicy and free from strings, yet not so prolific as the Victoria.

June 7. Exhibited.—FLOWERS: From J. Breck & Co., *Iris susianna*, pæonies, aquilegia, &c. From Winship & Co., azaleas and other flowers, pæonies, &c. From P. Barnes, *Iris susianna* and other flowers in variety.

From Hovey & Co., six varieties of rhododendrons, (hardy); thirty varieties of hardy azaleas, very beautiful, and fancy pelargonium Annais. Cut flowers from J. Nugent, A. Bowditch, J. A. Kenrick, and others.

GRATUITIES AWARDED.

To Winship & Co., J. Breck & Co., A. Bowditch, P. Barnes, and Jas. Nugent, each \$1.

FRUITS.—FROM Hovey & Co., Golden Chasselas, White Frontignan, (fine,) Wilmot's Black Hamburg, No. 16, (well colored and very fine,) and Red Chasselas grapes. From W. C. Strong, Black Hamburg, (very fine,) Muscat of Alexandria, and Black Frontignan grapes; also four varieties of peaches and strawberries. From Levi Jennings, Jr., Weston, three boxes fine Early Virginia strawberries. From A. Bowditch, grapes. From A. D. Williams, Macarty apples, in fine order and very handsome. From J. F. Allen, four varieties of figs, Hunt's Early Tawney nectarine, (fine,) and Elton cherries, (very fine.)

June 14.—An adjourned meeting of the Society was held to-day,—the President in the chair.

A communication was received from Mons. Tougard, of Rouen, France, and the thanks of the Society voted for the same.

The following persons were elected members: Jas. Marsh, Dedham; M. Parker, Boston; John Blaisdell and W. D. Swan. Adjourned three weeks, to July 5.

Exhibited.—FLOWERS: From the President, *Papáver bracteatum*, pæonies in variety, and other flowers. From John Richardson, a very fine seedling herbaceous pæony. From M. P. Wilder, 16 var. of herbaceous pæonies, among which were *Prolifera tricolor*, *Reine de Francais*, *Duchesse de Nemours*, *edulis superba*, *grandiflora carnea plena*, *sulphurea*, &c.; also *Princess Adelaide* moss roses. From Winship & Co., azaleas in variety, fringe tree, Eagle's Claw maple, bouquets, &c.

From Hovey & Co., fifteen varieties of herbaceous pæonies, among them *Grandiflora carnea plena*, *Hericiartiana edulis superba*, *rosea plenissima*, *Reine des Francais*, *sulphurea*, *Pottsii*, &c., &c.; also eight varieties of azaleas, ten varieties of rhododendrons, twenty varieties of Beck's pelargoniums, *Oxalis elegans* (new) and other flowers. From J. Breck & Co., *Dictamnus rubra*, pæonies, and other flowers. Cut flowers in variety from J. Nugent, P. Barnes, J. A. Kenrick, Wm. Kenrick, E. Burns, L. Spaulding, A. Bowditch, J. Mann, Jr., W. E. Carter, J. Hovey and others.

GRATUITIES AWARDED.

To J. Breck, Hovey & Co., P. Barnes, A. Bowditch, Winship & Co., M. P. Wilder, J. Mann, Jr., J. Nugent, J. Hovey, and Miss Russell, for cut flowers, each \$1.

FRUITS.—From Hovey & Co., Red Chasselas, Wilmot's New Black Hamburg, No. 16, (fine,) White Frontignan, Gros Bleu, (*new* and fine,) and Wilmot's Hamburg grapes. From J. F. Allen, Cannon Hall Muscat, (fine but not quite ripe,) White Bual, Black Prolific, Wilmot's Hamburg, and four other varieties grapes; also, Grosse Mignonne peaches and figs. From W. C. Strong, four varieties of peaches, (handsomely grown and well colored,) and grapes. From Mrs. Jesse Bird, oranges and lemons. From E. Cleaves, apples for a name. From Mrs. Haven, Newtown Pippin apples. From J. Mann, Jr., Boston Pine and Hovey's Seedling strawberries. From W. R. Austin, fine Boston Pine strawberries. From L. Jennings, Jr., Early Virginia and Boston Pine strawberries.

VEGETABLES.—From A. W. Stetson, 12 stalks of Victoria rhubarb, weighing 20½ lbs. Mr. Stetson has produced from two roots, set out two years ago, 96 lbs. of stalks. From J. Mann, Jr., one peck Early Kent peas, the first exhibited. From Jos. Crosby, five superior heads curled lettuce.

June 21. *Exhibited*—FLOWERS: From the President of the Society, pæonies in var., roses in var., spiræas, iris, &c.

From J. S. Cabot, pæonies, 21 varieties, including claptoniensis, Reevesii, grandiflora carnea plena, bicolor plena, delicatissima, Victoria, Duchesse de Nemours, Victoria modeste, elegantissima, papaveriflora, sulphurea.

From M. P. Wilder, 200 blooms pæonies, among which were the following: Festiva, sulphurea, tricolor grandiflora, speciosa striata, edulis superba, edulis alba, Lady Dartmouth, Reine de Francais, prolifera tricolor, Reevesii, Pottsii, Whitejii, Buyckii, crysanthemiflora, delicatissima, formosa, carnea grandiflora, nivea plena, lilacina superba, &c., &c. A very large collection of perpetual, moss, and other roses, embracing many choice varieties.

From Hovey & Co., upwards of 100 pæony blooms, of 20 varieties, among which were Reine de Francais, festiva, Humei, fragrans, edulis superba, rosea plenissima, grandiflora carnea plena, Hericartiana, Pottsii, speciosa striata, &c., &c.; also fifty varieties of roses, including many new and splendid kinds, viz.: Perle des Panachees, Emerance, Rose Amiable, De la Grifferraie, Walter Scott, &c.; Perpetuals and moss roses; 10 varieties of azaleas, Kálmia latifolia, rhododendrons, and a new seedling verberna, beautifully striped. From Joseph Breck, roses, in great var., pæonies in var., Nemophyla in var., clematis, spiræas, campanulas, Philadelphus pleno, Martagon lily, delphiniums. From William E. Carter, phlox Van Houtteii, Delphinium sinensis, spiræas in var., Blitum capitatum, pæonies Campanula grandis. From Jonathan Mann, Jr., Sweet Williams in var., delphiniums, digitalis, spiræas, roses in var., marigolds, Pyrethrum itali-

cum, *Gilia capitata*, *Collinsia bicolor*. Cut flowers were also exhibited by L. Davenport, A. Bowditch, P. Barnes, J. Nugent, E. M. Richards, I. Duncklee, J. A. Kenrick, W. Kenrick, and others.

AWARD OF PREMIUMS AND GRATUITIES.

ROSES.—Class I.—For the best thirty distinct varieties, to Hovey & Co., the premium of \$8.

For the second best, to M. P. Wilder, \$6.

For the third best, to J. Breck & Co., \$4.

For the best display, to M. P. Wilder, \$3.

Class II.—For the best twelve varieties, to M. P. Wilder, \$5.

For the second best, to ——— \$3.

For the third best, to ——— \$2.

Class III.—*Hardy Perpetuals*. For the best twelve varieties, to M. P. Wilder, \$5.

For the second best, to M. P. Wilder, \$4.

For the best display, to J. Breck, \$3.

PÆONIES.—For the best ten varieties, to M. P. Wilder, \$5.

For the second best, to Hovey & Co., \$4.

For the best display, to M. P. Wilder, \$3.

GRATUITIES.—To P. Barnes, Winship & Co., and Breck & Co., for cut flowers, \$2 each.

To A. Bowditch, for the same, \$3.

To J. Nugent, J. Mann, Jr., W. Carter, J. Kenrick, L. Davenport, Miss Russell, J. Duncklee, and E. M. Richards, \$1 each.

FRUITS.—From O. Johnson, peaches, Coolidge's Favorite, fine. From F. Blake, strawberries, Boston Pine, very fine. From J. F. Allen, nectarines, Hunt's Early Tawney; figs, Black and St. Michael's; grapes, Black Hamburg, Wilmot's new, Wilmot's No. 16, Cannon Hall Muscat, very fine, Xeres; peaches, Grosse Mignonne and New Jersey do. From J. B. Burgess, New Bedford, seedling strawberries. From H. Hewes, strawberries, fine. From L. Capen, seedling strawberries, first bearing. From A. D. Williams, cherries. From M. H. Simpson, by D. H. Burns, strawberries, Hovey's Seedling, very fine; Boston Pine, fine. From J. Richardson, strawberries, Boston Pine, fine.

From Hovey & Co., grapes, Wilmot's No. 16, White Frontignan, Red Chasselas, Gros Bleu, very fine; Wilmot's Black Hamburg, well colored and very fine. From T. Rice, Jr., strawberries, Hovey's Seedling, very fine. From M. P. Wilder, cherries, Belle d'Orleans. From W. C. Strong, peaches, unnamed, three varieties; grapes, White Nice, Black Hamburg, fine; Muscat of Alexandria, very fine; White Frontignan, very fine; Black Frontignan. From H. Vandine, cherries, May Duke. From I. Fay, strawberries, Fay's Seedling, Jenny Lind. From L. Jennings, strawberries, Hovey's Seedling, very fine, Boston Pine, very fine, and Early Virginia. From J. P. Cushing, Esq., eight varieties of grapes, unnamed, well colored and fine specimens, and 24 varieties of strawberries, many of the specimens of superior quality.

Fruits tested.—From M. P. Wilder, cherries, Belle of Orleans, a very fine early cherry, good size, light red color.

From Hovey & Co., grapes, Gros Bleu, a new variety, similar to the Hamburg, of fine flavor, very solid flesh, colors very freely.

From I. Fay, strawberries, a seedling named Jenny Lind. This strawberry is, in the opinion of the Committee, of good promise, but they defer the expression of any decided opinion until they have had further opportunity of testing it. It is a very solid berry, of fine flavor and good size.

VEGETABLES.—From W. F. Walch, gardener to Jonathan French, three varieties frame cucumbers, Cuthill's Black Spine, Snow's White Spine and London Prize-Fighter, from 12 to 20 inches long, fine. From Jonathan Mann, Jr., House of Industry, Early Kent peas, well grown and fine. From A. D. Williams & Son, early peas and onions, fine. David Reed presented two ears of corn raised in Baltimore, by Seth Reed, 24 and 16 rowed, that attracted much attention for its size and beauty.

June 28. Exhibited.—*FLOWERS:* From the President of the Society, roses in variety, pæonies, campanulas, &c. From M. P. Wilder, a large collection of roses, comprising mosses, hybrid perpetuals, &c; also pæonies and other flowers. From P. Barnes, *Phlox Van Houtteii*, *Deutzia scabra*, *Spiræa japonica*, and other flowers. From J. Breck & Co., roses in great variety, including mosses, and Prairie Baltimore Belle, Queen, &c., and a great variety of herbaceous plants and annuals. From Winship & Co., roses in great variety, *Clématis viorna*, *verticillata* and *crispa*, *Deutzia globosa*, (?) *Amórpha fructicósa*, and a variety of shrubs and herbaceous plants.

From Hovey & Co., 200 varieties of roses, including mosses, perpetuals, &c.; and the following prairies: Mrs. Hovey, a superb white, Baltimore Belle, Queen, superba, perpetual pink, Mellidgeville, Jane, pallida, Mad. Caradora Allen, and Pride of Washington; *Técoma jasminoides*, *Calystegia pubéscens*, Anemonies, *Pæónia festiva*, Delphiniums, eight varieties of phloxes, &c., &c. Cut flowers and bouquets from Jas. Nugent, Miss A. Sargent, A. Bowditch, J. C. Pratt, J. Mann, Jr., L. Davenport, J. A. Kenrick, Mrs. George W. Allen, B. V. French, Miss Russell, B. Loring and others.

GRATUITIES AWARDED.

To J. Breck, P. Barnes, J. Mann, Jr., J. Nugent, Hovey & Co., Winship & Co., M. P. Wilder, A. Bowditch, B. Loring, Miss Sargent, J. C. Pratt, Miss Kenrick, Miss Russell, Mrs. G. W. Allen, for bouquets and cut flowers, \$1 each.

FRUITS.—From Anson Dexter, cherries, unnamed. From M. H. Simpson, by D. H. Burns, strawberries, Richardson's Late. From Jona. Mann, Jr., strawberries, unnamed. From the President of the Society, strawberries, seedling, fine. From A. Bowditch, grapes, Black Hamburg and White Frontignan. From Jas. Nugent, cherries, unnamed. From Dr. Nathan Durfee, by J. H. Black, grapes, Zinfindal, Black St. Peters, Black Hamburg, and White Frontignan, all very superior, bunches and berries extra

size; strawberries, a seedling from Alice Maud. From Isaac Fay, strawberries, Jenny Lind, very fine. From J. F. Allen, grapes, Cannon Hall Muscat, Purple Muscat, Violet Muscat, all very fine; Black Portugal, Muscat of Lunel, Tottenham Park Muscat, White Frontignan, fine; Wilmot's No. 16, White Bual, Garden Tokay, White Hamburg, Chasselas de Bar sur Aube, White Hamburg, fine; Red Lombardy, Zinfindal, Victoria, Portuguese Muscat, very fine; Chasselas Musque, Austrian Muscat, Grizzly Frontignan, White Frontignan, Black Hamburg, fine.

From J. Breck, grapes, Black Hamburg, fine, White Frontignan, fine, White Chasselas, Rose Chasselas. From M. P. Wilder, cherries, Waterloo, fine, Amber Heart, Seedlings Nos. 1 and 2. From W. C. Strong, grapes, Black Hamburg, very fine, White Frontignan, very fine, White Chasselas, fine. From Francis Blake, strawberries, Boston Pine; cherries. From Thomas Rice, strawberries, Hovey's Seedling; cherries, Honey Heart. From Otis Johnson, cherries, Flesh colored Bigarreau, Honey Heart; strawberries, Hovey's Seedling, superior; peaches, Coolidge's Favorite, superior. From J. P. Cushing, Esq., strawberries, of 32 varieties, as named below. From S. Downer, Jr., strawberries, Boston Pine, Jenney's Seedling, very fine, Hovey's Seedling, very fine. From Hovey & Co., grapes, Gros Bleu, Victoria, very fine, White Frontignan, fine, Wilmot's Black Hamburg, fine, Black Hamburg; cherries, Early Purple Guigne, and Arch Duke. From A. D. Williams & Son, cherries, May Duke.

Fruits tested.—Strawberries from J. P. Cushing, Esq., Ohio Mammoth, good, but not of first quality; New Pine, high flavored and very fine; Scarlet Melting, of medium quality; Burr's Seedling, do.; Columbus, do.; Scitoto, very acid; Late Prolific, acid; Burr's New Pine, high flavored, very fine, of first rate excellence; Crimson Cone, acid, lacks flavor; Charlotte, medium quality, not much flavor; Black Prince, below a medium quality; Rival Hudson, high flavored, but very acid, of medium quality; Unique Scarlet, of medium quality; Montevideo Pine, fair; Cornucopia, good, rather acid, well flavored; Primate, indifferent; Bishop's Seedling, not ripe; Boston Pine, good; Richardson's Late, very good; Willey's Seedling, acid, indifferent; Fay's Seedling, indifferent; Early Virginia, good; Aberdeen Beehive, very acid and indifferent; 40 C. from Dr. Brinckle, medium; 23 B. from Dr. Brinckle, good; 24 H. from Dr. Brinckle, very indifferent.

From Isaac Fay, strawberries, a seedling, named Jenny Lind, of good size and quality, promises well, first year of bearing.

From the President of the Society, strawberries, Walker's Seedling; this strawberry has now been fruited three years; it is a dark colored berry, of good size, a very abundant bearer, of high flavor, very fine quality, and will be, it is believed, an acquisition. It is a staminate, worthy, as the Committee think, of an extended cultivation.

From Mr. Blake, cherries, unnamed, resembles Black Tartarian, not known to the Committee.

From M. P. Wilder, cherries, Waterloo and Amber Heart, not ripe; Seedling Nos. 1 and 2, dark colored cherries, of fair quality.

From Hovey & Co., cherries, Early Purple Guigne, of first rate excellence ; Arch Duke, not ripe.

From J. F. Allen, grapes, Grizzly and White Frontignan, very fine ; Garden Tokay, fine ; Black Hamburg, Purple Muscat, indifferent.

VEGETABLES.—From A. D. Williams & Son, early peas and onions. From J. B. Moore, fine Early White flat turnips. From J. Mann, Jr., fine Early Turnip Blood beets. From Jos. Crosby, one brace of cucumbers, open air culture—the first of the season.

HORTICULTURAL OPERATIONS

FOR JULY.

FRUIT DEPARTMENT.

THE month of July brings with it additional work in this department. The pruning must be kept up the entire month, and besides this, which in a collection of any size will require some time to keep the trees in good order, the budding, where there is any to be done, must be attended to the last of the month. Insects must be continually looked after, and destroyed, both in-doors and out : the labors of the month may be deemed as those of *attention* rather than hard labor.

GRAPE VINES in the graperly will now be swelling their fruit rapidly, and will require to have a few more of their berries thinned out, if they are getting crowded. The bunches should also be properly shouldered, if not already done : keep up a good temperature by day, but not too high at night ; let the floors be well damped, but do not syringe until the fruit is cut : keep the laterals well pruned in. Vines in cold houses will require to have the thinning completed this month ; give abundance of air in good weather, but keep rather close when cool and rainy. If mildew should appear, it must be checked by the application of sulphur water. Vines in pots, intended for fruiting next year, will require to be kept in vigorous condition ; as soon as the pots are filled with roots, give them a shift into the next size ; water with liquid manure. Vines in the open air will now require considerable attention ; all the wood intended for bearing next year should be laid in, and the remaining shoots headed off one joint beyond the fruit : this will keep the vines compact and free of useless wood. Whatever the method of pruning, it must be borne in mind that the grape only bears on the *young wood*, and therefore there must always be a new growth to take the place of that of the previous year.

PEACH TREES in pots should be watered liberally as the fruit swells off. Young trees planted this year, should be kept in good shape by occasionally pinching off the terminal shoots.

FIG TREES in pots should now be liberally watered.

STRAWBERRY beds should now have attention ; as soon as the fruit is all

gathered, the beds must be all carefully weeded out, and if they are grown on the renewal system a portion of the vines should be dug under, and the surface manured so as to allow space for the young runners to take root. Where it is intended to grow them in rows or hills the runners should now be kept cut off, and the ground free from weeds.

PLUM TREES may be budded the last of this month.

SUMMER PRUNING should now be attended to, and the trees will require looking over carefully every few days throughout the month. Pears and apples should have frequent stopping, so as to check the young growth, and throw the sap into the spurs on the old wood so that they may swell up and form fruit buds.

FLOWER DEPARTMENT.

July is the time to begin to prepare for filling the greenhouse and conservatory with winter blooming plants, of such kinds as will keep up a succession of bloom from fall till spring. In the present number we have given a most excellent article on this subject, which, if attentively read, will render any remarks here almost unnecessary. It should, however, always be remembered that to have plants bloom well during winter, they *must be* well established in the pots. Young newly propagated stock will scarcely pay for the room it occupies. Begin now, therefore, to select, pot and get ready all such things as will be wanted next winter, and proceed with them as advised in the article before named.

DAHLIAS should now be carefully staked, and tied up; pruning such as require it. Water freely if the weather proves dry, and mulch with old manure, leaves or short grass.

TULIPS and HYACINTHS should now be taken up.

CARNATIONS and PICOTEEs now coming into flower should be neatly tied up to stakes, and if fine large flowers are wanted the small buds should be thinned out. Water occasionally with liquid manure, if the plants are not strong. The last of the month is the season to layer the plants just as they are going out of bloom.

RANUNCULUSES should be taken up this month.

CAMELLIAS should now be all removed from the house, and set in a half shady place as before directed. This month is the best time to pot all that require it, as the plants get well established before winter.

AZALEAS should now be removed from the house to a half shady place, and be plunged in tan. If any require repotting now is the time to do it.

VERBENAS for early winter blooming should be raised from cuttings or layers the last of the month.

PELARGONIUMS should be headed down the last of the month; cut the plants in short, and set them in a half shady place, keeping them rather dry till they are well broken, when they should be immediately repotted; pot the cuttings if a stock is wanted.

FUCHSIAS should now have a shift into larger pots, if fine specimens are wanted.

ROSES of all kinds, both hardy and tender, should be layered this month. Such kinds as it is intended to bud should also now be done.

GLOXINIAS and ACHIMENES should now be potted for the last time.

PANSIES, for spring blooming, may be sown the last of the month.

MIGNONETTE for winter blooming should now be planted.

CHINESE PRIMROSE seed should now be planted.

OXALIS HIRSUTA and BOWIEI may be potted the last of the month.

CHRYSANTHEMUMS potted in May or June should now have their tops pinched off so as to make them stout bushy plants. Water occasionally with liquid manure.

PERENNIAL and BIENNIAL flower seeds of all kinds should now be planted.

GREENHOUSE PLANTS of all kinds will need some attention now : many will need repotting and pruning, tied up, and neatly arranged in some half shady place where they must be properly watered. Many of this description are abutilons, myrtles, Pittorporums, Eupatoriums, acacias, &c. Others will require to be potted and plunged in a warm sunny border where they will make new wood, especially Euphorbias, Ponisetia, Begonias, Gardenias, scarlet geraniums, oranges, Veronicas, salvias, &c. This is the best season for repotting all hard wooded winter and spring flowering plants.

FLOWER GARDEN AND SHRUBBERY.

Constant attention will now be required to keep the pleasure ground, borders and flower garden in fine order, as they always should be. Hoe and rake as often as the surface of the ground becomes hard, whether there are weeds or not ; freshly stirred soil benefits the plants, and keeps the earth moist.

Nearly all kinds of plants, with the exception of verbenas and such low growing flowers, require tying up to stakes ; phloxes, pinks, carnations, lilies, gladioluses, &c., all look neater and flower better to be tied up to a small stake ; indeed, nothing to our eye looks worse than to see the pinks, phloxes, spiræas, and many of the tall annuals, all sprawling upon the ground, their shoots lying upon each other, and their flowers bespattered with dirt from every heavy shower.

Keep all grass edgings neatly cut at least twice during the month. Clip box edgings, and weed and keep clean thrift, sedum or other sorts of edgings. Hoe, rake and roll the walks, and put in order if washed away by heavy rains. Bulbs taken up may now have their places occupied with annuals, or herbaceous or other bedding plants.

Perpetual roses, just now going out of flower, should be pruned in short, and the plants top dressed with guano or old manure, and neatly dug around the roots ; this will invigorate them and cause them to make a rapid growth. Verbenas, petunias, Lantanas, and similar growing plants should be pegged down so as to fill all the ground and present one mass of bloom. Prairie roses should be encouraged in the growth of their new wood, as this gives the best flowers next year. Where the shoots are not wanted to increase the stock, many of the old ones may be cut away at once to make space for the new growth.

THE MAGAZINE
OF
HORTICULTURE.

AUGUST, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Ornamental Trees adapted for Parks, Lawns and
Pleasure Grounds.* By the EDITOR.

(Concluded from p. 293.)

43. THE TREE OF HEAVEN, (*Ailantus glandulosa*).—The Ailantus is very extensively planted in and around the cities of New York, Philadelphia and Washington. In Philadelphia, it is a prominent tree in the public squares; and in New York, long avenues are lined wholly with this tree. It seems a tree just suited to the character of our people, who, impatient of delay, must have a kind which will grow up at once; and the ailantus, of all forest trees, is the most rapid in its growth while young. A few years since, when nearly all Long Island was laid out in house lots, this tree was in great demand, and sold at enormous prices for a forest tree. Latterly, however, it has not been so much in repute, probably from the fact that the planting of avenues and house lots by speculators in lands has fallen off.

The characteristic beauties of the ailantus are the large size, and the luxuriance of its pinnate foliage,—a fine symmetrical head without being clumpy,—a smooth and clean bark, and the agreeable contrast it forms with the round leaved trees; these added to its rapid growth, attaining the height of twenty to thirty feet in five or six years, have rendered it a favorite tree.

The ailantus is less hardy in the latitude of Boston than

around New York, and in low or wet situations it is often killed while young, and trees of some age often lose some of their branches. Care should therefore be taken that the trees are set in a rather light soil, on a dry substratum, where they will rarely suffer, as their growth is slower, and the wood has time to ripen before the winter sets in. It is rather apt to sucker, especially when raised from suckers, which is often practised. But if grown from seed, as they always should be, they rarely throw up any underground shoots.

In extensive plantations or belts of trees, a few of the ailantus grouped with the others have a fine effect, their large foliage being admirably adapted for catching large masses of light.

44. THE VIRGILIA OR YELLOW-WOOD, (*Virgilia lutea*.) The Virgilia is one of our most beautiful native trees, and it is somewhat remarkable that so few specimens of it are seen in cultivation, or that it should have so long remained comparatively unknown. Few trees possess more beauty—certainly none of its class (the papilionaceous, or pea-blossomed kind), of which several are well known trees, can compare with it.

The virgilia is a native of Tennessee, where it was discovered by Michaux the younger, and it was first introduced to England in 1812. It grows to good size, attaining the height of thirty or forty feet, and forms a dense, tufted and luxuriant head. Each leaf is from one to one and a half feet long, and composed of from seven to ten leaflets.

The foliage appears late in the spring, and is succeeded in June by a profusion of its elegant pea-shaped flowers, of a pure white, which appear in terminal racemes, six or eight inches long, something in the way of the locust, but more gracefully arranged. The flowers are succeeded by small pods or legumes, which contain the seeds, and ripen in August.

The virgilia is certainly one of the finest trees for a lawn, especially near the house, where its light and airy foliage, its broad and graceful head, its clusters of white flowers, the yellowish hue of its autumn foliage, and the smooth, olive-gray bark of its winter spray, will at all times render it one of the most attractive objects.

One of the finest specimens in the neighborhood of Boston, is growing in the nursery grounds of Messrs. Winship & Co., of Brighton, flowering abundantly every season.

45. THE BLACK WALNUT, (*Juglans nigra*.) The black walnut is a fine ornamental tree; and may be classed with the oaks and elms for the massiveness of its majestic head, and the spread of its branches. Its usual height, when fully grown in good soil, is seventy or eighty feet, and when standing alone, so as to allow room on all sides, it forms a grand object. Its branches extend horizontally, and oftentimes droop with their masses of foliage upon the ground. It is an admirable tree for lawns of some extent, where it will not be crowded by other trees.

The black walnut is of tolerably rapid growth, and soon attains a fair size; it has been often objected to as of slow growth; but this we apprehend has been on account of the specimens which have been planted having been fresh from their native locality. If raised from seeds in nurseries, or grown from very young trees, they make an abundance of roots, and when transplanted advance as rapidly as most other forest trees.

46. THE THREE-THORNED ACACIA, (*Gleditschia triacanthos*.) The three-thorned Acacia, or Honey Locust, as it is often called, though possessing no very great combination of qualities as an ornamental tree, is still sufficiently distinct and beautiful to merit a place in plantations of any extent. Its delicate pinnate foliage is extremely light, airy and graceful, and as it is of a very light shining green, it presents, both in its form as well as color, a marked contrast with the heavy masses of foliage and more sombre tints of other trees. The feathery leaflets, when agitated by a light breeze, glisten in the bright sunshine and light up with a brilliancy unusual among trees.

The acacia is of moderately rapid growth, attaining the height of twenty to twenty-five feet in eight or ten years. It rises with a straight, though somewhat twisted stem, and its branches extend horizontally, forming a handsome head. The bark is of a grayish brown, and is armed with strong

prickles which stand out from the old as well as young wood, often in clusters, giving to the tree a somewhat formidable aspect. Where it is desirable to add lightness to a group of trees, the three-thorned acacia is one of the best to produce this effect. It is preferable to the common locust, as it does not *sucker* like that tree, nor is it so much attacked by the borer.

47. THE CHESTNUT, (*Castanea vesca* var. *americana*.) The chestnut is second only in rank to the oak. Like that tree it throws up a massive trunk, clothed with heavy verdure, and both in the amplitude of its head and general arrangement of the branches and spray, it forms a magnificent tree. The foliage is large, deep green, entire, and glossy, and in young trees, is nearly a foot long. The flowers are yellow, conspicuous and showy, and are succeeded by the nuts, which are enclosed in a kind of outer calyx which is covered with sharp prickles.

The chestnut, when growing in its favorite locality, attains the height of seventy or eighty feet, with a broad and handsome head; its rate of growth is two to three feet a year. It lives to a very great age; one tree, the Tortmouth Chestnut, mentioned by Loudon, (*Art. Brit.*) being in all probably more than *eight hundred* years old, having been growing before the Conquest in 1066.

As an ornamental tree, adapted to all situations, too much cannot be said. We have already noticed two superb specimens which we saw in the grounds of Mr. Manice, at Hempsted, L. I., (XV, p. 532,) and whether for the lawn, or for a picturesque arrangement of trees, the chestnut must occupy a prominent place. What we have said of the oak will in some degree attach to the chestnut, and we need not enlarge upon the merits of a tree so eminently ornamental.

48. THE SASSAFRAS TREE, (*Laurus sassafras*.) This is a fine native tree, but little known and sparingly planted. It is a native species, growing upon the banks of the Hudson to the height of forty or fifty feet. The foliage is deep green, glossy, oval or three-lobed, and forms an agreeable contrast with other trees. The flowers are yellow,

and appear in clusters moderately early in the season, and are succeeded by oval bright blue berries.

The growth of the sassafras is moderate, attaining the height of twenty feet in eight or ten years. Its branches are irregularly disposed, and the head has a picturesque outline. Viewing it in all its characteristics, it is a tree which should be introduced into all collections of trees.

49. THE SALISBURIA OR GINKGO TREE, (*Salisbùria adiantifolia*.) The Salisburia is a rare tree in American collections, and but few specimens of any size exist in the country. The largest stands in the garden of the late Mr. Hamilton, at Woodlands, near Philadelphia, and the next in size is that now growing on Boston Common, where it was removed several years since from the garden of the late Gardner Greene. Within a few years it has recovered from its removal, and as it is now growing rapidly it will soon exhibit the real character and beauty of this fine tree.

In its native country (China or Japan) it attains to a large size, and according to Loudon, "resembles in form the walnut, but is more conical in its growth." It rises with an erect and straight trunk with ascending branches, and makes a "regular conical and spiry topped head." The leaves resemble those of one of our native fern (*Adiantum vulgare*), from whence its specific name. They are thick, fleshy, and smooth on both sides, and the veins are all parallel with each other, and run from the base to the top in the same manner as in monocotyledonous plants. They are of a somewhat triangular form, wedge-shaped at the base, abrupt and notched at the opposite end, thickest at the margin, and are disposed alternately along the branches. It is the singular and peculiarly formed leaf, added to the stately habit of the Salisburia which renders it so strikingly ornamental. Few persons, even those not familiar with the forms and characteristics of trees, would fail to notice it wherever growing.

Too rare and scarce to be introduced abundantly at present, what specimens are planted should be near the house, either disposed singly on the lawn or placed on the margin of ornamental plantations, where its beautiful spiral form, and

its singular foliage, will add to the picturesque character of the grounds. It does not grow very rapidly, and a tree ten years planted in good soil will attain a height of fifteen feet or more.

50. THE WEEPING WILLOW, (*Salix babylonica*.) The weeping willow is so universally known, admired and planted, that we need scarcely give any description of it; and our remarks will therefore rather be confined to its disposition in ornamental landscape, where it is too often introduced inappropriately, and without adding to the expression or beauty of the grounds.

“The weeping willow,” says Gilpin, “is a very picturesque tree. It is a perfect contrast to the Lombardy Poplar. The light airy spray of the poplar rises perpendicularly; that of the weeping willow is pendent. The shape of the leaf is conformable to the pensile character of the tree; and its spray, which is still lighter than that of the poplar, is more easily put in motion by a breath of air. The weeping willow, however,” he adds truly, “is not adapted to sublime subjects. We wish it not to screen the broken buttress, and gothic windows of an Abbey, nor to overshadow the battlements of a ruined castle. These offices it resigns to the oak, whose dignity can support them. The weeping willow seeks a humbler scene—some romantic foot-path bridge which it half conceals—or some glassy pool over which it hangs its streaming foliage

————— and dips
Its pendent boughs, stooping as if to drink.

In these situations it appears in character; and of course to advantage.”

This is the true office of this elegant pensile tree, whose streaming boughs and weeping form awaken the most interesting associations, poetical, melancholy and devotional. The tender and melancholy recollections of the captive children of Israel, when taken in conjunction with this tree, says Sir Thos. Dick Lander, “are of themselves sufficient to give it an interest in every human bosom that may have been touched by the strains of the Psalmist: ‘By the waters of Babylon

we sat down and wept, when we remembered thee, O Sion! as for our harps we hanged them upon the willows that were therein.' ”

A tree with such associations, and so long consecrated to the offices of grief and melancholy, is not fitted to ornament the lawn, or depend its branches from groups or plantations near buildings of any extent or architectural beauty. Here it is out of place: for it does not group well with the oak, the elm, and other stately trees. Its peculiar graceful and drooping spray and foliage are adapted to humbler scenes; and around some neat and secluded cottage, situated in some sylvan dell, or near to some streamlet or lake, its pendent boughs are in perfect keeping: there, and on the margins of rivers, and bordering low grounds, it harmonizes and adds expression to the scene.

The genuine *S. babylonica* is the only beautiful species; it grows rapidly, and attains a good size in five or six years.

51. THE SCOTCH LARCH, (*Làrix europæa*.) The Larch is an elegant tree, and is generally admired and considerably planted; but yet not to the extent which its merits deserve. Not only is it a handsome tree, but it grows so freely, and thrives on such poor soil, that every individual who has any spare ground should make a plantation larger or smaller every year. The example of the Duke of Athol has been so often published that it is unnecessary to repeat it. There are hundreds of thousands of acres of land in New England which might be covered with a growth of larch in fifty years.

But we speak more particularly of the larch as an ornamental tree. It forms a connecting link between the evergreens and the deciduous trees. It rises with a straight and erect trunk, and the branches which are horizontal at first assume with age a graceful drooping habit. Its spiry top and picturesque outline harmonize with other trees, and give the boldness and expression of the scenery of its native locality, where it overhangs rocks and precipices, and covers thousands of acres on the Alps of France, the Apennines of Italy, and the Tyrol mountains of Germany.

The larch grows exceedingly rapid, and attains the height of twenty feet in six or eight years. The foliage is of a light and pleasing green, and appears early in the spring, while the evergreen trees have not put on their summer hue. Around the mansion it should be introduced sparingly, for when in too large quantities their spiry tops look formal and destroy the graceful effect.

The American larch or hacmatack, though thought but little of, we consider a most picturesque tree: it is less regular in its outline than the European, though in other respects similar.

There are several other trees well deserving a place in every ornamental plantation. They are the Peperidge Tree, the Hop Hornbeam, the Liquidamber, the Paper Mulberry, &c. These we may notice and describe at another time in the same manner as we have done in our list now concluded.

ART. II. *Principles and Practice of Grafting.*

From the Gardeners' Chronicle.

NO. VI.—SECTION IV. GENERAL OBSERVATIONS ON BUDDING, (*Greffes en écusson.*)—Previously to commencing the operations connected with this series, it is necessary to examine the stocks, in order to ascertain whether their bark can be easily detached from their alburnum; otherwise we must wait till it will do so. Other considerations, not less important, merit some details, because on them the success of the buds generally depends. Calm weather should always be chosen; and the work should be suspended when the sun raises the thermometer above 78° of Fahrenheit.

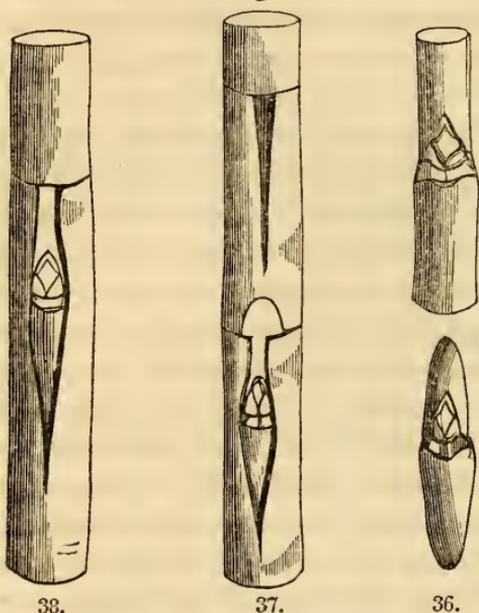
We ought also to avoid performing the operation when the sky threatens rain; for this, in falling on the budded plants, filters into the wounds made in them, and mixing with the sap, instantly decomposes it, and the bud consequently perishes in a few days; thus rendering it necessary to recom-

mence the operation, on the return of fine weather, and always on another part of the stock analogous to the first.

Budding is practised exclusively on woody plants, either on their stems or branches, of which the size may vary from the thickness of a quill to that of three inches in circumference. We may insert several buds on the same stem, either for making it fork, or for other purposes; or on branches, with the view of uniting upon them various species or varieties. I shall divide the different kinds of budding into two groups; the first comprising those with pushing eyes, *œil poussant*; the second, those with dormant eyes, *œil dormant*.

BUDDING WITH PUSHING EYES. Figs. 35, 36, 37, 38. (*Greffes en écusson à œil poussant*.)—In temperate and cold countries, this operation ought to be performed during the first rise of the sap; for by deferring much longer, the shoots springing from the inserted buds will be in danger of not being sufficiently matured for withstanding the frost: besides, this practice has the effect of weakening the stocks, by depriving them of a large quantity of foliage which they will then have acquired, it being necessary to cut back the stocks an inch or so above the bud, in order that it may be induced to push immediately after its insertion, and care must always be taken that the portion of stock left above be furnished with one or two shoots or leaves. The object of leaving this small piece of stem is to attract and concentrate the sap for the benefit of the bud. For the better fulfilling this, and for preventing the inconveniences above pointed out, they now do not immediately cut off the shoots from the stock; instead of doing so they bend them into the form of a huntsman's horn, and keep them in that state till the buds have fairly commenced to push, and then they cut them back to within about one-eighth of an inch of the bud. This operation, although less injurious than the preceding, causes the privation of a great quantity of foliage at the time when the trees are most in want of it, for protection against the excessive heat and drought, which is almost certain to occur, at that

period of the season ; and the consequence is that the vigor of the tree is suddenly checked ; and nothing but abundant waterings can possibly re-establish it. This mode of budding is only used for a few kinds of trees and shrubs ; among the latter, Roses are more especially included, the species or varieties called Hybrid Perpetuals (Remontantes), and Bengals being worked in this way ; but those amateurs who find themselves under the necessity of practising it, and who wish to maintain the vigor of their stocks, make a point of pre-



38. 37. 36.
Figs. 35, 36, 37, 38. Budding with Pushing Eyes.

serving as many leaves as possible, and bud only the strong shoots and branches ; and with regard to the weak, they only cut them back when the inserted buds are in a good state of vegetation.

There are also some fruit trees which we cannot bud by this mode before the leaves make their appearance, such as the Mulberry, Walnut, Chestnut, &c. ; but in order to succeed well with these, it is necessary to take buds from the two-year-old wood ; and in this case the branches had better be cut off in March, and preserved as has been directed for the shoots intended for cleft grafting. When the vegetation of the stocks destined for the reception of these buds shall have become decidedly active, the branches should be taken from their entrenchment, washed without much rubbing, then wrapped in a damp cloth and placed from 30 to 40 hours in a moist atmosphere of between 60° and 77° F., in order to expand their latent sap, so as to render it possible to detach their bark from the alburnum without laceration.

This state of the sap, almost indispensable for the proper raising of the buds, is also necessary for the budding per-

formed later ; but whatever may be the season, the buds are removed as follows :—With the blade of the grafting knife, we cut the shoot obliquely (see fig. 35); then we place the blade about three-quarters of an inch above the eye, for the purpose of raising it, accompanied with a large slice of bark ; in order to facilitate this operation we make the blade descend, sloping towards the eye, cutting through the bark, and a small portion of the alburnum. The blade should preserve the same slope for passing under the eye, and continuing its course until it meets the first cut. This eye, furnished with its two appendages, should be keenly examined when turned up ; and for this examination, as well as for everything else requiring to be done before placing it in the stock, we take it lightly between the fingers of the left hand, and with one of these we gently bend down the portion of bark placed above the *corculum* ;* then by means of the thumb of the right hand, and the blade of the grafting knife, placed in the same hand, we can take hold of the alburnum above the point, and remove it ; but this removal should not extend beyond the *corculum*, which ought to be preserved entire. If in consequence of not being well habituated in raising the eye, the patch of alburnum is too thick (and this we shall always know to be the case when it brings the eye along with it,) we must thin the whole, in order that it may separate without tearing out that essential part. Then, in front of the stock, with reference to the place where it is to be planted, proceed as follows : With the blade of the grafting knife make a horizontal incision, which shall embrace almost one-third of the stock, cutting through the bark as far as the alburnum ; another incision to the same depth should be made downwards and perpendicular to the first, the two representing the letter T ; then slightly raise the bark at the circular cut, taking care that in doing so the handle of the budding knife does not bruise the *cambium*.†

* A scientific name, for which I am inclined to substitute that of root, seeing that this small fleshy body, already fibrous and half-woody, is attached to the germ, eye, or vita point, which cannot, without its assistance, implant itself in the stock.

† A gummy semi-crystallized substance, which exists under the bark, and remains attached to the alburnum.

Thus prepared, as seen at fig. 36, the bud should be introduced under the two lips of the cut, then only partially opened, for it is generally by the bud being pushed and gently pressed in by the thin part of the handle of the budding knife, and in conjunction with it, that the opening is sufficiently effected. When the bud is perfectly fitted at the base, and placed as is represented, the portion of bark which extends above the transverse line is cut off. This operation is represented by fig. 37. The two lips are then brought towards each other, and fixed over the bark appertaining to the bud, by means of a ligature, generally of woollen or thick cotton thread; the length of this thread being proportioned to the thickness of the stock; two-thirds of the length should be kept in reserve in the right hand, the rest at the disposal of the left. Thus divided, we place it opposite the bud, and draw the two ends with a moderate force, crossing them above the bud, and as close to it as possible, without covering it. Two or three other turns should be made in the same manner. With regard to the finishing of the ligature, of which the object is to cover the rest of the wound, it will be sufficient to wind the thread continuously in the same direction, and finally secure it by a half-knot. When the stocks are extremely vigorous, it is prudent to inspect the ligatures soon after their application, and to loosen them occasionally, in order to preserve the buds from being strangled. When the bud shall have completely taken, the ligature may be removed; and we then take care to cut off all shoots springing from the stock below the bud, in order that the latter may appropriate the whole of the sap.

BUDDING WITH DORMANT EYES. (*Grefte en écusson à œil dormant.*)—Sometime previous to performing this operation, we ought to select the place on each stock which the bud should occupy, and remove all shoots likely to deprive the latter of the free contact of air. If this proceeding has been so far neglected as to be put in execution only a few days before budding, it is likely to occasion an interruption of the sap, and consequent adherence of the bark to the alburnum. If there has been such negligence, then the removal of the

shoots should only take place at the moment when the bud is to be inserted; and even with this precaution, there is a chance of bad success.

It has long been known that this mode of budding has immense advantages over all others, seeing that, if the buds do not succeed, the stocks are but little deteriorated by the proceeding; there is frequently an opportunity of making a second operation ten or twelve days after the first; and, as a last resource, these stocks may be budded the following season by the same mode, or by any other which their size may determine.

The various kinds of plants which may be budded, by dormant eyes, differ very much as regards the period of the flow of sap, and the length of time it continues; it is therefore of great importance to watch attentively the growth of each species, in order to seize the most favorable moment for budding with chance of success. I confess that this requires some practice. Our experienced budders judge that it is time to perform the operation when three-fourths at least of the shoots of each stock have ceased to push; in this state the bark of every tree is mature, and yet can be easily detached from the woody substance which it covers, and the sap being more stationary, we no longer dread its impetuous superabundance, which always proves detrimental to the success of the buds, frequently causing many of them to perish from plethora; in this case we say the sap has drowned them. If, however, circumstances render it necessary to bud before this excessive flow of sap is over, which will be indicated by the great number of shoots still forming, it will be necessary to cut back all their herbaceous tops as soon as the bud is inserted.

All that relates to the operation of this mode of budding is referable to that which has been stated concerning the preceding. With regard to the ligature, it is best to remove it at the fall of the leaf, in order to avoid the stagnant moisture which it retains about the bud, and which is prejudicial to the latter during winter. The heads of the stocks thus budded should be cut back in the following spring; for we must

not be in too great haste to perform this operation, more especially on some delicate species having gummy sap.

Where propagation is carried on in a small but careful way, they cut back the stock to within one-eighth of an inch above the bud. The principles of this operation ought to be based on those detailed in treating of pruning near a terminal bud [sloping behind the bud, more or less, according to the thickness of the stock]. In extensive operations, the cutting back is done roughly at three or four inches above the bud, in order that the stump may serve as a support to the shoot produced by the bud, which is temporarily fastened to it; and then the stump is not cut back till May or later, when many of the shoots require taller supporters.

BUDDING WITH THE SHIELD REMOVED WITHOUT ALBURNUM:

fig. 39. (*Grefte en écusson dénuée de bois.*) This mode, somewhat more complicated than the preceding, is employed for propagating delicate trees and shrubs with tender wood, and thin, tender bark. The shield is usually raised as follows: we trace its form with the blade of the grafting knife, cutting completely through the bark, and having removed a portion of that adjoining, (fig. 38,) we then press the shield between the fingers, and wrench it, in order to detach it from its position, accompanied with the small fleshy body under the eye; for, if by mischance it be found bruised, or if it remain attached to the alburnum, the shield must be destroyed, and another substituted. The frequent occurrence of this inconvenience has given rise to an infallible means of avoiding it,

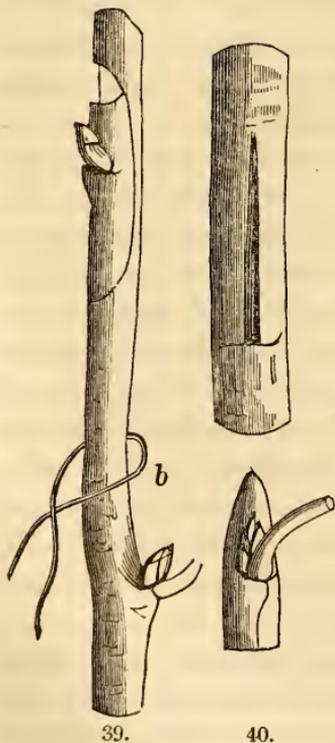


Fig. 39. Budding without removing the wood, and

Fig. 40. Budding with the Shield reversed.

infallible means of avoiding it.

It consists in employing a fine wire, as indicated at *b*, and maintaining it in that position, whilst pulling the two ends; it is made to glide along the alburnum, easily detaching the shield with the eye adhering to it. The bud is placed in the same way as directed for those in the preceding modes.

BUDDING WITH THE SHIELD PLACED IN AN OPENING MADE IN THE FORM OF A T REVERSED (L); fig. 40. (*Greffes en écusson placée dans une plaie faité en forme de T renverse, (L).*)

Operation.—Cut a shield of which the point shall be above the eye; see *a*. Raise this shield by means of a wire, as above explained; make in the stock an opening by cuts indicated in the figure, and there insert the shield by introducing its point at the base of the opening; unite the parts, and secure the whole by a ligature, which should commence below the eye.

This mode of budding is preferable to all others for propagating the good species and varieties of oranges and olives, and all other tender trees with gummy sap.

ART. III. *Market Gardening around London.*

By J. W. Cuthill.

MARKET gardening around London is carried on to a greater extent than in the neighborhood of any other city. The quantity of vegetables and fruits, required to supply a population of nearly two millions, is immense, and thousands of acres of ground must be cultivated—and well cultivated too—for this purpose. Consequently the art of market gardening is thoroughly understood, and carried to the highest state of perfection.

Very little, however, has been written upon this subject; and though we have occasionally noticed brief articles on the growth of the grape, the strawberry and some other fruits, as practised by Messrs. Wilmot, Keens, and other extensive growers, no particular or minute description of the vegetable garden-

ing has been published until the present year, when a series of most excellent papers has appeared in the *Gardeners' Chronicle*, by Mr. Cuthill, describing the whole course of cultivation as practised by the most extensive market gardeners who supply Covent Garden, the greatest of the London markets. Mr. Cuthill has done a great service in giving to the gardening world the entire routine of practice of these London cultivators. Mr. Errington, one of the most thorough and skilful gardeners, and one who is familiar with the subject of market gardens, highly compliments Mr. Cuthill for his excellent papers. He says:—

“All the world has heard of the fame of the London market men, but not every one bred and located in the country can get an opportunity to be an eye witness of their excellent modes of cropping, based on long experience, and sought out with an anxiety sharpened by high rentals, and the severity of competition. Many of our farmers, who talk so much about land wearing out, would doubtless stare to see men taking first rate crops from a plot of ground on which, perhaps, the same crop has been repeated, it may be, at least forty times during the last fifty years. Now as these keen practitioners will not “write a book,” but would rather retain a monopoly in the shrine-making art for the goddess Diana, it must be admitted that Mr. Cuthill has produced a series of papers which cannot but be of eminent service both to agriculturists and horticulturists; and I can only wish that they may receive the attention they deserve.”

These papers of Mr. Cuthill are not all applicable to cultivation in our climate, where there is six months of severe frost and cold: but still they are full of valuable hints, and with the omission of some parts, which refer to crops not extensively cultivated here, we shall endeavor to find room for them in our pages.

What Mr. Cuthill says in reference to repeated cropping will we hope be attentively read; for in these days of “high farming,” when “rotation” is the only thing that will prevent the entire exhaustion of our farms and gardens, it is refreshing to read a bit of common sense, applied to agricultural and

horticultural art; and those scientific amateurs who have gathered all their ideas of cultivation from reading Liebig, and who would have us believe that charcoal, spent tan, lime, peat, gypsum, ashes, saltpetre, &c., are the only agents which are to renovate and enrich our poor, impoverished and worn out soils, may gather a useful lesson from Mr. Cuthill's observations.—ED.

GENERAL REMARKS TOUCHING ROTATION OF CROPS, &c.—If we take a five-acre piece of ground, say in November, we shall find it full of cabbages, which being planted out about the 25th of October, will be strong healthy plants. The moment these are off, the land is again trenched and cropped with early celery, in well dunged trenches six feet apart, with two or three rows of lettuces or coleworts in the middle; for market gardeners do not mould up celery until it is very large (often 18 inches high), so there is plenty of time for a crop of cabbages, coleworts, or lettuces to come to maturity. When the celery is removed, the ground is cropped with winter-greens, and again cleared off, for nothing pays so well as the London greens or young unhearted cabbages. In November, Mr. Fitch, of Fulham, has often upwards of 20 acres of these, besides 20 acres of cabbages; every hole and corner under trees, and all spare places being full. When the five-acred piece is cleared of coleworts, say by the 1st of March, it is again dunged and trenched and sown with onions, and very often lettuces are planted in the beds as well as in the alleys. When the onions are off, the ground is trenched and planted with cabbages or coleworts, &c.; next spring a crop of cauliflowers, gherkin cucumbers, French beans, or scarlet runners is taken off; but the grand point in the course of rotation is to be continually sowing, and whatever plants are ready when the ground is empty to plant these. The land can well sustain so much cropping on account of the heavy dungings, trenchings, and hoeings which it receives. If you ask a market gardener what is to succeed this or that crop, the answer is, "Don't know, it depends upon what is ready for planting." Continued trenching two spades deep for any crop seems expensive; but a strong Irish laborer will

turn over from 12 to 14 rods a day, with comparative ease, and I may here state that if it were not for the Irish laborer the prices of vegetables would be much higher. Market gardeners know that after an active crop the top soil for several inches deep is entirely exhausted, and hence the reason for continual trenching, in order to bring up the top soil, that but a few months before had been turned down, with a large proportion of dung, to enrich it and fit it for active use along with the half decayed manure.

Market gardening is well conducted about London, and if young gardeners were to spend only one year with such men as Messrs. Fitch, of Fulham, it would teach them a lesson which would amply repay a twelve month's hard labor. They would be taught there how to grow digestible vegetables, and not those stunted blue cabbages and other things that are, in too many cases, huddled up in walled-in gardens. I am almost certain that the day will arrive when the latter will be converted into forcing grounds, and when vegetables will be grown in the open fields, which are their proper places. If a farmer were to send his son to be a laborer in a market garden for a year or two, the value of such a school to such a man in after life would be great to himself, his landlord, and to the country at large. The expensive system of a market garden would not be required in a farm; it could not be maintained; but it would show him that one acre cultivated by the spade is equal to five by the plough. We know that some market gardeners use the plough; but how does it pay? Their things are always the last sold, and that for the most part to the hawker, whose name will tell the price obtained. It is, however, necessary to have a scari-fier plough in all market gardens, in order to tear up the earth after the carts in wet weather. Some years ago I took the late Mr. Smith, of Deanston, over Messrs. Fitch's grounds. Till then he had no knowledge of the enormous expenses of keeping a large garden. "I have not seen," said he, "on the whole 150 acres, a weed; all the ground exhibits a fine level surface; every inch is cropped; all the paths regular; the cart-roads in good order; the hedges of the boundaries

very dwarf ; no ditches, and all the large plantations of apples, pears, and plums, amounting to fifty acres, with every young shoot made during the summer, pruned down to a couple or three buds from last year's wood." Pruned after the manner of currant bushes, they look well and bear enormous crops. The ground under the trees is all cropped with rhubarb, currants, gooseberries ; and during the winter with coleworts and cabbages. I have seen eight acres of cabbages in seed beds, after the rest are all picked out for spring cabbages. Every spare piece of ground is filled ; when the asparagus haulm is cut down, the ground is forked over, and all planted with coleworts, alleys and all ; and when the rhubarb leaves die down, this ground is also filled, so that altogether, besides the other crops, there must be several hundred thousand heads of greens for winter market. All liquid manure from dunghills is collected into a large tank ; this is conveyed to and distributed over the ground before digging ; but the great objection to the use of sewage water after the crop is in, is that it fills up the pores of the earth, cements the mould, and prevents heat and air from acting on the roots.

Some market gardeners keep large herds of pigs, which live night and day amongst the hot dung, and subsist upon the corn that they pick out of the straw and dung, as well as on green food. Mr. Fitch keeps twelve horses, whose whole employment is to cart goods to the various markets, bring home dung, and convey it to vacant pieces of ground, which occur every week. The carts and wagons in use in market gardens have generally broad wheels. The wagons are very large, and the carts will hold as much as a Suffolk wagon. The laborers employed by Messrs. Fitch on 150 acres, amount to about 70 in winter, and in summer to about 150. The rent per acre is from 9*l.* to 10*l.*, the tithes being from 10*s.* to 12*s.* per acre. Men's wages are 2*s.* per day ; women, from 1*s.* to 1*s.* 6*d.* Some idea of the amount of labor in small matters will be conceived, when I state that the whole of the frames, amounting to 1,000 lights, are all painted and repaired every autumn. The whole of the hand-lights, 4,000 in number,

are also repaired ; and every description of vegetable is washed before it is sent to market. When men are at piece-work, they receive $2\frac{1}{2}d.$ per rod, for trenching two spades deep ; thus an acre highly manured, using cart-loads instead of barrowfuls, and trenching with spade, instead of shallow digging, or what is worse, using a plough, pays just in proportion to the way in which it is treated.

I have now thrown out a few general hints as to the management of a 150 acre garden. In my next and following articles, I shall proceed to particularise some of the leading crops.

EARLY POTATOES.—These being in great demand in spring, the following plan of producing them has been long practised by the London market gardeners. The kind which Mr. Fitch cultivates is the true Early Shaw, a large and beautiful white-skinned potato, whose only fault is its hollow eye. It is very prolific, either under hoops or in the open ground. The Ash-leaved Kidney was not grown to any great extent for market until my plan of managing it was made known, by which I caused it to produce as good a crop as any of the round ones, and it always fetches a better price. When potatoes are wanted early, a long bed, five feet wide, is dug out to the depth of two feet. This trench is filled with hot dung, on which six inches deep of the surrounding mould is put. Middle-sized whole potatoes are used for planting ; they are placed in close succession along the bed, covered with two inches of mould, hooped and covered over with mats and straw. In about a month they will have sprouted ; frames are then got ready, placing two feet of hot manure along the whole line of framing, which is sometimes a hundred yards in length ; the mould is put on to the depth of eight inches ; the potatoes are carefully taken up from the striking bed, all shoots are removed except the main one, and they are planted four inches deep. Radishes are then sowed thinly over them, covering lightly with mould. When the haulm of the potato has grown to about six inches in height, the points are nipped off ; this is done, in order to give the radishes fair play, and, although it may stop growth for a few days, still

the crop is always excellent. The plants are never moulded up, a plan which weakens the potato more than anything else. After planting, nothing more is required but to admit plenty of air, and give water; the crop is not dug up until it has come to maturity.

The above is the treatment frame potatoes receive, but they are largely grown in hooped beds in the open ground. In the latter case the tubers are sprouted, as I have before mentioned. The beds or ridges are dug out two feet deep in January, filled with hot dung and covered with the surrounding mould to the depth of ten inches. The potatoes are taken up and planted five inches deep, and above all, radishes are sown. The ridges are then hooped over, allowing about two feet of space in the middle between the mould and the hoop. They are covered with mats and straw, but as soon as the radishes come up they are uncovered daily, and covered again every night. This is continued till the potatoes are ready for digging in May; for sometimes large losses are occasioned by a sudden change of weather on cold April nights. Nothing more is done to the hooped beds, beyond attending to them with water. Market gardeners were wont to cut all very large potatoes for seed, but they are now getting more into the system of keeping the small ones for planting, and sending the large ones to market.

What are called winter or new potatoes are the produce of old tubers kept back until July, and then planted. They grow very fast, but the crop never ripens before frost sets in; as soon as the haulm is cut down, large quantities of straw are put on the ground, and towards Christmas the tubers are dug up, put into 1 lb. and 2 lb. baskets, and sold for new potatoes, at from 6d. to 8d. per lb.; they are as full of water as a turnip, on account of the leaves being destroyed before the cells had time to become filled with starch. Cornwall Kidneys are the only ones used for this purpose. On examining one you will find the skin firmly attached, which is not the case with a new potato, either grown in frames or in the natural ground.

ART. IV. *Notice and Description of Brown's Patent Fumigator, for the Destruction of Insects.* By the EDITOR.

THE attacks of insects are yearly become so destructive and annoying that every means should be taken to prevent their increase. Latterly, many of those which a few years ago were perfect pests, have become less injurious from the timely discovery of that great agent for destroying insect life—whale oil soap. Without this, our rose gardens would be complete specimens of devastation, so unconquerable is the slug by every foe, except oil soap.

But while soap is so destructive to many insects, and sulphur to others, there are some sorts which neither will harm, or, at least, there are some which are easier destroyed by other means, the principal of which is fumigation with tobacco. The aphid or green fly is invulnerable to sulphur, while a small stream of tobacco smoke will kill them off "in a whiff."

Many persons make objection to the use of whale oil soap, on account of its strong and disagreeable odor. To us, no odor, however bad, is so objectionable as a horde of insects preying on a beautiful plant. But to those who do dislike oil soap, fumigation will at once suggest itself as one of the best means of destroying many of the same insects for which soap is generally made use of. The only trouble has been how to apply the fumes of tobacco to plants and shrubs, especially those growing in the open air; this has always been attended with much trouble, but at last it has been in a great degree obviated by Brown's Patent Fumigator, of which we present an engraving, (*Fig. 41.*)

This is a new and improved instrument for effectually applying tobacco smoke to conservatories, greenhouses, frames, &c., and to plants in the open ground; also to dwelling houses, closets, cellars, aviaries, heneries, &c., where insects of various kinds are often very annoying, disagreeable or destructive.

It has been extensively used in England, and has been recommended by Mr. Paxton, Mr. Beck, Dr. Lindley, Mr. Glenny, Mr. Johnston, Mr. Wood, and other editors, gardeners, nurserymen and amateur cultivators. It has also been tried by amateurs and cultivators in the vicinity of Boston, and has been found to be well adapted to the purpose for which it was invented. The *thrips* and the *aphis*, two of the most destructive insects to grapes and roses, are killed immediately upon one good application of smoke. We are confident it will prove a valuable machine, and one which every gardener or amateur should always have at hand. An hour's application of the smoke will save hundreds of plants, trees, &c.

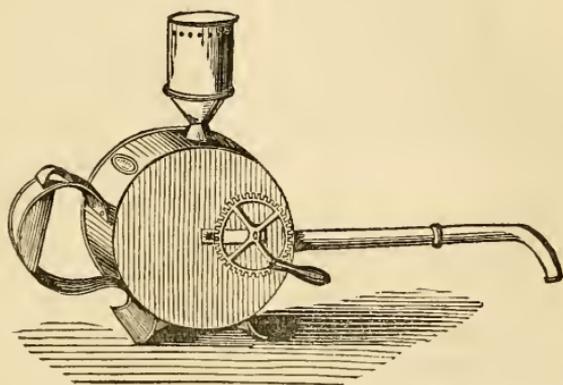


Fig. 41. Brown's Patent Fumigator.

Formerly all the fumigating was done with a kind of bellows, hard to work, and not of sufficient capacity to fill a small house, or to throw out the smoke in such a cool, continuous stream. All the objections to the bellows are obviated in Brown's Fumigator.

The machine, as represented in the engraving, is made of tin, and is sufficiently light and portable to be used with ease. It consists of a circular box, on the top of which is a copper pot, movable, in which the tobacco is placed. The interior of the box is so contrived with fans, as, by turning the handle, to throw out through the tube on the opposite side, a full stream of perfectly cool smoke.

It should be worked as follows:—Fill the copper pot with tobacco, (leaf is the best,) placed in rather lightly; then, with a piece of lighted paper, ignite it: turn the handle immediately, rather fast at first, but very gently after the smoke appears freely at the mouth of the tube; when the tobacco is exhausted, with a damp cloth remove the pot, and fill immediately, repeating the operation as long as may be required.

Amateurs, and especially ladies, to whom smoke is extremely disagreeable, can use the Fumigator without suffering any of the disagreeableness, and often nausea, arising from the use of tobacco, as applied in the ordinary way.

For fumigation in the open air, in the most effective way, an old cloth or sheet may be thrown over the bush, and the end of the tube applied at the bottom. The space will be immediately filled, and every insect destroyed.

We can highly recommend this Fumigator as one of the most useful machines to every cultivator. With one of these, no one need complain that their plants have suffered from the green fly.

ART. V. *Pomological Gossip.*

STRAWBERRIES AND THE STRAWBERRY CROP.—There seems to have been a general complaint of the failure of the strawberry crop of the present year. In our vicinity it has been stated that there was not half the usual quantity, and by some cultivators, not more than one fourth. In Cincinnati, famous for the *quantity* of strawberries which are brought to market, the crop has been exceedingly small. A writer in the *Horticultural Review* gives the opinion of several of the most extensive growers whom he has consulted, and they estimate the crop to be only from *one third* to *one sixth* the usual quantity. The failure in Cincinnati is attributed to late frosts, which injured the first blossoms; this, however, was not the cause in the vicinity of Boston, as no late frosts were experienced, of any severity.

We are inclined to attribute the short crop here to the very great quantity of rain which fell during the latter part of winter and beginning of spring. The ground was so flooded with water, that a great many of the vines damped off, or were so weakened, that they did not start with sufficient vigor to perfect their fruit. But whether this was the true cause or not, remains to be ascertained; such, at least, is our view of it, and we shall be glad to hear the opinions of others.

But notwithstanding the very great failure of the crop in Cincinnati, we notice that the Horticultural Society of that city have awarded the prize of one hundred dollars, offered a year or two ago, for the largest strawberry, to Mr. McAvoy, Mr. Longworth's gardener, for a new seedling, which is called McAvoy's Superior. From a report of the doings of the Society, we notice that a strong desire was expressed not to make any decision this year, when there were no fine specimens to compete with it, in consequence of the failure of the crop. The committee, however, made up the award, which was as follows:—

“McAvoy's No. 12 seedling, proposed to be called McAvoy's Superior; pistillate, very prolific, large, dark colored, high flavored and luscious—a hardy plant; the specimens exhibited superior to any other strawberry that came under the examination of the committee, and is entitled to the premium of one hundred dollars offered by the Society in 1847.”

Certainly we get but little information in regard to this new prize strawberry from the above report! It does not say whether the variety is round, oblong, or oval; we have neither weight nor measurement of the berries, in order that we may make a comparison with other well known kinds. It is somewhat surprising that the committee were not more particular in the award of a prize, in which the reputation and good judgment of the Society are at stake.

For the information of our amateur cultivators around Boston, we would ask, what was the weight of the heaviest berry? or of the six heaviest berries? What the measure-

ment in circumference of the largest fruit? These questions being answered, we may then judge of the size and value of the variety. The weights of Hovey's Seedlings, which have taken prizes, are on record, and for the convenience of those who do not wish to turn back to find them, we now give here:—

Six berries exhibited in 1847, weighed *three and a half ounces.*

Six berries exhibited in 1848, weighed *three ounces seventeen grains.*

The average measurement of these specimens was about five and a half inches in circumference. Comparing these data with those of McAvoy's Superior, when they are published, we may form some estimate, other qualities being equal, of the value of this new variety, and of the justice of the award of the Cincinnati Horticultural Society. We hope Dr. Warder will give us the required information, through his excellent journal.

Several new seedling strawberries, as will be seen by our reports of the Massachusetts Horticultural Society, have been exhibited this year, but though very good of themselves, they have not come up to that standard required of a new variety, viz., that it should be at least as good, if not better, than any kind already grown.

We notice in the *Rural New Yorker*, that a writer speaks of the excellence of the Bishop's Orange strawberry, a variety discarded by the cultivators around Boston years ago; and one which was struck from the list of the London Horticultural Society. It has greatly surprised us to see this old sort now spoken of, "as possessing the very finest qualities."

Scarcely a new seedling has been raised the last ten years, of any merit at all, but what was better than Bishop's Orange. Indeed, any person, with carefully selected seed, could be certain of a better variety. It is very acid, of only medium size, and the fruit is borne on such short stems, that it lies upon the ground, and is greatly injured by heavy rains.

In our last Number, in the Report of the Massachusetts

Horticultural Society, will be found the Report of the Fruit Committee, upon thirty varieties of strawberries, presented by J. P. Cushing, Esq. They included all the prominent kinds which have recently been brought to notice, and a careful perusal of the report will at once give a tolerably fair estimate of the kinds. Several of them were very fine, others good, while many of them were indifferent, and we might say, worthless. Though well grown, with much care by Mr. Cushing, none of them were what would be called large. The Black Prince was among the kinds; but with all due deference to the opinion of others, we even do not class it so high as the committee, who call it "below medium quality." It is a very dark, dull looking fruit, with prominent seeds, and the flesh is coarse, woolly, and almost tasteless. Burr's New Pine is a pale looking berry, of moderate size, and delicate flavor, but wanting in the rich character of the Pine strawberries. It greatly resembles the Chili, and appears to have been raised from that parentage. Most of the others were too ordinary to require particular notice.

NEW CHERRIES.—Several new varieties of cherries have fruited the present year, but with the exception of some native seedlings, none of them come up to the Black Eagle, Tartarian, &c. The Hon. M. P. Wilder exhibited the Cerise de Xavier, and Cerise de Spa, both acid cherries; Buttner's Black Heart, of good size and firm flesh, but not tender or high flavored; Bigarreau de Mezel, large, but not very rich; Bigarreau Noir Tardif, of medium size, very dark, sweet and good; Guigne Blanche, small, late and sweet; it appears to be identical with the Transparent, of some writers; De Holstein, a round red cherry of medium size, very good.

Messrs. Hovey & Co. also exhibited their new Seedling, which is very late, of the largest size, extremely beautiful and excellent.

THE KINGSLEY APPLE.—The specimens of this apple, which we noticed in our last, did not come up to our expectations. The fruit is below medium size, but of good appearance, and that it keeps well we had the best evidence before us in the remarkably sound specimens eaten the first week in

July : but beyond its late keeping, we cannot, from what we have so far seen of it, give it any other character than that of a late keeping fruit : perhaps our specimens were not in their best condition, but judging from them, we should set it down as only of medium quality, possessing very little flower—certainly bearing no comparison with the Roxbury Russet, English Russet, Baldwin and Northern Spy, all in eating nearly at the same period.

ART. VI. *Description of Twelve New Verbenas.*

By the EDITOR.

WE continue our descriptive account of new verbenas, from our last volume (XVI, p. 275,) up to which time we have described in our pages all the valuable varieties which have been produced in this country, and most of the foreign ones, which have been introduced.

We have often alluded to the very great improvement which has been made in the verbena ; and last year, in noticing some of the new ones which originated with the French cultivators, we remarked that their seedlings were taking the place of those of the English florists : this appears to have been true, for of all that have been introduced into collections here, a larger part are of French origin, and they are generally superior in the richness and variety of their coloring, as well as in the large size of their flowers, and the fine habit of the plants.

We trust our cultivators will not abandon a field, so rich and beautiful in its products, and where results are so speedily obtained, even with the fine sorts before them which have recently been received from abroad. There is no reason why we should not go on improving all the more ; for with the improved sorts to aid them, there is good reason to hope for still greater results. We have several new seedlings, a few of which are very remarkable ; one a magnificent white, and the other a superb striped one, which we shall hereafter describe ; but with the exception of these, we have not seen an

American seedling distinct or new in color raised the last year.

We repeat, that we hope our amateurs and nurserymen will each make renewed efforts to produce seedlings, confident that, with proper attention, they can raise varieties which will equal if not surpass any yet introduced.

1. HEROINE (*Dufoy's.*) Flowers large, light blue, with dark eye; petals large, flat, well formed and of good substance; umbels very large, moderately compact, and rather flat; habit vigorous, similar to Defiance, but the trusses of flowers are rather short stemmed and do not elevate themselves sufficiently above the lateral clusters of buds: foliage medium size, good. It is a superb variety of this color.

2. PAUL AND VIRGINIA, (*Demoureau.*) Flowers medium size, pink with a deep rose centre; petals medium size, somewhat starry, nearly flat, and of good substance; umbels large, well formed, moderately compact; habit moderately vigorous, similar to Reine du Jour, but the flower stems are longer and more erect; foliage good. A distinct and fine variety, blooming very freely.

3. ECLIPSE, (*Dufoy's.*) Flowers large, pale rose, with a large and deep purple centre; petals well formed, of good substance but rather too much cupped at the edges; umbels large, moderately compact and well formed; habit moderately vigorous, similar to Reine du Jour; foliage good. A distinct and showy vervena.

4. MORPHE' (*Dufoy's.*) Flowers large, of a deep bluish purple, with a light eye; petals large, finely formed, and of excellent substance; umbels large, moderately compact, and well formed. Habit vigorous, similar to Heroine, which it somewhat resembles in color, though darker; foliage good. A superb variety.

5. ADELE', (*Chauviere.*) Flowers large, rosy lilac, with a distinct light purple centre, and white eye; petals large, flat, well formed and of good substance; umbels good size, tolerably compact, presenting a fine circle and well up in the centre; habit vigorous and good; foliage good.

6. TALLEYRAND, (*Defosse.*) Flowers medium size, lilac mottled; petals large, well formed, and of good substance;

umbels large, compact, good shape, well up in the centre ; habit similar to Adèle ; foliage good.

7. ECLIPSE, (*Epps.*) Flowers medium size, fine rose, distinctly lined on each side of the petals with blush white ; petals of medium size, rather starry and of good substance ; umbels good size, nearly flat ; habit moderately vigorous, extending rapidly and very high up or trailing ; foliage good. This is quite a new and distinct variety, and from its trailing habit well adapted for vases.

8. WHITE PERFECTION, (*Smith.*) Flowers of medium size, pure white ; petals medium size, of fine form, and tolerable substance ; umbels medium size, compact and fair form ; habit similar to Suzette, which it resembles, and is no improvement upon it.

9. SUNSET, (*Turner.*) Flowers large, deep cherry ; petals very large, of good form and substance ; umbels very large, moderately compact, well formed ; habit vigorous, very similar to Beauty Supreme, which it resembles, but the trusses are much larger.

10. WONDERFUL, (*Perry.*) Flowers medium size, blush white, with fine eye ; petals large, well formed and slightly cupped, and of good substance ; umbels of good size, compact and well formed ; habit moderately vigorous ; foliage good.

11. UNION JACK. Flowers medium size, deep crimson scarlet, with a distinct yellow eye ; petals medium size, well formed and of excellent substance ; umbels moderate size, of fine circular outline, well up in the centre, rather compact ; habit moderately vigorous and good ; foliage small, good. A very brilliant variety.

12. BEAUTY OF RYE, (*Turner's.*) Flowers medium size, clear cherry, with yellow eye ; petals medium size, well formed ; umbels fair size and good form ; habit moderately vigorous ; foliage small.

Several other foreign varieties have been introduced, but we have not seen them sufficiently to give a description. Their names are as follows :—Clotilde, Sir Seymour Blanc, (white), Ariadne, Sea Bird, Graciosa, (mottled blue,) Malvina, &c. &c.

REVIEWS.

ART. I. *The Fruit Garden; a treatise intended to explain and illustrate the Physiology of fruit trees, the theory and practice of all operations connected with Propagation, Transplanting, Pruning and Training of orchard and garden trees as Standards, Dwarfs, Pyramids, Espaliers, &c.; the laying out and arranging different kinds of orchards, gardens, &c. Illustrated with upwards of one hundred and fifty engravings, &c.* By P. BARRY, of the Mount Hope Nurseries, Rochester, New York: 1 vol. 12mo. 398 pages. New York, 1851.

IF any evidence were wanting to show the increasing interest which is felt in Horticultural Science, that evidence would be the ready sale of the several works which have been published treating upon the subject. Where there was one reader twenty years ago, there are now hundreds, and notwithstanding the multiplication of works of this kind, a single edition of the ordinary issue forms no adequate supply to the demand.

Mr. Barry's work, of which we have given but a portion of the title page above, is quite unlike any of those which have preceded it, and consequently does not come in competition with them. His volume is Physiological and practical, rather than Pomological and theoretical. He begins with the young tree, and traces it through all its modes of growth, under the hands of the experienced gardener, to a vigorous fruiting condition, and shows how this or that operation is accomplished, not hap-hazard, but on scientific principles established by long continued practice and study.

The work is divided into four parts as follows:—

“For the sake of convenient reference, the different branches of the subject have been separated into four parts. The *first* treats of general principles, a knowledge of the structure, character, and functions of the different parts of trees, modes of growth, bearing, &c., &c.; soils, manures, modes of propagation, &c. This must be the ground-work of the study of tree culture. The *second* treats of the nursery. The *third* of plantations,

orchards of different kinds, gardens, &c.; their laying out and management, and of the pruning and training of trees in different forms. The *fourth* contains abridged descriptions of the best fruits, a chapter on gathering and preserving fruits, another on diseases and insects, and another on the implements in common use."—p. xii.

We have not space to notice the volume in course, but opening at the chapter on the General Principles of Pruning, we marked the following as a good specimen of Mr. Barry's mode of treating the subject:—

Pinching to promote Fruitfulness.—Those who have never practised this, or observed its results, may have seen, if experienced in tree growing, that a shoot of which the point was broken, bruised, or otherwise injured, during the growing season, frequently becomes a fruit branch, either during the same or the following season; and this, especially if situated in the interior of the tree, or on the older and lower parts of the branches. The check given to the extension of the shoot concentrates the sap in the part remaining; and, unless the check has been given very early in the season, or the growth very vigorous in the tree, so that the buds will break and form shoots, they are certain to prepare for the production of fruit. It is on this principle of checking the growth, and concentrating the sap in the pinched shoot, that pinching to induce fruitfulness is performed; and its efficiency may be estimated from the fact, that trees on which it has been practised, have borne fruit four or five, and perhaps seven years, sooner than they would have done without it.

It is a most useful operation in the case of vigorous growing and tardy bearing sorts. The best illustration, on a large scale in this country, is the specimen plantation of pear trees of Messrs. Hovey & Co., of Boston. A large number of these are pyramidal in form, and on pear stocks, very beautiful trees, indeed the best specimens of the kind in any American nursery, and though, now in 1850, only seven years old (the oldest), yet they have as a general thing produced fruit, and many of them for two or three years past. This result has been obtained by pinching, which has been regularly, but not to the fullest extent, practised upon them every season. *The mode of performing it*, is to pinch off the end of the shoot with the finger and thumb; if a small portion of the remaining part be bruised, no matter, it offers a greater check than if a clean cut were made, as in pruning to a bud; and in the general winter or spring pruning which follows, the bruised parts can be cleanly separated. *The time to perform it* depends wholly on circumstances. If the object be to regulate growth, then the time to do it is, when the tendency to undue or ill-proportioned growth is first observable, and this will be from the time the young shoots are two to three inches long and upwards. The particular season of the year or day of the month will, of course, depend upon the earliness or lateness of the season, and on the soil and situation as well as on the habits of growth of the species or variety to be operated on. The true way is to be always on the watch.

M. Dubreuil, formerly Professor of Arboriculture in the Garden of Plants at Rouen, in France, sums up the general principles of pruning as follows. (I may remark here, that in 1849, I visited the Rouen garden, and found M. Dubreuil's theory and practice beautifully illustrated on the trees in his charge. My visit was made at the time of his practical lectures and I was able to examine the whole with the most satisfactory minuteness. The trees there, under all forms, and embracing all the hardy species of fruits, were the best that I any where found, not even excepting the much admired and famous pyramidal pear trees of M. Cappe, at Paris. They were not only perfect in form, but as regards *vigor* and *fruitfulness*, in the most admirable condition.) He says:—

“The theory of the pruning of fruit trees rests on the following six general principles:

“1. *The vigor of a tree, subjected to pruning, depends, in a great measure, on the equal distribution of sap in all its branches.*

“In fruit trees abandoned to themselves, the sap is equally distributed in the different parts without any other aid than nature, because the tree assumes the form most in harmony with the natural tendency of the sap.*

“But in those submitted to pruning, it is different; the forms imposed on them, such as espalier, pyramid, vase, &c., change more or less the normal direction of the sap, and prevent it from taking the form proper to its species. Thus nearly all the forms given to trees require the development of ramifications more or less numerous, and of greater or less dimensions at the base of the stem. And, as the sap tends by preference towards the summit of the tree, it happens that, unless great care be taken, the branches at the base become feeble, and finally dry up, and the form intended to be obtained disappears, to be replaced by the natural form, that is, a stem or a trunk with a branching head. It is then indispensable, if we wish to preserve the form we impose upon trees, to employ certain means, by the aid of which the natural direction of the sap can be changed and directed towards the points where we wish to obtain the most vigorous growth. To do this we must arrest vegetation in the parts to which the sap is carried in too great abundance, and on the contrary favor the parts that do not receive enough. To accomplish this the following means must be successively employed.

“1. *Prune the branches of the most vigorous parts very short, and those of the weak parts long.* We know that the sap is attracted by the leaves. The removal of a large number of wood-buds from the vigorous parts, deprives these parts of the leaves which these buds would have produced; consequently the sap is attracted there in less quantities, and the growth thereby diminished. The feeble parts being pruned long, present a great

* This is not in all cases true. Peach trees, we know, left to themselves, exhibit a very striking example of the unequal distribution of the sap. The ends of the branches attract nearly the whole, leaving the lateral shoots and lower parts to die out. In other species, similar instances might be quoted, and as a general thing, the proposition is unsound, except in a comparative sense.

number of buds, which produce a large surface of leaves, and these attract the sap and acquire a vigorous growth. This principle holds good in all trees, under whatever form they may be conducted.

“2. *Leave a large quantity of fruit on the strong part, and remove the whole, or greater part, from the feeble.* We know already that the fruit has the property of attracting to it the sap from the roots, and of employing it entirely to its own growth. The necessary result of this is, what we are about to point out, viz., that all the sap which arrives in the strong parts, will be absorbed by the fruits, and the wood there, in consequence, will make but little growth, while on the feeble part, deprived of fruits, the sap will all be appropriated by the growing parts, and they will increase in size and strength.

“3. *Bend the strong parts and keep the weak erect.* The more erect the branches and stem are, the greater will be the flow of sap to the growing parts; hence, the feeble parts being erect, attract much more sap than the strong parts inclined, and, consequently, make a more vigorous growth, and soon recover their balance. This remedy is more especially applied to espalier trees.

“4. *Remove from the vigorous parts the superfluous shoots as early in the season as possible, and from the feeble parts as late as possible.* The fewer the number of young shoots there are on a branch, the fewer there are of leaves, and consequently the less is the sap attracted there. Hence, in leaving the young shoots on the feeble part, their leaves attract the sap there, and induce a vigorous growth.

“5. *Pinch early the soft extremities of the shoots on the vigorous parts, and as late as possible on the feeble parts, excepting always any shoots which may be too vigorous for their position.* By thus pinching early the strong part, the flow of sap to that point is checked, and naturally turns to the growing parts that have not been pinched; this remedy is applicable to trees in all forms.

“6. *Lay in the strong shoots on the trellis early, and leave the feeble parts loose as long as possible.* Laying in the strong parts obstructs the circulation of the sap in them, and consequently favors the weak parts that are loose. This is only applicable to espaliers.

“7. *In espalier trees, giving the feeble parts the benefit of the light, and confining the strong parts more in the shade, restores a balance,* for light is the agent which enables leaves to perform their functions and their action on the roots, and the parts receiving the greatest proportion of it acquire the most vigorous development.

2. *The sap acts with greater force and produces more vigorous growth on a branch or shoot pruned short, than on one pruned long.* This is easily explained. The sap acting on two buds must evidently produce a greater development of wood on them, than if it were divided between fifteen or twenty buds.

“It follows from this, that if we wish to obtain wood branches, we prune short, for vigorous shoots produce few fruit buds. On the contrary, if we

wish to obtain fruit branches, we prune long, because the most slender or feeble shoots are the most disposed to fruit.

“Another application of this principle is to prune short for a year or two, such trees or parts as have become enfeebled by overbearing. (This principle deserves especial attention, as its application is of great importance.)

3. “*The sap tending always to the extremities of the shoots causes the terminal bud to push with greater vigor than the laterals.* According to this principle, when we wish a prolongment of a stem or branch, we should prune to a vigorous wood bud, and leave no production that can interfere with the action of the sap on it.

4. “*The more the sap is obstructed in its circulation, the more likely it will be to produce fruit buds.* This principle is founded on a fact to which we have already had occasion to refer, viz.—that the sap circulating slowly is subjected to a more complete elaboration in the tissues of the tree, and becomes better adapted to the formation of fruit buds.

“This principle can be applied to produce the following result: When we wish to produce fruit buds on a branch, we prevent a free circulation of the sap by bending the branches, or by making annular or circular incisions on it; and on the contrary, when we wish to change a fruit branch into a wood branch, we give it a vertical position, or prune it to two or three buds, on which we concentrate the action of the sap and thus induce their vigorous development.

5. “*The leaves serve to prepare the sap absorbed by the roots for the nourishment of the tree, and aid the formation of buds on the shoots. All trees, therefore, deprived of their leaves are liable to perish.* This principle shows how dangerous it is to remove a large quantity of leaves from trees, under the pretext of aiding the growth or ripening of fruits, for the leaves are the nourishing organs, and the trees deprived of them cannot continue to grow, neither can the fruit; and the branches so stripped will have feeble, ill-formed buds, which will, the following year, produce a weak and sickly growth.

6. “*Where the buds of any shoot or branch do not develop before the age of two years, they can only be forced into activity by a very close pruning, and in some cases, as the peach, this even will often fail.* This last principle shows the importance of pruning the main branches of espaliers particularly, so as to ensure the development of the buds of their successive sections, and to preserve well the side shoots thus produced, for without this, the interior of the tree will become naked and unproductive, and a remedy will be very difficult.”

If these principles and practices of pruning be carefully studied in connection with the habits of growth and bearing of the different fruit trees, pruning will be comparatively an easy matter. The mode of obtaining any particular form or character cannot fail to be perfectly plain and simple; yet no one need hope to accomplish, in all things, the precise results aimed at, for even the most skilful operator is sometimes disappointed: but those

who give constant attention to their trees, will always discover a failure in time to apply a remedy.

I insist upon it, because I have been taught it by most abundant experience, that the most unremitting watchfulness is necessary in conducting trees in particular forms. It is not by any means *labor* that is required; but attention, that the most delicate hand can perform; fifteen or twenty minutes at a time, say three times a week during active growth, will be sufficient to examine every shoot on a moderate collection of garden trees; for the eye very soon becomes trained so well to the work, that a glance at a tree will detect the parts that are either too strong or too weak, or that in any way require attention. This is one of the most interesting features in the management of garden trees. We are never allowed to forget them. From day to day they require some attention, and offer some new point of interest that attracts us to them, and augments our solicitude for their prosperity, until it actually grows into enthusiasm.

Mr. Barry has given us a book greatly needed, and he has performed his task in an admirable manner. The descriptions accompanying the figures are sufficiently explicit, without being too extended to be perfectly understood, and as they illustrate more particularly the different systems of pruning and training dwarf trees, which are now becoming so generally cultivated, the amateur will find it a safe guide to follow in the management of his fruit garden.

The work is neatly got up, and the engravings are many of them very finely executed; altogether it is a volume highly creditable to our horticultural literature.

ART. II. 1. *The Pennsylvania Farm Journal, devoted to Agriculture, Horticulture and Rural Economy.* S. S. HALDERMAN, Editor. In Monthly Nos., large octavo, pp. 32. Lancaster, Pa. Nos. 1 to 4.

2. *The Journal of Agriculture,* W. S. KING, Editor. In Semi-Monthly Nos. pp. 32. Boston. No. 1.

THESE are the titles of two new agricultural publications which have been sent to us by their respective Editors;

the former issued in Pennsylvania, commencing in April, and the latter from this city, commencing in July.

Pennsylvania, since the discontinuance of the Farmers' Cabinet, has been without any publication upon agriculture or horticulture, except such of the ordinary weekly publications as unite farming and general news, and we hail with pleasure the appearance of a neat and comely Journal like that before us, edited by a gentleman so well able to make it one of the first of the agricultural papers of the country. Prof. Halderman's name is sufficient to secure an extended circulation of the work, and the aid which he will bring to his assistance cannot but be of the greatest benefit to the interests of agriculture and horticulture in the Keystone State. We notice the name of our correspondent, Dr. Brincklé, as a contributor to the horticultural department. The numbers which have already appeared contain some excellent articles on the destruction of insects, by the Editor, who appears familiar with the habits, history, and the best mode of preventing their ravages.

The Journal of Agriculture adds one more to the six or eight agricultural publications issued in Massachusetts. Certainly we must be becoming a farming State to judge of the prosperity of all these journals, which number thousands of readers. The Ploughman, Cultivator, Rambler, and New England Farmer, besides others in the western part of the State, circulate large editions, and now we have another aspirant for public favor. The more information, if of the right kind, and not *too scientific*, the better; it will serve to open the eyes of our farmers to their own true interests, and assist them in tilling their lands to better advantage, and in reaping a great profit through the means of increased production.

We say *too scientific*, because the word science, as now used, has often little meaning. A recent writer speaks of the "application of science to restore the productive energies of our soil," of the "application of science in the improvement of our horses, swine, &c." Some will suppose that this means the application of a peculiar something, forgetting that *science is simply knowledge*, and that knowledge is the result

of practice combined with the study of known laws and their results ; and we are afraid that some writers, in their zeal for science, may overlook that equally important matter of practical experience, without which the appliance of science often fails. These remarks are suggested by the introductory, in which the Editor says that science is the foundation of agriculture—and that he desires and designs “ to give it a foremost place in his pages.”

The Editor has secured the assistance of Prof. Mapes, of New Jersey, and with such aid he cannot fail to produce an interesting paper.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

ON THE PRESERVATION OF FRUIT.—We have frequently been asked, what is the best mode of PRESERVING FRUIT, and whether there are not chemical means of keeping it, so that it may be preserved fresh and wholly unchanged for a long time ; either by placing it in contact with some substance which shall counteract its tendency to spoil, or by plunging it in some gas or liquid which will prevent it from decomposing. There have been a great many attempts to do this, but they have all been attended with but very partial success. Fruit, for the most part, consists chiefly of sugar, gum, starch, cellular matter, water, and a small quantity of albumen, and gluten ; but besides all these, it also contains certain other substances, such as coloring matter, and a small quantity of some highly fragrant volatile oil, to which the taste and agreeable smell of the fruit is due. The most changeable component of fruit, therefore, is the azotised matter, which is generally that which first of all commences to decompose ; usually, too, air is necessary to its change, and consequently those fruits which have thick dense skins, dry and shrivel up, when they are kept, without being spoiled. In drying, of course they lose some portion of the volatile flavoring matter, but they also retain some, and they may be kept for a long time, without either putrefying or fermenting. The more delicate and highly flavored fruits, however, are not of this description ; their skins are so porous and open, that they very soon allow the air to pass into the interior of the fruit, and consequently it is impossible to preserve them by drying.

The immediate consequence of air coming in contact with the pulpy matter of ripe fruit, is that the azotised matters begin to absorb oxygen, and

decompose; then the sugar, starch and gum are acted on; the flavor is rapidly destroyed, sometimes spirit is formed, the sugar simply undergoing the vinous fermentation; at other times, the change goes on more rapidly, and the fruit soon becomes putrid. All these effects may be easily observed, by watching the ripening of any of the common varieties of fruit. The drying up of ripe grapes, which are left to hang with their skins uninjured, and the immediate change which occurs if the skin is injured or punctured, is familiar to every one. The rapid change which takes place in ripe gooseberries, when the skins burst, and which, in the first instance, is a mere case of common vinous fermentation, is also well known. The injury which all fruit sustains from bruises, though it often does not produce the same effect, is yet in chemical nature very similar to that which occurs in the gooseberry. The cause of the evil in all cases is the oxygen of the air; and the mode in which it acts consists in the skin or cuticle being destroyed or injured, so that the air finds an easy entrance through the damaged part. In the case of delicate and thin-skinned fruits, they are so porous that the air enters on all sides, as soon as they are fully ripe, and even though they are not in any way injured, and this constitutes the chief difficulty in preserving them.

The fresh juice of the grape readily ferments, as soon as it is exposed to the air, but the juice of a raisin or half-dried grape no longer has the power of doing so, because it contains too much sugar to ferment. A weak solution of sugar, under favorable conditions, soon begins to ferment; whilst a strong one is unable to enter into the vinous fermentation. It is in part, on this fact, that the common mode of preserving fruits by means of sugar depends. In making preserves, too, the fruit is heated, and heat, by rendering the vegetable albumen solid, makes it less likely to decompose. The preservative influence of heat on all forms of organic matter is well known; the value of heat in preventing the decomposition of food generally, was minutely detailed by Apport in 1810, for which he was rewarded by the French Government with a sum of twelve thousand francs.

But both heat and sugar, though no doubt very useful agents in the preservation of fruit, are very far from being quite satisfactory; and though, by their use, the fruit may be prevented from undergoing actual fermentation, yet more or less of the flavoring matter of the fruit is always destroyed or lost. What is wanted is a means of preventing the decomposition of the fruit, without the use of any substance which could injure its flavor, either by the addition of a new flavor or the destruction of the natural one.—(*Gardener's Chronicle*, p. 355, 1851.)

ART. II. *Massachusetts Horticultural Society.*

Saturday, June 28.—In our account of this meeting in our last Number, we omitted to give the complete award of all the prizes for Roses; those omitted were as follows:—

For the second best twelve varieties of Roses, to M. P. Wilder, \$3.

For the third best, to Jos. Breck & Son, \$3.

July 5.—An adjourned meeting of the Society was held to-day—Vice President Richards in the chair.

There was no business of importance. Adjourned two weeks to July 19.

Exhibited.—FLOWERS: From Hovey & Co., ten varieties of Prairie roses, as follows: Queen, Baltimore Belle, Mrs. Hovey, Caradora Allen, Eva Corinne, Ann Marie, Perpetual Pink, Superba, Miss Gunnell, Pride of Washington. From J. Breck, Phlox in great var., iris in var., martagon lily, delphiniums in var., clematis in var., Prairie roses, six var. From P. Barnes, Prairie roses in var., martagon lily, orange and white do, phlox in var., delphiniums in var., campanula. From J. Nugent, pelargoniums in var., prairie roses, dahlias, campanula phlox, delphiniums, &c.

From Winship & Co., delphiniums in var., lilies, clematis, six var., *Podalaria alba*, Phlox carnea, spiræas, 7 var., variety of shrubs and herbaceous plants. From J. Hovey, two bouquets, Prairie roses, lilies, digitalis, aconitum, dianthus, verbenas, spiræas, &c. From J. Mann, Jr., Prairie roses in var., pinks, marigolds, gladiolus in var., digitalis, veronica, carnations, picotees, spiræas, delphiniums. From A. Bowditch, Prairie Queen and Baltimore Belle roses.

PREMIUMS AND GRATUITIES AWARDED.

PRAIRIE ROSES.—For the best display of not less than six varieties, to Hovey & Co., \$5.

For the second best display of not less than four varieties, to J. Breck, \$4.

For the third best display of not less than four varieties, to Winship & Co., \$3.

GRATUITIES.—To J. Mann, Jr., A. Bowditch, J. Breck, P. Barnes, J. Nugent, and Winship & Co., \$1 each.

FRUITS: From M. P. Wilder, cherries, Bigarreau Gabaulis or Monstreuse de Mezel, large size, very fine, Downton, fine, Black Eagle, superior, Cerise de Xavier, Cerise de Spa, White Tartarian, Lemercier, all very fine specimens. From Hovey & Co., grapes, Wilmot's Hamburg No. 16, Victoria, both fine, Wilmot's Black Hamburg, and White Frontignan. From Otis Johnson, cherries, Black Tartarian very fine, Mottled Bigarreau, superior, White Bigarreau, and Honey Heart, fine; peaches, Coolidge's Favorite, superior. From J. Lovett, strawberries, Hovey's Seedling, very fine; cherries, Black Tartarian, superior, and Elton, very fine. From J. S. Fay, apples, June apple; grapes, Muscadine, both grown in the open air, in Washington county, Georgia. From G. Merriam, cherries, Black Tartarian, very fine, and Bigarreau. From S. Davis, cherries, a seedling; and a Lemon raised in pot, weighing four and a half ounces.

From J. P. Cushing, Esq., grapes, white Frontignan, superior; Black Hamburg, Muscat of Alexandria, both very fine; Syrian, extra large bunch, very fine; Chasselas of Fontainbleau. From H. Vandine, cherries, China Heart and Black Tartarian. From A. Dexter, cherries, unnamed. From J. Hyde & Son, cherries, Black Tartarian, superior. From G. Walsh,

cherries, Seedling No. 1, superior. From Mrs. F. B. Durfee, by W. Young, grapes, Black Hamburg, Victoria, Black St. Peters, Muscat of Alexandria, and Sweetwater, all superior, bunches large and the berries large, high colored and well ripened.

From Parker Barnes, cherries, Black Eagle. From J. Mann, House of Industry, cherries, a Bigarreau, fine. From Breck & Co., grapes, Black Hamburg, Rose Chasselas, both fine; White Chasselas. From J. F. Allen, peaches, Late Crawford, very fine, extra large; grapes, White Hamburg, fine; Portugal Muscat, Wilmot's Hamburg No. 16, Black Hamburg, Flame-colored Tokay, fine; Partridge Foot, small black grape, new. From F. Blake, cherries, Black Tartarian. From A. Bowditch, grapes, White Frontignan, Black Hamburg, Black St. Peters. From A. D. Williams & Son, cherries, four varieties unnamed.

Fruits tested—From M. P. Wilder, cherries, De Spa, very acid; Cerise de Xavier, acid, resembling the Duke; Lemercier? resembling the Morello, all of medium size and dark red color; White Tartarian, good; Downton, good, both good sized cherries of a light or flesh color; Bigarreau Gabaullis or Monstreuse de Mezel, a large cherry, dark color, sweet and good, a firm meated cherry; Black Eagle, very sweet and good flavored, a very superior cherry. From G. Walsh, Seedling, No. 1, good. From S. Davis, Seedling cherries, of light color, mottled. From J. S. Fay, apples, from Washington County, Georgia, called June Apple, very tender and good, resembles in appearance the Early Harvest; also Muscadine grapes, raised in open air in Georgia, sweet and good. From J. F. Allen, grapes, Partridge Foot, a small black grape, late, new. From President of the Society, strawberries, Walker's Seedling, good.

VEGETABLES.—From J. Mann, Jr., Early cabbages, var. Shilling's fine Queen, the first exhibited and very fine; Early turnips; Blood beets, fine. From J. Crosby, Long Blood beets and one brace of cucumbers, fine. From J. Nugent, Early Bush beans, open culture, the first exhibited for the season, fine.

July 12. Exhibited.—**FLOWERS:** From J. Breck, phlox in var., delphiniums in var., spiræa in var., Stock gilliflowers, phlox in var. From P. Barnes, *Campánula nobilis*, delphiniums in var., Prairie roses in var., *Campánula nobilis álba*, dahlias, carnations. From J. Nugent, one round bouquet, geraniums in great variety, dahlias, larkspur, &c. From Winship & Co., delphiniums in var., yucca in var., spiræa in var., azaleas in var., clematis in var., and a great variety of herbaceous plants. From J. P. Cushing, by G. Evers, Stock gilliflowers, pinks, carnations, picotees. From Dr. C. F. Chaplin, carnations, pinks and picotees. From W. Kenrick, by Miss Russell, one basket of flowers, round bouquets. From Hovey & Co., *Aphelandra cristata*, with two fine heads of its splendid scarlet flowers; also, picotees and carnations. From J. Mann, Jr., gladiolus, veronica, roses, pinks, carnations and picotees, in var., &c. From A. Bowditch, carnations and picotees in var., phlox in var., roses in var., verbenas, lychnis, single and double, *Torenia asiatica*, *Cereus grandiflora*, and bouquets.

GRATUITIES AWARDED.

To Hovey & Co., for a specimen of *Aphelandra cristata*, \$1.

To A. Bowditch, for plants and flowers, \$2.

To Miss Russell, J. Breck, P. Barnes, and J. Mann, Jr., for cut flowers, \$1 each.

FRUITS.—From J. P. Cushing, Esq., grapes, Black Hamburg, very fine; Syrian bunch, extra size; Muscat of Alexandria, very fine; White Frontignan, superior; melons, Beechwood and Persian, both very fine. From W. Batchelder, cherries, Downer. From G. Merriam, cherries, Downer, very fine. From J. Lovett, 2d, cherries, Sparhawk's Honey Heart; raspberries, Knevet's Giant, superior. From H. Vandine, cherries, Elkhorn, very fine. From J. Hyde & Son, cherries, probably Bigarreau Noir. From M. P. Wilder, cherries, Seedling, Bigarreau Noir Tardif, Bigarreau Noir, Downer, superior. From Winship & Co., cherries, Bigarreau Noir, (?) Downer. From J. Mann, Jr., cherries, unnamed, probably Elkhorn; raspberries. From C. Newhall, raspberries, Knevet's Giant.

From Hovey & Co., figs, Black of St. Michael's; cherries, Black Eagle, very fine; Seedling; Monstreuse de Bavay, and one new variety unnamed; grapes, Gros Bleu; Victoria, very fine, and Muscat of Alexandria. From J. S. Sleeper, cherries, Seedling. From A. Bowditch, raspberries, Knevet's Giant; grapes, Black Hamburg and Black St. Peters. From S. Sweetser, raspberries, Knevet's Giant. From J. W. Foster, raspberries, Knevet's Giant, fine. From Breck & Co., grapes, Black Hamburg, fine; White Chasselas. From Messrs. Hyde, cherries, Hyde's new Black Seedling.

From C. E. Grant, strawberries, Newland's Alpine and Monthly Alpine; raspberries, Knevet's Giant. From H. B. Stanwood, cherries, Downer, very fine. From O. Johnson, cherries, Sweet Montmorency, Florence, Black Eagle, superior; Napoleon Bigarreau, fine, and Seedling. From G. Walsh, cherries, Seedling Nos. 1, 2 and 3, fine. From J. F. Allen, grapes, Garden Tokay and Black Hamburg; White Hamburg, very fine; Cannon Hall, superior; White Frontignan, very fine; peaches, Late Crawford, extra size, superior; Tippecanoe, New Jersey, Grosse Mignonne, Old Mixon; nectarines, Violet Hatif and Boston.

Fruits tested.—From M. P. Wilder, cherries, Bigarreau Noir Tardif, a fine cherry, sweet, very dark color, of moderate size.

From G. Walsh, cherries, Seedling No. 1, large, a fine cherry, sweet. No. 2 resembles No. 1. No. 3, of moderate size, very fine, sweet, superior to the others; all of them of firm flesh.

From E. Woods, cherries, seedling of light color, firm flesh, sweet and good; late.

From Hovey & Co., cherries, Monstreuse de Bavay, and a new Seedling; large, very dark color, firm flesh, and a fine cherry.

From J. P. Cushing, Esq., melons, Persian, very fine; Beechwood, fine.

From J. F. Allen, grapes, Black Hamburg, fine; Garden Tokay, small, amber-colored, very sweet and fine.

From H. Vandine, cherries, Elkhorn, very large, dark, firm flesh.

VEGETABLES.—From Josiah Crosby, cucumbers, carrots and Long Blood beets, fine. From J. Mann, Jr., Turnip Blood beets, and four heads Shilling's fine Queen cabbage: This variety is new, and excellent for an early variety. From J. B. Moore, Turnip Blood beets, and Early flat turnips, fine. From H. Bradlee, by Michael Gordon, two brace of cucumbers, var. Manchester Prize Fighter and Horticultural Prize, measuring from 16 to 22 inches, well grown and very fine.

July 19.—An adjourned meeting of the Society was held to-day—Vice President French in the chair.

A letter was received from Dr. J. V. C. Smith, accompanied with a package of seeds. The thanks of the Society were voted to Dr. Smith, and the seeds placed in the care of the Vegetable Committee, for distribution.

B. Harrington, Lexington, Dr. S. G. Howe and Thomas Powers, Boston, and J. B. Bright, Waltham, were elected members.

Adjourned one week to July 26.

Exhibited.—**FLOWERS:** From J. Mann, Jr., pinks, picotees, marigolds, spiræa, annuals, and herbaceous plants. From J. Breck, delphiniums in var., verbenas in var., gilliflowers in var., godetia, hollyhocks in great var., annuals, and herbaceous plants. From P. Barnes, *Convólvolus minor*, delphiniums in var., carnations and picotees, *Aconitum variegatum*, spiræas, annuals, &c. From R. G. Bell, Lowell, Seedling hollyhocks. From J. Nugent, carnations, dahlias, roses, pelargoniums, sweet peas, &c.; two bouquets.

From Hovey & Co., a large collection of upwards of 400 blooms of carnations, picotees, and pinks, named kinds and seedlings; verbenas, Sunset, Heroine, Eclipse, Striped Eclipse, Adélé, and a new seedling white, the finest ever raised; color pure, and truss larger than any other verbena; ten varieties of phlox, and a large collection of fine hollyhocks. The following are the names of the carnations and picotees, which were awarded the prize:—Duchess of Devonshire, (Rose Flake,) Squire Clark, Kinfare Hero, King Alfred, Duke of Newcastle, (P. Picotee,) Lady Peel, (P. Picotee,) Queen Victoria, (P. Picotee,) Beauty of Cambridge, (Yellow Picotee,) and two fine Seedlings.

From Dr. C. F. Chaplin, carnations, picotees and pinks, mostly seedlings. From Winship & Co., Yucca in var., Prairie roses in var., shrubs and herbaceous plants. From A. Bowditch, pinks and carnations, three bouquets.

From J. P. Cushing, by G. Evers, carnations and picotees in great var. From W. Kenrick, by Miss Russell, two baskets 4 bouquets flowers. From J. A. Kenrick, by Miss Kenrick, basket of flowers.

PREMIUMS AND GRATUITIES AWARDED.

CARNATIONS AND PICOTEES.—For the best ten varieties, to Hovey & Co., \$5.

For the second best ten varieties, to Dr. C. F. Chaplin, \$4.

For the best display, to Hovey & Co., \$3.

HOLLYHOCKS.—For the best display, to J. Breck & Son, \$5.

For the second best, to Hovey & Co., \$4.

GRATUITY.—To R. G. Bell, for a small collection of hollyhocks, \$4.

FRUITS.—From J. P. Cushing, grapes, White Frontignan, Muscat of Alexandria, Black Hamburg, and Syrian, all fine; currants, White Dutch, and Knight's Sweet Red. From J. W. Foster, very large cherry currants. From J. S. Sleeper, Seedling cherries. From C. E. Grant, Late Duke cherries, fine, and Monthly Alpine strawberries, good. From M. H. Simpson, very fine George IV, Early Royal George, and Coolidge's Favorite peaches. From E. King, peaches, good.

From Hovey & Co., fine Muscat of Alexandria grapes; Coolidge's Favorite, and Early York peaches; and Black Bigarreau of Savoy, and Seedling cherries—the latter the same as before exhibited, very large, beautiful and fine. From George Walsh, Seedling No. 1 and No. 4, the former fine, very black. From Mr. Osgood, cherries, two kinds. From J. F. Allen, Franconia raspberries, Sweet Montmorency cherries, Crawford's Late and Old Mixton peaches, fine; White Hamburg grapes, and Violet Hatve and Boston Nectarines.

From S. Bigelow, by T. Willott, very large and fine bunches of Muscat of Alexandria and Black Hamburg grapes, (the latter not well colored, but berries and bunches large.) From G. Merriam, Sparhawk's Honey (?) cherries. From J. Lovett, very fine Knevet's Giant raspberries. From H. Vandine, Elkhorn cherries, large and handsome. From A. D. Williams & Son, Red and White currants, and Downer cherries. From M. P. Wilder, Late Duke, De Holstein, Buttner's Black Heart, Guigne Blanche, and a variety unnamed. From E. Wight, Seedling Yellow raspberries.

Fruits tested.—From J. F. Allen, cherries, Sweet Montmorency, fine as usual, with his late variety, a seedling from the Sweet Montmorency, fine. From Pomological Garden, cherries, and seedling, of a small size. From M. P. Wilder, cherries, Guigne Blanche, a handsome transparent fruit; Buttner's Black Heart, not worthy of cultivation. From G. Merriam, cherries, Sparhawk's Honey, fine. From the President, cherries, Downer, fine. From H. Vandine, cherries, Elkhorn, a large fruit, but liable to crack. From Hovey & Co., a seedling, and Black Bigarreau of Savoy. From G. Walsh, cherries, Elkhorn.

VEGETABLES.—From J. Crosby, Long Blood beets, Early Turnip beets, carrots, Early cabbages, cucumbers, and Early potatoes, fine. From J. B. Moore, Long Blood beets and Champion of England peas, very fine. From J. Mann, Jr., Early Turnip beets, Early Northern cabbage, and Shilling's Fine Queen cabbage, well grown and fine. From J. Hittinger, by John Faulkner, Early tomatoes, open culture and first exhibited. From A. D. Williams & Son, Early White potatoes, fine.

July 26.—An adjourned meeting of the Society was held to-day, the President in the chair.

The Chairman of the Committee of Arrangements reported that they had voted to hold the Annual Exhibition on the 17th, 18th and 19th of September next, to commence at 12 o'clock on Wednesday, the 17th.

Adjourned two weeks, to August 9.

Exhibited.—**FLOWERS:** From J. Breck, hollyhocks in great var., gilliflowers, verbenas, phloxes, &c. From P. Barnes, roses, delphiniums, sweet peas, carnations, marigolds and other herbaceous plants. From R. G. Bell, Lowell, pinks in var., seedling antirrhinums, hollyhocks, 12 var., geranium, new scarlet, (seedling) pansies. From J. Nugent, Sweet peas in great var., marigolds, carnations, dahlias, hand bouquets, &c. From J. Hovey, hand bouquets. From E. M. Richards, dahlias. From W. Kenrick, by Miss Russell, baskets and bouquets of flowers. From J. A. Kenrick, by Miss Mary M. Kenrick, basket of flowers. From Hovey & Co., *Técoma* jasminoides. From A. Bowditch, phlox, 10 var., and hand bouquets. From J. Mann, Jr., phlox, sweet peas, marigolds, carnations, &c.

FRUITS.—From Hovey & Co, currants, Victoria, fine; White Dutch, fine; pears, Doyenne d'Ete; grapes, Muscat of Alexandria, fine; Syrian; peaches, Early York, fine; Clinton, Early Crawford, fine; Bergen's Yellow, fine. From G. Walsh, Black currants. From J. Lovett, currants, White Dutch, Gondouin, very fine; Victoria, Red Dutch. From Hyde & Son, cherries, Seedling and Mazard. From W. Batcheler, Seedling Mazard cherries. From J. F. Allen, cherries, Sweet Montmorency; grapes, Bishop, Rose Chasselas, Poiteau Noir, White Hamburg; plums, Washington, fine; nectarines, Violet Hative, Newington, Downton, &c.; peaches, Old Mixon, Grosse Mignonne, Lafayette, &c. From C. E. Grant, Highblackberries; strawberries, Monthly Alpine, Newland's Alpine, fine; pears, Madeleine.

From the President, pears, Madeleine. From J. Breck, grapes, Black Muscat, Muscat of Alexandria, Black Hamburg. From S. Bigelow, grapes, Muscat of Alexandria, and Black Hamburg. From A. Bowditch, grapes, Black Hamburg. From F. Tudor, figs, fine. From G. Wilson, currants, White Dutch, very fine; Red Dutch, fine, and Gondouin, very fine. From O. Johnson, currants, White Dutch, fine. From J. S. Needham, White High blackberries. From J. W. Foster, gooseberries, seedlings, fine. From J. Gordon, gooseberries. From J. Hovey, gooseberries; apples, Early Harvest. From E. King, peaches, Early Crawford. From M. H. Simpson, peaches, Late Crawford, large and fine. From C. Newhall, nectarines, Elruge, Vermash; peaches, Early Crawford. From E. M. Richards, apples, Early Harvest, Red Astrachan. From A. D. Williams & Son, apples, Early Harvest.

Fruits tested.—From the President, pears, Madeleine. From Hovey & Co., pears, Doyenne d'Ete, which promises very fine as an early fruit; peaches, Early York, fine. From W. Bachelder, cherries, Black Mazard, not fully ripe. From Hyde & Son, cherries, Red Mazard, fine.

VEGETABLES.—From J. Crosby, Early potatoes and tomatoes, very fine. From A. Bowditch, Champion of England peas, very fine, and one of the best in cultivation, being remarkably sweet, tender and prolific. From J. Mann, Jr., fine early Turnip beets and onions. From A. D. Williams & Son, two varieties potatoes, very large and fine.

PREMIUMS AWARDED FOR FRUITS.

STRAWBERRIES.—For the best specimens, to S. Downer, Jr., for Jenney's Seedling, \$6.

For the second best, to O. Johnson, for Hovey's Seedling \$4.

For the third best, to T. A. Rice, for Hovey's Seedling, \$3.

To the President, for fine specimens of his Seedling, \$3.

To G. Evers, for a great variety of kinds, \$3.

CHERRIES.—For the best specimens, to J. F. Allen, for Elton, (forced) \$6.

For the second best, to O. Johnson, for Black Eagle.

To M. P. Wilder, Hovey & Co., J. Lovett, G. Walsh, H. Vandine, G. Merriam, A. Dexter, W. Bachelder, Hyde & Son, F. Blake, and A. D. Williams & Son, a gratuity to each, of the Bronze Medal, for fine specimens.

GRAPES.—For the best specimens before July 1, to Dr. N. Durfee, \$10.

For the second best, to Hovey & Co., \$7.

To J. F. Allen, a gratuity of \$7, for fine assortment of grapes.

To G. Evers and W. C. Strong, a gratuity to each, of the Silver Medal, for fine specimens.

PEACHES.—For the best specimens, (under glass,) to J. F. Allen, \$6, for Crawford's Late.

For the second best, to O. Johnson, for Coolidge's Favorite, \$4.

To W. C. Strong, a gratuity of \$4.

HORTICULTURAL OPERATIONS

FOR AUGUST.

FRUIT DEPARTMENT.

JULY has been an exceedingly dry and warm month; very little rain has fallen, and many trees and plants have suffered, particularly those removed in the spring. The fruit crop has suffered some, particularly the smaller kinds, such as Raspberries, Currants, &c. But excepting this slight drought, the season has been warm, genial and favorable; trees well established have grown well, and the fruit, particularly pears, though by no means an abundant crop, looks exceedingly clean, smooth and handsome, and so far unusually free from cracking, or mould, which so generally injured them the last cold and wet summer.

The present month will be a busier one than July: budding should be commenced and mostly finished this month: new plantations of strawberries should be made the last of the month or in September, and the ground should now be trenched and prepared. Another important matter, too often neglected, is that of thinning out the fruit on trees that are overloaded, as it accomplishes two objects; one, the health and future prosperity of the tree; and the other, larger and superior fruit. Those who have not tried the experiment thoroughly have very little idea of the effect which thinning

has upon the excellence of the remaining crop. Insects should still have much attention. The autumn caterpillar is just now commencing its ravages, and if trees are neglected they soon overrun and devour every green leaf.

GRAPE VINES, in the greenhouse or grapery, will now be ripening their crop; give air freely in order that the black kinds may get well colored; keep the laterals cut in as they require it. Discontinue damping the floors and walks, as the grapes acquire a richer flavor in a dry atmosphere. Vines in cold houses, from the continued warm weather of last month, have progressed rapidly, and will now begin to color; attend carefully to the airing of the house, and damp the walks in all warm days. Continue to shoulder the bunches if not already done. Vines in the open air should now be put in good order; take off every lateral two eyes beyond the fruit except on such wood as should be laid in for next year.

PEACH TREES planted in pots the present year, should be liberally watered, occasionally with liquid manure; nip off the ends of straggling shoots.

STRAWBERRY BEDS should be made the last of the month.

PLUM, CHERRY, AND PEAR TREES should be budded this month.

SUMMER PRUNING should be attended to throughout the month; shoots pinched off last month will by this time have started again, and will require another pinching in order to check the sap and throw it into the laterals. Trees planted this year will succeed better if mulched with short grass or stable litter.

FLOWER DEPARTMENT.

The dry weather of July has greatly retarded the growth of verbenas, and other bedded out plants, and unless they have been liberally watered they will have but just begun to bloom. Keep the ground constantly stirred, which will do more to keep the plants in vigorous condition than occasional watering.

Continue to look over, and repot, re-arrange and put in order the stock of plants for next winter. Keep all plants intended for that purpose well watered, and topped, in order to have them bushy and strong. Sow biennial and perennial flower seeds now for a succession. Continue to layer and propagate all plants increased in this way.

CARNATIONS and PICOTEES should now be layered; the sooner it is done the stronger will be the plants.

WHITE LILIES may be taken up, divided and re-set this month.

PELARGONIUMS not yet headed down should at once be attended to, so that the old plants may get well broke before cold weather. As soon as cut down put them in a half shady place, or in an old frame, and water them sparingly until well broken.

CAMELLIAS should now be liberally watered and freely syringed every other day. Plants may be inarched and grafted now. Cuttings may also be put in.

CHRYSANTHEMUMS planted out in the open ground should have their tops layered off into small pots, as these make fine flowering plants. Plants raised from cuttings should now be shifted into their flowering pots.

OXALIS HIRTA and **BOWIEI** should now be potted.

DAHLIAS will now be growing rapidly and will require attention. See that they are well staked, neatly tied and pruned, and if fine flowers are wanted, mulch with rotten manure, and water liberally in dry weather, syringing the tops freely.

CHINESE PRIMROSES may now be propagated from cuttings, particularly the double kinds.

PANSY seed should now be planted for spring flowering; choice kinds should now be propagated from cuttings.

ROSES should be budded, layered, and propagated from cuttings now.

CANTERBURY BELLS, Sweet Williams, Scabious and other biennial flower seeds should be planted now.

FUCHSIAS may have a final shift now into their flowering pots.

NAPOLITAN VIOLETS should have liberal waterings in dry weather.

LEMON and **ORANGE** trees should be budded this month.

CALCEOLARIA seed may now be planted.

CALLAS should now be repotted and liberally watered.

TREE PÆONIES may be propagated now by grafting on the roots of the herbaceous kinds.

MIGNONETTE should now be sown in pots for flowering next winter.

GREENHOUSE PLANTS. Continue to propagate such seeds as are wanted; repot others, and see that every thing is put in a state of preparation for housing in September.

FLOWER GARDEN AND SHRUBBERY.

If proper attention has been given to this department it will now be in fine order. The phoxes and other late flowering perennials will be in bloom, and the trees will put on their richest verdure. The lawn will not look as velvety as a few weeks hence, but if properly rolled and mown it will yet retain a good color.

Continue to clean and rake the walks; clip box edgings and hedges, and mow grass verges; hoe and rake the borders at least once a week, and cut away all dead or decaying flower stems. Tie up all tall growing plants and peg down as they extend their shoots, verbenas, petunias, &c.

Shrubs of various kinds which may be growing vigorously, should have the tops of the strong shoots or suckers pinched off, in order to bring them into good shape. Roses budded on briars should be kept free from suckers which rob the scion of all its nourishment. Tie and train up roses, honeysuckles, &c. which may be planted against arbors or trellises. Get ready ground to be planted with bulbs or plants next month or later, and look out that the season does not pass by without too many things being left undone.

THE MAGAZINE
OF
HORTICULTURE.

SEPTEMBER, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *A Few Words upon the Cultivation of the Pear upon Quince Stocks.* By the EDITOR.

NOTHING is just now attracting more attention in fruit culture than the growth of the pear upon the quince. It is but a few years since this mode of cultivation began to attract notice from American pomologists, though long and extensively practised in France, and to some extent in England. A prejudice seems to have existed among our cultivators generally, that the trees were so short lived upon the quince that it was no object to plant them ; and, strange to say, this prejudice has been kept alive, to a considerable extent, by several of our pomological authors, whose knowledge and means of information, on the contrary, should have enabled them to remove rather than increase erroneous opinions upon a subject of so much interest to all fruit cultivators. We quote from the *Fruits and Fruit Trees of America*, by Mr. Downing, (last edition) :—

“ A variety of pear grafted on a healthy pear seedling, lasts almost as long as upon its own roots. Upon a thorn stock it does not endure so long. Upon a mountain ash, rather less. Upon a *quince stock still less*, until the average life of the pear tree, when grafted on the quince, is reduced from fifty years,—its ordinary duration on the pear stock,—*to about a dozen years*. This is well known to every practical gardener, and it arises from the want of affinity between the

quince stock and pear graft. The latter is rendered dwarf in its habits, bears very early, and perishes equally soon."

Now with such information in one of our standard pomological works, can we wonder that a prejudice should still exist against the quince as a stock for the pear? Can we wonder at the objection which too many yet urge against its introduction into their gardens in consequence of its brief existence?

But the growth of the pear upon the quince, though so extensively practised in France, has been confined until recently to a limited number of varieties, which have flourished with vigor and yielded abundant crops. All kinds, however, do not grow freely upon this stock; and with the accession of the hundreds of new varieties, which have been produced by the Belgian cultivators, in the eagerness of the French nurserymen to increase their stock and supply trees which would speedily fruit, they have overlooked this matter, and have indiscriminately worked all sorts upon the quince, without knowing or waiting to ascertain what the result of proper experiment would be. The consequence has been just what every well informed practical man would have seen, viz., that not more than one half, if even one quarter, of the new pears succeed upon the quince stock. The trees grow for a year or two, but with the first crop of fruit they sicken and eventually die.

A recent French writer has made the following statement, which has been translated from the *Annales* of the Central Society of France, by Mr. Meigs, and read by him before the last meeting of the Farmer's Club of New York:—

"I have long ago been struck with a theory to which no one seems to have paid attention, and that is, upwards of one hundred years ago, nurseries of fruit trees were established at Vitry, at Paris, at Orleans, at Antwerp, at Rouen, &c., &c.

All these nurseries have delivered, for setting out, many millions of pear trees, every year, to be planted in France only. Now if all these pear trees had prospered, France is not large enough to contain them, and still the nurseries every year sell millions of them. A pear tree on the quince

ought to last thirty to forty years, if properly taken care of, and those grafted on pear stocks should last from sixty to one hundred years when planted in proper soil. So that there must be something about this matter not well understood, seeing how few pear trees are now found in France.’

This statement at once conveys a great deal of meaning ; it shows that either unsuitable soil, bad cultivation, improper selection of stocks, or varieties not adapted to the quince, or perhaps each and all of these causes combined, have contributed to produce such a result.

The question arises, What are the proper kinds of quince, provided there is a difference in this respect ;—2d, What are the kinds that will succeed upon the quince ; and, 3d, What soil and locality is best suited to the quince. We have not space to consider all these propositions now, but shall take the second one, which to us seems the more important of the three, and one upon which there is the least information, though it is by far the most needed.

The short lived character of the pear on the quince has been, in some degree, attached to it from the grafting of unsuitable kinds upon that stock. Almost every variety will flourish tolerably well for a year or so ; but such as do not like the stock soon show signs of feebleness, and a few crops of fruit are generally fatal to them. They die off, and their death is attributed to the usual cause. Disappointed at the loss of his trees, the cultivator abandons the quince and grows only those on the pear, losing all the advantages which the former offers over the latter.

This being the case, how important it is to ascertain, by careful experiment, what the kinds are that will succeed upon the quince,—not a hasty trial of a year or two, but one of a series of years, say at least six or eight ; this we think would be satisfactory, and cultivators could then rely upon the character of the trees which they purchase. We hear many complaints already of the death of trees upon the quince ; and we are not surprised, for we see kinds advertised for sale upon that stock, which under the greatest care could not be made to flourish more than three or four years

with any success. Every year brings additional experience, and we have found it a constant source of annoyance and disappointment to have a fine row of trees broken up by the death of one here and another there, from the unsuitableness of the scion to the stock; and we have found it necessary to remove others of these new sorts, which have lingered along, breaking the uniformity of the row by their weak and stunted growth.

We have before stated, that of the large number of American pears which have been brought to notice but few would succeed upon the quince, and we are more and more convinced of the truth of this. We are not aware of *one* native pear, grafted upon the quince, which for beauty of growth, vigor, and abundance of fruit, can compare with the *Le Curé*, *Louise Bonne of Jersey*, &c., upon the same stock.

Such being the case, we must advise all cultivators to be cautious in the selection of pears on the quince. Take only such, especially when a quantity is to be planted, as are known to attain to a good age on that stock, and, unless a tree or so for trial, reject those whose introduction is altogether too recent to have had their growth satisfactorily tested.

The *Beurré Diel*, *Passe Colmar*, *Glout Morceau*, and many other fine sorts, grow with almost increased vigor upon the quince; these will answer every purpose until others shall be added to the list. But of our American varieties, particularly the *Dix*, *Heathcot*, *Tyson*, *Lawrence*, and indeed nearly all the others, take only those upon the pear stock.

We are now instituting a series of experiments to ascertain what varieties will succeed upon the quince; one or more of each of the new sorts are budded upon that stock, and we shall at a future time give the results in our pages.

At another opportunity we shall review the first and third propositions which we have mentioned, relative to the most suitable variety of quince for stocks, and the soil best adapted to their successful growth.

ART. II. *Principles and Practice of Grafting.*

From the Gardeners' Chronicle.

NO. VII. SQUARE STAMPED OUT SHIELD BUDDING, (fig. 42.) (*Grefte en écusson, de forme carrée; dite emportée pièce.*) *Operation.*—From a strong tree cut out a square patch, to be immediately thrown aside; raise from a strong branch another similarly shaped piece, but larger, and furnished with an eye; fit this piece into the place of the first; and it had also better be covered with a piece of paper, pierced with a hole for the eye, the whole being secured by a ligature. This mode, but little used, ought to be employed for trees with very thick bark and large eyes, such as walnut and mulberry trees. It may be performed in spring, at the particular time mentioned for budding with the pushing eye, or that for the dormant eye, in August, or later.



TUBULAR BUDDING. (*Grefte en tuyau dite en flûte.*)—For performing the operations of the modes of budding included in this series, we ought to choose the moment when the sap is in most abundant flow, in order that the barks of the two parts may be detached with the least possible effort. This disposition manifests itself at two periods: in the spring, when the ascending sap is in its greatest flow; and in August, when it is governed by a contrary disposition, known under the denomination of the descending sap. A knowledge of the use of these modes is very ancient. At the present day they are only employed for propagating a small number of fruit trees, principally such as chestnuts, walnuts and mulberries. They may be practised with success on vigorous branches destined to continue the leading shoots of young trees; or on some that are very large, when we would wish to make branches grow similar to those preceding them, for this mode cannot be successfully performed except the woods of both parts are young, or not exceeding one year old.



Fig. 42.
Square
stamped out
shield
budding.

Although the modes of budding in this series are not numerous, yet they present some slight differences, and each of them has received a number of vulgar names, such as pipe budding, *en chalumeau*; flute budding, *en flute ou fleau-teau*; whistle budding, *en sifflet*; ring budding, *en anneau*; horn budding, *en cornuchet*; cannon budding, *en canon*; tubular budding, *en tuyau*. The last name appears to me the most analogous to these modes of budding, inasmuch as they all have this form before being fitted on their stocks.

Of all these I shall only speak of those that are the most in use, and in demonstrating the best of each, I shall mention but two,—the first, tubular budding, with the pushing eye; the second, tubular budding, with dormant eyes; and, such as they are described, they ought to be preferred for propagating the few plants for which they are suitable.

TUBULAR BUDDING WITH SHOOTING EYES, (fig. 43.) (*Grefe*

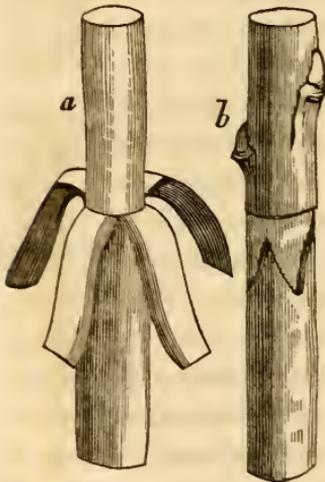


Fig. 43. Tubular budding with shooting eyes.

en tuyau à œil poussant. Operation.—In spring, when the bark of the stocks, and that of the shoots affording the buds can be easily detached, the branches with the latter are cut off from their parent tree, and immediately wrapped at full length in a moist cloth, and in this they may be kept four days; but it must be better if they are not cut till within a short time before the buds are taken off, and these ought to be very soon put on.

Before attempting to remove the bark with the buds from the branch or shoot, we ought to cut off all angular parts above the place where the removal is intended, and the same as regards the stock; then at the summit of the reserved part of the latter we make three or four longitudinal incisions in the bark, in order to separate it the more easily, as is represented by letter *a*. Then, from among the shoots or branches bearing buds of the sort intended to be worked, we choose al-

ways one a little stronger than the stock, and we trace on it two circles which mark the length of the tube of bark, on which there should be at least one good eye, and two when they are not widely apart; see letter *b*.

This part should then be held in the hand during one or two minutes, in order to warm and expand the bark, which will consequently be more easily detached from the alburnum by a strong twist. This tube should be immediately transferred to the denuded part of the stock; but this being smaller, we strip down the bark till the tube in descending fits tight, all its interior part being then in contact with the alburnum of the stock. Thus adapted, we sometimes bring up the strips of bark around the tube, to protect it from the too great contact of air. At other times, and more generally, the loose bark is cut off; but in this case it is necessary to pare down the naked part of the stock above the tube into thin strips, so as they may form a fringe to protect the parts operated upon from air and water.

TUBULAR BUDDING WITH DORMANT EYES, (fig. 44.) (*Grefte en tuyau à œil dormant.*)—This is practised exclusively during the month of August, with wood produced by the spring sap. The part from which the buds are taken ought to be as thick as possible; and as soon as it is separated from the parent tree, we cut off the leaves, preserving a small portion of their petioles; then we should adopt means to raise the buds. This operation differs not from the preceding, except in slitting the bark longitudinally, laying the tube open through its whole length, and thus giving the facility of extracting it from all obstructing or adherent parts. This done we present it to the stock destined to receive it, and of which we preserve the top; the lower part of it should be of the same thickness as the tube of bark to be applied to it. From this part we remove a tube of bark of the same dimensions as the other, by which it is immediately replaced, and so as the edges may everywhere coincide; then it is kept in its place by a ligature, which had better be re-



Fig. 44.
Tubular
budding
with dor-
mant eyes.

moved before winter. We defer cutting off the head of the stock till spring, in order that the budded part may partake of the growth. This mode, difficult to perform, is only used for propagating some delicate trees, of which the barks are not easily raised in spring, and of which the descending sap is absolutely necessary for the success of buds applied to them.

I here finish the description of the few modes of inarching, grafting and budding, which I consider of indispensable utility to amateur proprietors. This small collection will, I trust, supply for all that I have rejected, the greater part of which are minute, and of which the descriptions would be tedious and uninteresting to my readers.

ART. III. *Market Gardening around London.*

By J. CUTHILL.

CABBAGES.—These being general favorites with the public, their cultivation is extensively carried out by market-gardeners. Seed for the general crop of spring cabbages is sown between the 25th of August and the 1st of September, in in beds 5 feet wide, which collectively occupy several acres. Mr. Fitch, of Fulham, generally sows about 8 acres. When the plants are up, hoers are sent over the beds with 3-inch hoes; the plants are thinned out, and at the same time all deformed ones are removed. No particular time is set apart for transplanting; this entirely depends upon the season, and how other crops are got off the grounds. Last year cabbage planting commenced about the 25th of October; the plants were then very large, and as the ground is dunged and trenched the planters follow the trenchers. I have frequently seen as many as 30 workmen upon one piece of ground, with their foreman walking along the line, in order to see that "every man did his duty," and it is his place to move the measuring sticks; for every man had his 12 feet measured

out for him down the whole piece. The spades in use in market gardens are 12 inches long by 9 inches broad, and the work is performed by them in a masterly style. Land for cabbages is heavily manured; a two-horse load is emptied down (as if it were a barrowful) for every 30 square feet. As soon as a four or five acre piece of ground is ready for planting, men with lines are put to work on it. The first line is trod out, and after it the rest 2 feet apart; the lines are then shifted crossways 2 feet distant, but this time the men only tread in the angle of the previously made line, so that the main crop stands 2 feet plant from plant; but, in case of a runaway, as well as to help to pay, a middle row is generally introduced; this row is, however, cleared off for coleworts during this winter. I may mention that the existence of slugs is almost unknown in well managed market gardens; their disappearance is owing to the double trenching which is continually kept up in such gardens. Immediately after planting, hoes are sent through, to loosen the ground, and at all other favourable opportunities during winter and spring the earth is stirred and aerated; but the plants are never moulded up—a bad practice for almost any crop. Under the above system of treatment most delicious cabbages are produced.

CAULIFLOWERS.—The seed of spring cauliflowers is generally sown about the 20th of September in open beds. Towards November, when the weather is beginning to get cold, frames and hooped beds are got ready in light rich land. The plants are pricked out, not more than 4 inches apart each way; during the winter they are kept dry; no rain is allowed to fall upon them; but whenever practicable plenty of air is given them: frost has but little effect on them under hoops; but when excluded long from air, and kept in darkness, they sometimes suffer from damp to a considerable extent. They are planted out in the richest and earliest ground in February, or the beginning of March. I have known one grower to save nearly all his cauliflowers for seed, instead of sending them to market. In this way he has secured nearly a ton of seed from large plantations of many thousands.

When the cauliflower is permitted to seed the whole of the centre portion or flower is cut out except a rim to run up for seed. If this is not done the mass of flower is so great, that unless a very fine season occurs the seed will not ripen.

CELERY.—For the first crop this is sown early in February ; and in March and April for late crops. The first is sown either in a frame or under a hooped roof, with hot dung under it. Celery generally succeeds cauliflowers, cabbages, or lettuces. The system is to dig out a trench two spades deep, banking the mould up on either side, then to fill in a foot of the strongest manure, such as cow-dung, and to cover this with 3 or 4 inches of mould for planting in ; if the ground is very rich half the quantity of manure is applied, and it is dug in. The rows are generally from 4 to 6 feet apart, the plants are then taken from the seed-bed, and planted root and head entire—not trimmed in, a plan which ought to be discontinued in everything. The plants are placed about 8 inches apart, the intermediate ground being planted with coleworts, lettuce, or any other light crops which are likely to be off before the celery wants moulding up ; but market-gardeners do not commence blanching until the plants are about 18 inches high, as it prevents rain and air from acting on the roots. The sort of celery now grown for market is entirely changed ; solid celery is not used, but a much more spongy tall kind, which is ready for market in half the time the red solid (such as they grew 20 years ago, or what gentlemen's gardeners now grow) occupied, but the latter is by far the best. Market-gardeners cultivate a pink kind (no white is grown) which, on account of the richness of the land, is brittle and tender, and grows rapidly ; but it would be much better flavoured if it had more time to blanch. The operation of earthing up is all performed by the spade, no hand earthing is employed. Parallel lines are stretched on either side of the row, 18 inches from the plants, and the mould is cut out of the alleys to form the blanching ridge. Late earthing up is effected in about three different times.

CARROTS.—The Early Horn is the only kind employed. It is sown in frames and hooped beds in November and Jan-

uary. The plants are thinned out to 4 inches apart. Long carrots for winter use are grown largely in the red sandy soil in the lower parts of Surrey as well as in Bedfordshire, &c.

EARLY TURNIPS.—The Early Stone or Dutch being in great demand in spring, various ways of producing it are practised, such as growing it in frames; but the best plan is to raise it like potatoes, in hooped beds, *i. e.*, in trenches dug out and filled with 2 feet of hot dung. Sow in February, hoop and cover with straw, and expose the plants daily; the quality of a turnip depends much upon quick growth and plenty of moisture. Late turnips are not cultivated upon the dear land about London, they generally come from 10 or 12 miles off. The reason why a farmer cannot raise turnips like a gardener is owing to the poverty of the land; so small a seed wants immediate and available nourishment the moment it vegetates. It is then able to grow away from the fly, and if the seed was mixed with Irish peat charcoal it would greatly assist in effecting this. Early and forced turnips fetch from 2*d.* to 3*d.* apiece in Covent Garden market.

ONIONS.—The ground for the main crop is dressed with strong dung, such as night-soil or cow-manure. The seed for this crop is sown in February or the 1st of March, in beds 5 feet wide, the soil from the alleys being thrown on to cover the seed. The beds are then raked, and a light wooden roller passed over them. When up, small two-inch hoes are sent through them, which is all the labour they receive, the ground being so clear of insects, owing to its being often turned over. Market gardeners seldom fail to obtain a good crop of onions. Where insects occur, however, a good dose of salt and soot sown with the crop will kill them. Another way of managing onions is to sow about the middle of August, to allow them to stand in beds all the winter, and to plant them out on well prepared land 4 inches apart in the rows, and 6 inches row from row. A third plan is to save all the smallest bulbs, and plant them out in February, the same distance apart as the last.

HORSE-RADISH.—The root is like that of seakale, as respects propagation; the whole roots are thickly studded over

with eyes, and in order to make a new plantation all that is needed is to plant small pieces of them, or the tops cut off, in the bottom of a trench 1 foot apart each way, and about 15 inches deep. Horse-radish is generally planted in February. When it comes up all the weakest shoots are pulled up, leaving only one; and should any more make their appearance afterwards, they are destroyed by the hoe. When taking up time arrives in autumn they are trenched up, cutting them down to about a foot or more with the spade. They are knifed after the mould is moved. The roots are sorted into best and second-best. The best are tied into bundles of 12 heads or more for market; the ground is then well manured with rotten cowdung, and the roots are again left to come up for another year's crop. The best ground for horse-radish is the "Jerusalem level" between London-bridge and Greenwich, and some parts of Battersea, where the river Thames, in days of yore, had thrown up a deep deposit. This ground also produces the best seakale; hot dug ground or clay renders it hard and indigestible.

WINTER RADISHES.—These are sown from the first to the last week in December, choosing as warm ground for the purpose as possible; but acres of them may be seen in very exposed places. The ground being prepared the seed is sown broadcast. The alleys are marked out, and the mould from them is thrown over the seed. A wooden rake is then used to make all level; no iron rakes are employed in market gardens. After sowing, straw which has been previously shaken out of the London stable manure, is put over the beds 2 or 3 inches in thickness. When the plants come up, which depends upon the winter, the straw is removed every day and put on every night until all danger from frost is past; it takes 5° to hurt a radish after it is half-grown. When off, the ground is again dug, for French beans, or vegetable marrows, &c.

LEEKS.—These are sown in February or early in March, in rich ground. When the plants are strong, and about 10 inches high, they are planted or dropped into holes 8 inches deep, made by the dibber. After they are planted, hoes are

sent through them, to loosen the ground. In this operation mould drops down upon the roots, and the next hoeing fills the holes up loosely, which is what is wanted, for the soil must not be pressed tightly round the stem, as that would prevent its thickening.

WHITE COS LETTUCE.—This variety is grown by the million, and is highly esteemed by every body. The seed is sown from the 10th to the middle of October, in frames, which are filled with soil to within 6 inches of the top, giving a slope of one foot in four, the length of the lights, which always face the north. As soon as the seeds are sown the sashes are removed, and a man is placed in this department, to keep off the sparrows, give air, and shut up in case of rain; the great secret being to keep them as dry as possible, and to let them have all the air they can get. They are planted out in February, or early in March, in rich well trenched ground, (after celery,) one foot apart each way. Gentlemen's gardeners buy the same seed, but owing to their mismanagement during winter, and the poor state of the ground, they cannot grow such fine lettuces as the market gardener. Some of the latter are, however, too greedy in regard to crops; for instance, they have often three crops in the ground all coming forward one after the other; but the best cultivators do not do this; it tramples the ground, and does not give any crop fair play. The rapid growth of a lettuce depends much upon hoeing or stirring the soil. When well grown no tying is required; but badly managed plants have to be tied up a fortnight before they are sent to market.

RIDGE CUCUMBERS.—I have seen 14 acres of these in one man's ground; they are germinated under glass, hardened off, and planted out 6 feet asunder, and 10 feet row from row; hand-glasses are put over them. When they begin to grow, the ground is well mulched with straw, to keep the earth moist and the fruit clean. Gherkins are sown in the open air at once, in well prepared ground, at the above distances; and I have known one party to cut in one day 200,000 fruit, which were all bespoken by oil merchants.

Ever since the commencement of the potato disease, however, gherkins will not grow round London.

SCARLET RUNNERS.—These are very often sown among lettuces, 6 feet apart, about the first of April; but by far the best plan is to sow in beds thickly, and transplant by means of the dibber. No plant lifts better, and the moving makes them show flower much sooner. The usual practice is to take the heads off all the plants, leaving them a foot high, and to keep topping all the summer, which induces them to bear heavy crops; but the way of getting them to bear earliest is to save the roots in autumn, pack them away like dahlia roots, and to transplant them again in March, 6 inches root from root, in rows 5 feet apart. It should be borne in mind, that if beans are left to ripen, the roots will not be near so strong as they otherwise would be.

FRENCH BEANS.—The best are the Negro, on account of the beans being all green, and not marked or blotched like some others. They are also all one breadth, very narrow and handsome, and they are very dwarf and first rate bearers; they are generally sown amongst lettuces, cauliflowers, &c., to succeed the standing crop; but the best way is to give them a piece of ground to themselves. The French bean transplants nearly as well as the Scarlet runner; therefore it might be treated in the same manner; they would also come in much earlier and grow less robust. The crop would not be quite so heavy; but earliness is everything for the London market.

PARSLEY.—The main winter crop is sown in April and May, and thinned out to 6 inches asunder, and a foot apart in the row. In picking, all the large or oldest portions are removed first, the head is never cut off at once, but not one bit is allowed to pass perfection. Parsley pays well for the attention it receives.

ART. IV. *Pomological Gossip.*

NEW PEARS.—The last two years, it is well known to most, if not all our readers, were rather disastrous ones to the pear cultivators of this neighborhood. In 1849 there was scarcely any fruit, and in 1850 the quantity was but little greater, with the addition of being poorer, as scanty as the crop was. The Flemish Beauty, and many other well known pears which have never failed before, were last season almost as blighted as a St. Michael. This year the crop, though light, is, notwithstanding, far greater than the two previous ones, with the promise, thus far, of being greatly superior. Indeed, we may say, that what there is, was never fairer or more perfect; we have scarcely seen a cracked or blighted fruit.

This better state of the crop has already begun to show its good effects, in enabling amateur and professional cultivators to present specimens of some of the new sorts of pears; and the exhibitions of summer varieties have embraced among others two, which will undoubtedly be valuable additions to our collections. These are as follows:—

Beurré Giffart, a new pear, ripening about the 25th of August. In general form, size and color, it very nearly resembles the St. Ghislain, but has rather more color than that variety, and on this account is a very beautiful fruit. The flesh is melting and juicy, and the flavor rich and spicy, between the Rostiezer and St. Ghislain. We think it will prove, on further trial, to be a fine fruit. It should be gathered from the tree before fully ripe.

Suprême de Quimper.—This is another summer pear, which fruited in our collection this year; we believe for the first time in the country. It is of good size, somewhat peculiar form, and certainly one of the most beautiful of pears. It is roundish in shape, very obtuse at the base, with a short and thick stem; the skin is of a lemon yellow when mature, and deeply mottled and dotted with bright vermilion on the sunny side. The flesh is rather coarse, but full of a rich,

sugary, melting juice. It is decidedly the best summer pear which ripens between the Doyenné d'Ete and the Rostiezer. The tree appears to be an abundant bearer, and the fruit, like the Beurré Giffart, must be gathered while yet apparently green; for we found that those left upon the tree till they became yellow, lost much of their juiciness and flavor.

STRAWBERRIES.—In our July number we gave some account of the exhibition of strawberries by the Genesee Valley Horticultural Society; and in the last number of the *Genesee Farmer* we find the following notice of Ellwanger & Barry's new seedlings, probably by Mr. Ellwanger, who has charge of the horticultural department while Mr. Barry is absent:—

Genesee, (E. & B.) This is decidedly the finest looking berry I ever saw; of good size and flavor.

Monroe Scarlet, (E. & B.,) is another desirable variety, of larger size, and more round than the Early Scarlet, [Early Virginia;] very productive, and ripening about the same time as the Early Scarlet.

Two new strawberries have been raised in England, which are highly spoken of; one of them was produced by Mr. Myatt, the most successful of all the cultivators who have introduced new kinds. He has not, we believe, yet given a name to this new one, but we find the following editorial account of it in the *Gardener's Journal*:—

Myatt's Seedling.—"Your new strawberry is the largest we have seen, the sixteen sent to us weighing exactly *one and a half pounds*. The flavor for so large a fruit is very good indeed,—not certainly equal to some of the smaller growing sorts, but the color and size of the fruit are beyond comparison. It appears to be a prolific bearer,—a single truss of unripe fruit of all sizes numbers fifteen berries."

Trollope's Victoria.—This is a new variety from the same person who raised Princess Alice Maude. Mr. Trollope advertises his seedling as possessing the following qualities:—

"The Seedling Victoria combines qualities which no other kind at present in cultivation does possess; being very early, a dwarf robust grower and free bearer, throwing strong

trusses of fruit, (above the foliage,) which is of large size, globular form and good color, and possesses such a flavor as no other early strawberry can boast of." To this statement several cultivators affix their names as corroborating its qualities. Unless better flavored than the Alice Maude it would be a rather inferior fruit.

JOSLING'S ST. ALBAN'S GRAPE.—This new and reputed *seedling* variety is now in fruit in our vinery, and it has proved to be, just what we stated it would, when the account of it was first published by Mr. Thompson, the Chasselas Musque, (or Muscat Blanc Hatif.) It cracks in the same manner of the Chasselas Musque, and in no one thing, foliage, size of the bunch or berry, color, shape, or anything else, can the least difference be detected; thus showing conclusively that Mr. Thompson's acquaintance with grapes is very superficial, and his account of them not to be relied upon. It was wholly upon his opinion that the pretended raiser of the variety sold upwards of a thousand vines at *one pound sterling* (\$5 each, the price we paid for two.)

The same game is now being played over, we think, in another new grape now advertised as

JUDSON'S RICHMOND VILLA BLACK HAMBURGH.—It is thus described:—"The foliage is more deeply serrated and the wood shorter jointed than the Black Hamburgh; the berries are oval and rather elongated, and are remarkable for a fine bloom, not unlike that of an Orleans plum; when fully ripe are a fine deep black, having a fine rich flavor and very juicy. It colors full ten days earlier than the Black Hamburgh, and being a most abundant bearer and good setter, will prove a most desirable kind for pot culture. One very remarkable property this grape possesses, which much enhances its value, and makes it so much superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, 'vinegar berries;' after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good."

Now any person, familiar with grapes, will at once see that the above description applies, in every particular, to Wilmot's

No. 16, Black Hamburg. It could not be described more accurately by the most skilful pomologist; and to our mind there can be no doubt of the identity of the two. Nothing is said of its origin, or whether it is a seedling. It is advertised at *one guinea* a plant.

ART. V. *On the Culture of the Neapolitan Violet, in Pots.*
By the EDITOR.

FEW flowers are more admired than the double violet, and none are more valuable for their delightful odor. They bloom, too, at a season when flowers are always a rarity, and their pale blue, delicately perfumed, blossoms, are indispensable in a winter bouquet. They are also of the most simple cultivation, and with a little care may be grown, merely with the aid of a common sash and frame, to the highest perfection.

They may be cultivated either in frames planted directly in the soil, or in pots, the former of which method is as well when they are only wanted for the cut flowers; but when they are wanted to decorate the parlor or drawing room, and exhale their sweet odor, they are far better in pots; the plants may then be brought in successively as they show their flowers, and may be kept constantly in bloom from January to May.

September is the proper season for potting the plants, providing that they have been duly managed through the summer. We begin with the potting: For this purpose a good stock of rich turfy loam, which has become well decomposed by turning over during the summer, should be mixed with about an equal quantity of thoroughly rotten dung; that from an old hot bed will answer well, or any other equally decomposed. Do not sift or riddle this compost, but let the whole be evenly mixed, and it is then ready for use.

Next select a suitable number of pots about seven inches in diameter, and a sufficiency of good potsherds for drainage,

as well as a small quantity of ground bones. When all is ready commence taking up the plants; select only the strongest and best, and divest them of all superfluous runners which may have been made. Put only one in each pot, unless weak, when three may be put in. Use a small handful of bones over the drainage, in which the roots may ramble and get food. Finish the operation with a good watering, and they are then ready for their winter quarters.

For this purpose select a good hot-bed frame, or if none is at hand, make a common frame of boards. Make choice of a good dry, warm, sheltered spot, where the sun's rays shine a larger part of the day. Place the frame upon the ground, and proceed to arrange the plants, placing the strongest at the back, and finishing off with the weaker ones in front. Set the pots about three inches apart each way, if the plants are large, and when all arranged fill in between each with old tan, even with the rims of the pots. Put on the sashes, sprinkle slightly, and shade for a few days till the plants have established themselves, when the lights may be removed in all good weather. In this way they are to remain all winter. On the approach of cool weather the frames should be well banked up with sods, earth, leaves or manure, and the arrangements are completed for the winter. When the weather is severe the lights should be covered with thick straw mats to prevent freezing, for although the plants will stand several degrees of frost they are susceptible to frequent changes. In stormy or snowy weather they will need more protection, and we have found a loose covering of straw or hay to be the most effectual when the thermometer falls below zero. A safe rule is to keep them as cool as possible, but not to freeze them.

In this way the plants remain until they are wanted for the greenhouse, conservatory or parlor. They will be full of flower-buds, and a few pots taken out of the frame, and carried to the above places, will display their flowers to great advantage, throwing up large blossoms on long stems, and perfuming the house with their refreshing odor. All through the months of January, February and March, to May, they will afford a fine show of flowers.

The plants should be looked over attentively to see that there are no dead or dying leaves, which often injure them. Guano, rather weak, may be given occasionally and the plants will acquire a deep green hue.

In this way violets succeed admirably and yield a quantity of flowers almost beyond calculation. We have seen a statement in the *Transactions* of the London Horticultural Society, by Mr. Oldacre, the gardener of the late Sir Jos. Banks, that three hundred pots of plants yielded, from January to June, upwards of *one thousand dozen flowers*.

The English violet may be cultivated in the same way. By many this is preferred to Neapolitan. But its flower stems are shorter, and though highly fragrant it is not so suitable for bouquets as the latter. So little trouble is there in cultivating these delightful plants, that we are surprised they are not more extensively grown. We hope our article will induce all lovers of fragrant plants to make the attempt.

The preparatory treatment of the plants, previous to potting, is as follows:—After they have all done blooming in May, a half shady, rather moist situation should be selected, in which they are to be set out. First, mark out the bed, which may be four feet wide and any length desired. Add an inch or two of well decomposed hot-bed manure or old cow-dung, and dig the whole well over. Then take the plants, turn them out of the pots, and cutting off all loose leaves and runners, divide them and set them out about four inches apart each way. Finish with a good watering to settle the earth around the roots, and if an old frame is at hand it may be put over them and the lights put on, carefully shaded during the day, removing the covering at night so that they may have the benefit of the dews. They will soon take hold of the ground, when the frame may be removed, and no further care is necessary, only to water the plants in very dry weather.

A larger number of plants should always be set out than will be wanted, so as to have a selection at the time of potting.

If these directions are followed an abundant bloom may be obtained.

ART. VI. *Floricultural and Botanical Notices of New and Beautiful Plants figured in Foreign Periodicals; with descriptions of those recently introduced to, or originated in, American Gardens.*

ALO'NA CÆLESTIS. This beautiful plant, described in a former volume, (XI, p. 32,) has been in our collection two or three years, without showing a disposition to flower, or at least so sparingly as to render it of little value. This year we determined to try it as a bedding-out plant, and to our great surprise it has grown rapidly and flowered abundantly up to the present time, and will undoubtedly continue to display its gay blue and white corols until overtaken by frost. A good way to have it in perfection is to raise young plants in September, in the same manner as heliotropes, scarlet geraniums, &c., and after wintering in the greenhouse, to bed them out in May; as the plants advance in growth the shoots should be pegged down the same as verbenas. So treated they soon cover the ground with their heathlike foliage, and when profusely laden with their flowers form a beautiful mass of azure and silver, set in a frosty net work.

APHELANDRA CRISTA'TA. This gorgeous stove plant has displayed its magnificent flowers the last month in our collection, and a more brilliant display cannot well be imagined. The specimen was about three feet high, with two branches from the main stem, and each branch was terminated with two of its vivid scarlet heads of blossoms. It is of simple management, and may be easily cultivated where there is a good greenhouse, by wintering it in the warmest part, keeping it rather dry until it shows its flowers, when it should be liberally watered.

SEEDLING JAPAN LILIES. We have had a rich treat in the flowering of our collection of seedling Japan lilies. Nothing indeed can excel this tribe in the depth and brilliancy of colors of the dark colored varieties, or the delicacy and richness of the lighter ones. These seedlings were raised from *L. punctatum* and *speciosum* and *album*, impregnated with each other, and also with *canadense*, *chalcedonicum*, *super-*

bum, &c., and a great variety of tints and some variation of form has been the result ; some being lessened in beauty by the union, and others greatly enhanced in their attractions. We shall, in a future article, give some account of these seedlings, and the results to be expected from cross fertilization of these varieties and species.

LANTANA LILACINA. All the lantanas are elegant plants, and extremely valuable on account of their easy cultivation and the long time they continue in bloom. We have had in our collection some six or eight species as follows:—*L. cammàra*, *purpurea*, *aurantiaca*, *Sellowii*, and one or two others raised from seeds ; recently we have added *L. lilacina*, a new kind from France, with pale lilac flowers, changing like *cammàra*. It is a free grower, of neat bushy habit, and blooms abundantly planted out in the open border.

PETUNIA ENCHANTRESS. This new petunia is one of the largest we have seen, good blooms measuring four inches in diameter. The color is not remarkable, being of a pale pink, slightly pencilled, with a darker throat. In size it is very remarkable, and as the habit is compact, and the plant a most abundant bloomer, it will form a fine addition to this showy family of plants. Eclipse is another fine one, something in the way of Hebe, but rather better in its colors ; both are kinds which should be in every collection.

THE VICTORIA LILY. We learn from our Philadelphia correspondents, that the splendid new *Victòria règia* will probably bloom in the collection of the president of the Horticultural Society the present month, if it is not already in flower. The plants were raised from seeds sent to the Pennsylvania Horticultural Society, and Mr. Cope has taken especial pains to fit up a house on purpose to bloom it, thus affording amateurs an opportunity to see this queen of the water lilies in all its native beauty.

In England, where it has bloomed in several collections, and almost in the open air, it has been proved to be of easy cultivation, the only thing necessary being a tank of water of moderate depth, (about $3\frac{1}{2}$ feet,) and kept up to a temperature of 75° or 80° . Messrs. Weeks & Co., horticultural

architects, have flowered it in great perfection, at their garden in Chelsea, in an open tank, the water in which was warmed by hot water pipes running through it. The plant was set out on the third of March, a frame was placed over it till it was well established, when it was allowed full exposure in fine weather. The plant continued to grow rapidly, and present a healthy and robust appearance, and on the sixteenth of June the first flower expanded. As it may be so easily grown we hope to see the experiment tried by some of our amateur cultivators around Boston. A house of ample dimensions to grow it successfully might be erected for a few hundred dollars, and the magnificence of this most remarkable of plants would well repay all the outlay. The leaves are *four feet* in diameter, and the flowers *nine inches* to a *foot* across, and though only opening twice on successive evenings they are produced abundantly throughout the season. The color of the flower is white and pink, and it exhales a rich and powerful fragrance even before fully expanded.

GERANIUM LUCIA ROSEA. All who admire the scarlet geranium as a summer flowering plant,—and who does not?—will know how to appreciate the introduction of this new member of this brilliant tribe, both on the score of novelty as well as variety. The flowers are of a clear pale rose, and as they are displayed in the same abundant manner as the scarlet, and have the same habit and foliage, it will form a fine companion to the latter, its masses of rosy hued corols contrasting gayly with the glittering tints of Tom Thumb and other varieties.

158. CUPHEA VERTICILLATA H. B. K. VERTICILLATE
LEAVED CUPHEA. (*Lythariæ.*) Peru.

A greenhouse plant; growing two feet high; with purple flowers; appearing all summer; increased by cuttings and seeds; cultivated in light rich soil. *Flore des Serres*, 1850, pl. 540.

A new and pretty species of the interesting tribe of cupheas, recently introduced from Peru. It is similar in habit to the platycéntra and other species, and the flowers are of a rich purple tint. The leaves are verticillate, with a solitary bloom from the base of each whorl. Its culture is the same as the others. (*Flore des Serres*, May.)

159. PASSIFLO'RA FILAMENTO'SA Cav. THREADY PASSION FLOWER. (*Passiflora*.)

A greenhouse climber; growing ten feet high; with red and wild flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Flore des Serres*, 1850, pl. 543.

A new and beautiful species of the passion flower, with large bluish flowers, exceedingly showy, and well worthy a place in every collection. It requires the same management as the other species, and blooms during spring and summer. (*Flore des Serres*. May.)

160. TRIOMPHE DE VALENCIENNES ROSE. Garden Hybrid.

A beautiful striped hybrid perpetual rose, said to be a sport of the La Reine, obtained in 1845 by M. Baudry, of Auran-ches. The petals are of a pale rose, more or less striped with dark red, and shaded with violet. It is the beautiful blending of tints which constitutes its great beauty. In other respects it is like La Reine in habit, size, form, &c. It is known in some collections under the name of Madame Campbell d'Islay. (*Flore des Serres*. May.)

161. FU'CHSIA CORYMBIFLO'RA var. ALBA Salter. WHITE CO-
RYMB-FLOWERED FUCHSIA. Garden variety.

Precisely like *Fuchsia corymbiflora*, except in its flowers, the sepals of which are pure white, and the corolla vermilion red, the contrast between the two colors producing a charming effect. This variety was produced by some of the French florists, and was introduced into English collections by M. Salter, of Versailles. It is a magnificent addition to this beautiful family.

Plants in our collection are growing rapidly, and we soon hope to have the gratification of seeing them in bloom. Its culture is the same as that of *corymbiflora*. (*Flore des Serres*. May.)

162. CLE'MATIS GRAVE'OLENS Lindl. SWEET SCENTED CLE-
MATIS. (*Ranunculaceæ*.) Tartary.

A hardy climbing plant; growing ten feet high; with yellow flowers; appearing in summer; increased by layers and seeds; cultivated in good rich soil. *Flore des Serres*, 1850, pl. 548.

A pretty species of the Clematis from Chinese Tartary, where it was found in the snowy passes, at an elevation of

12,000 feet. The leaves are small, three lobed, with long straggling footstalks, and the flowers are solitary on the terminal branches.

“The grand dame,” says the writer, “of all the clematises, if we should say, would be *Clématis azúrea*; the country lass, we almost suggest, the grisette, is the *Clematis graveol*,—paltry surname! Ah! Monsieur Lindley, for a gallant man like you it is wrong to betray the defects of a poor stranger, who humbly demands a small corner in our gardens.”

It grows freely and flowers abundantly all summer. (*Flore des Serres*. May.)

163. *CALLIA'NDRA BRE'VIPES* Benth. SHORT-PETALLED CALLIANDRA. (*Leguminòsæ*.) Montevideo.

A greenhouse plant; growing three feet high; with crimson flowers; appearing in summer; increased by cuttings; cultivated in leaf-mould, loam and sand. *Flore des Serres*, 1851, pl. 549.

Calliandra constitutes a natural genus, recently defined by Mr. Bentham in his excellent work upon the *Mimòsæ*. It embraces more than sixty species, which are mostly found in California, and in the region of the river La Platte. In habit of growth and foliage it resembles the *Inga pulcherrima*, (now *Calliandra*.) The flowers are of a brilliant crimson, and are disposed in clusters along the slender shoots. It was found in the vicinity of Montevideo by Mr. Tweedie, and plants were raised from seeds sent to M. Van Houtte in 1842. (*Flore des Serres*. June.)

164. *ABU'TILON INSI'GNE* Planch. SUPERB ABUTILON. (*Malvæcæ*.) New Grenada.

A greenhouse plant; growing six feet high; with crimson flowers; appearing all summer; increased by cuttings; grown in rich, loamy soil. *Flore des Serres*, 1851, pl. 551.

A new and very superb variety of the well known and admired *Abutilon*, quite different in color from either of the three which we now possess in our collections. The flowers have a nearly white ground, elegantly striped and shaded with deep rosy crimson. Here we have tints which are always pleasing, and which harmonize with other colors far better than the dull buff and brownish yellow of the *A. venosum*, *Bedfordianum*, &c. Like the latter species the leaves

of the insigne are very large, of the same form, and the flowers are disposed in axillary clusters of six or eight each.

This species has been recently introduced by Mr. Linden, whose collectors found it in the cold regions of the Andes of New Grenada. It succeeds perfectly in the open ground, in the open air, during the summer season, and should be wintered in the cold greenhouse. Under these conditions it has flowered abundantly at Mr. Linden's establishment, and it is recommended as one of the most charming novelties of the day. (*Flore des Serres*. June.)

165. COLU'MNEA AURANTI'ACA Dne. ORANGE COLORED COLU'MNEA. (*Gesneraceæ*.) South America.

A stove plant; growing two feet high; with orange colored flowers; appearing in summer; increased by cuttings; cultivated in leaf mould, peat and sand. *Flore des Serres*, 1850, pl. 552.

C. Schneidiàna, a well known species, will convey some idea of this plant, but the present subject is far handsomer; the flowers are of a deep orange, and they are borne on long and graceful stems, at the axil of every leaf. It was found by Mr. Linden on the Andes of Merida, at an altitude of 9000 feet, and was introduced by him to Belgium, from whence it has been disseminated. It is a fine addition to our summer flowering greenhouse plants. (*Flore des Serres*. June.)

ART. VII. Notes on Gardens and Nurseries.

Residence of George Leland, Waltham.—A pleasant morning, in the latter part of July, reminded us of a visit which we had promised ourselves sometime since, to the garden of Mr. Leland, of Waltham. The cars on the Fitchburg Road set us down within a few minutes' walk of his fine place, which is situated just south of the road, on Newton street, leading to Newton village. It comprises some nine or ten acres, only a few of which are devoted to gardening purposes, the remainder being occupied for farming products. The grounds are just upon the edge of a declivity, and the

flower and kitchen garden are reached by descending a flight of steps from the garden front of the house.

The whole grounds have been laid out and planted, and the house built, since 1847 ; but from the thorough manner in which the work was done, the trees present the appearance of having been growing much longer. The main entrance to the house is on the south or garden front. The lawn is well grouped and diversified with trees and shrubs, and is about half an acre in extent. Among the groups we noticed two, planted with rhododendrons and azaleas, which have a fine appearance now, and which must have been very showy when these brilliant shrubs were in bloom.

Descending the steps we reach the garden, which covers an extent of two or more acres in the form of a parallelogram, the end next Newton street. The slope is laid out in terraces on the right of the steps, and on the left is located the range of forcing houses, which is 104 feet long, comprising a centre and two wings, the former the greenhouse, twenty-five feet, and the latter vineries, forty feet each. A main walk extends around the garden, with alleys leading from one side to the other ; beyond the range of houses the bank is again terraced and planted with strawberries.

The houses are thoroughly built of the best materials, and have a fine appearance. The vines have only been planted four years, and were now bearing a fine crop, which was well ripened and colored. Mr. Burns, Mr. Leland's present gardener, is a successful cultivator of the grape, and the vines showed his judicious treatment.

In the border, in front of the house, Mr. Burns has made a splendid display of verbenas, featherfew, &c. We never saw finer grown plants ; the verbenas were one mass of bloom, and plants of *Defiance*, *St. Margaret*, &c., covered yards of ground. The border on the opposite side of the walk was planted with flowers of various sorts, backed with a fine row of hollyhocks, which are now becoming so general a favorite.

The dry season has been unfavorable to the pears, standing as they do on raised terraces, but some of the trees were

bearing full crops, particularly the St. Michael and Louise Bonne of Jersey, on the quince, which were very fine. The trees are yet young, but in a year or two they will produce a heavy crop. Among other things, we noticed twenty or thirty peach trees in pots, planted last year, and intended for forcing next. This plan of growing peaches is yearly attracting more attention, and, with the facility with which they are grown, we often wonder that any person who has a grapery, warm or cold, does not have a quantity of peaches in pots. The fruit is remarkably fine in this way,—finer, in fact, than can be obtained in any other,—for the trees are placed in the open air early in June, and have two months of the *hottest* season of the year to ripen the fruit, the thermometer often at 90° and upwards, a temperature which they cannot enjoy in September. Trees, properly managed, will produce from three to four dozen fine peaches each the third year, and continue to do so for some time.

The kitchen garden department was in the highest order; we have rarely seen finer cabbages, celery, beets, &c. This, of course, can only be done with the aid of manure; and of this article Mr. Burns is not sparing, for Mr. Leland, with his horses, cows and swine, produces a yearly stock of some hundred cords, which is applied to the farm and garden. This is, in fact, the true secret of good cultivation, as any one will see who reads Mr. Cuthill's papers on Market Gardening.

Mr. Leland's place was laid out by Mr. Cruikshanks, now in charge of the Malden Cemetery. The arrangement is excellent for the position of the ground, and Mr. Leland has spared no expense to have everything done in the best manner. Some alterations are now in progress, which will make it one of the neatest suburban residences in our vicinity.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

METHOD OF PRESERVING YOUNG FRUIT TREES FROM THE ATTACKS OF HARES AND RABBITS.—All lovers of gardens know by experience that hares and rabbits devour with great avidity the annual bark of young fruit trees, and particularly of dwarf apple trees, among which the most healthy and vigorous are always destroyed the first, in consequence of their bark being the most tender and savory. As soon as the ground is covered with snow, these animals, no longer finding anything in the fields on which they can browse, begin their depredations in the gardens. If they are numerous, and the fall of snow heavy, a few nights only are sufficient for them completely to ruin the most beautiful plantation, and to annihilate the result of many years of labor and care. Happily, nothing is more easy than to place these trees beyond the attacks of these marauders protected by law. The following is the plan I have adopted with complete success, during the last six or seven years. I mix about $4\frac{1}{2}$ pounds of quick-lime, in lumps, with $2\frac{1}{2}$ gallons of water, and add a few handfulls of soot, stirring the liquid until the two substances are intimately incorporated. I then take a handful of rye-straw and bind it on a stick to form a kind of brush, with which I grey-wash the trunk and branches of my trees from the ground to at least a yard above it; for, should the snow drift by the wind against the foot of the trees, the hares, by means of the inclined plane thus afforded them, would be able to attack the trees at a much greater height. The wash, applied hot, has also the advantage of preserving the bark of the trees in a state of perfect health, and preventing the increase of moss, which is often pernicious in its effect, and always very disagreeable to the eye. It is desirable that this preservative application should be made in dry weather, in order that the mixture on drying may adhere to the bark; for, should it rain at the time, or immediately afterwards, the mixture would be washed from the trees, and it would be necessary to re-commence the operation. If the mixture also is applied during a frost, there would be little chance of perfect success; as that part of the bark on which it would be laid would be thawed. If, however, through want of foresight, a frost sets in during the course of the operation, and it becomes urgent to complete it, we may do so with perfect success by choosing that moment of the day in which the sun strikes most strongly with his rays the trees on which we wish to operate. Three gallons of this wash are sufficient to secure two or three hundred dwarf trees from the ravages of hares; a result that may be obtained for a pennyworth of lime and the day's work of an active laborer. This plan is equally infallible for the preservation of grafts and all nursery collections. *From the French of the Baron Vander-Straeten, (in the Journal Agricole de Verviers.)—(Gard. Chron., 1851, p. 343.)*

TROUGH-GROWING GRAPE VINES.—Trough-growing is a modification

of pot-growing, but is a great improvement upon it; and we understand that it has attracted much attention from Mr. Assheton Smith's friends. In the first instance vines are struck from eyes and grown in pots as usual. Afterwards,

"When the buds are regularly broken, and each shoot advanced to the length of 6 inches, prepare to plant the vines in a trough, as shown in the plan. The advantage to be derived is immense, by securing to them all the benefit of a border, independent of giving every root and branch an equal temperature, which is so essential to promote their perfection. First place upon the laths forming the bottom of the trough, a layer of pieces of turf of about 3 inches square, to prevent the fine mould from being washed down; next put a layer of 2 or three inches deep of the following compost, viz., equal quantities of rich turfy loam and rotted manure from the farm-yard, with the addition of a little sand. Proceed to remove the vines from the pots by turning the ball upside down on the palm of the hand, having a convenient bench on which to rest the hand and ball whilst cautiously removing the crocks, and objectionable soil, or worms, and taking the utmost care in so doing not to injure the roots. When so prepared, place the ball on the surface of the soil in the bottom of the trough. Proceed with another vine, and so on till the whole are done, leaving a space of about 3 inches between the ball of each, to be filled up with the same compost as used under them. Cover the surface of the roots about 1 or 2 inches deep; the soil, previous to being put round the roots of the vines, must be warmed to the same temperature as the house. As soon as all are tied in their proper places, a good syringing will much assist them; but do not water at the roots for a few days, except it be absolutely necessary. If any water is given, let it be done by pouring it immediately on the balls.

"Before a week has expired after removing the vines into the troughs, they will begin to show the benefit they are deriving from the change. When sufficiently advanced, stop each shoot one joint beyond the fruit, and leave only one bunch to each, and from 8 to 12 to every vine, according to their strength. A heavier crop would deteriorate both from the size and color of the berries. A plentiful supply of water will now be necessary, which can be given abundantly without fear of injury from stagnation; provided the directions given for the formation of the trough have been strictly attended to." (*Gard. Chron.*, 1851, p. 327.)

BLOOMING OF THE VICTORIA LILY IN AN OPEN POND.—The Royal Water Lily has been fully exposed here in an open pond, night and day, for the last three weeks, and it is growing and flowering most satisfactorily, the total number of blossoms it has produced being sixteen. The leaves are four feet across, and perfectly healthy; but as yet they have exhibited little inclination to form rims; their whole surface prefers laying quite flat upon the water. A new leaf developes itself about every fourth day, and a flower every third day; the appearance of the plant would indicate a likelihood of its blooming for some considerable time yet to come. The water in the basin is kept at between 80° and 90°, and the boiler from which this heat is derived also warms five houses and two pits of moderate size. About two

dozen gold fish were introduced into the pond some short time ago, and they have since multiplied so abundantly that the water literally swarms with their young, which all present the fine color of their parents. Indeed so well do they succeed and breed in the warm water, that Mr. Weeks is of opinion they will ultimately almost pay the cost of heating it. We need hardly mention that this experiment points out another purpose to which waste steam might be employed both profitably and for pleasure. It is the Thames water in which the plant is growing at Chelsea, and we understand that it is the intention at present to widen the pond next year, and plant in it the various other kinds of tender Water Lilies. It may be worth notice, that the overflows of this tank are collected into a cistern, from which the tepid water can at all times be had for the purpose of watering plants with.—(*Gard. Chron.* 1851, p. 439.)

HINTS ON JUDGING PLANTS.—In judging plants, various things must be taken into consideration; not only the health and general appearance of a specimen, but also the excellence of individual perfection—qualities which appear insignificant when considered separately, but which, when viewed collectively, constitute perfection. Thus, supposing a plant had been beautifully grown, was of fine form, had short-jointed wood, and clean and healthy foliage, but had flowers in insufficient quantity, ill-formed or badly colored, or flowers insufficiently above the foliage, or with unusually long foot-stalks—these would be great defects, inasmuch as flowers being the end and aim of the cultivator, and the main object of attraction, it is indispensable that they be of the finest and most perfect form and color. However fine a plant may be, if it is deficient in flower, or the bloom is of bad quality, it is a defect; and, in like proportion, if a plant is ill-formed, or has bad foliage, that also is a defect; but if a plant is unhealthy, that is a decided disqualification; for as prizes are offered to reward skilful cultivation, if the exhibition shows the want of skill, that is a disqualifying point. A plant, to be perfect, must be of symmetrical form, short-jointed, and furnished with robust and healthy foliage from the base upwards. The form should not be formal, neither should the plants bear a rough and uncultivated appearance, but it must be graceful and easy in character, and while it bears the impress of art, must be sufficiently removed from formality to have some of the easy grace of nature about it. The bloom must be large and profusely produced, brilliant in color, finely formed, and if scented, rich in odor. At the time the plant is shown, sufficient bloom to present a uniform head should be expanded, and it should have a rich, crisp and glossy appearance. Cleanliness is a great point; consequently, every leaf must be free from dirt of any kind, and not an insect must be seen. Plants thus appointed, whether they be hard or soft, come from the tropics, or be denizens of a milder climate, will always please; and it matters not whether they be large or small, they all alike show the skill of the gardener, so long as they are sufficiently large to show some mark of cultivation since they left the nurseryman's store. It must be remembered that a plant may be large and finely formed, and yet not meritorious in point of management; for it may be a plant of very easy cultivation. For instance, the Chorozee-

ma, though admirable in its way, would not bear comparison with a plant of *C. triangularis* *augustifolia*, or *Henchmanni*, of the same or even smaller size; while a plant of *Burtonia conferta* or *violacea*, *Boronia serrulata* or *pinnati*, or *Gompholobium splendens*, not half the size, would be infinitely superior and more meritorious. Hence it is necessary that censors should be persons of experience and practically acquainted with the management of the plants they undertake to adjudicate upon. Plants also should harmonize in point of size, so that when grouped together they may look as if they came from the same place, and not as if they had fallen together by chance. We once saw a collection of splendid heaths, averaging from two to four feet in size, lose the first prize, through the gardener putting in a small but admirable plant of *Erica Sprengelii*; and only last year we saw a *Cytisus racemosus* five feet high, and *Hoya bella* about as many inches, shown in the same group. Such arrangements show bad taste, and ought to be publicly reprobated. It may perhaps so happen that several collections of plants may be so nearly equal in point of merit, as to render it difficult to say which is the best. In such a case it is the duty of the censors to examine the plants in each collection separately, both as to form and inflorescence; and then, if they were equal, the difficulty of cultivation would decide the point; for if one collection contained plants of more difficult management, that of course must have the first prize. In a few words, the leading principles to be observed in plant judging are: First, that the plants be clean, healthy, and finely formed. Second, that they be profusely covered with bloom, the individual flowers being finely formed, large, and finely colored. Third, that the plants be choice—novelty and moderate size being always superior to age and large size. Thus, if ten plants were competing, one introduced ten years back, and the other only two, and if each required the same skill in management, the new plant, if it had been well cultivated, would be the most meritorious, and should have the first prize.—(*Gard. Jour.*, 1851, p. 502.)

POIS GROS SUCRE' DE CROUX.—The horticulturists of Paris have obtained a new kind of late pea, which is at present greatly esteemed. It was introduced from Switzerland, by M. Croux, of Villejuif, Seine. According to a report upon it, by a special commission of the National Society of Horticulture of Paris, this new late pea, which they have named in compliment to its introducer, *Pois Sucré de Croux*, possesses in a high degree the valuable property of flowering and fruiting abundantly late in autumn, and until checked by frost. It is well known that other peas sown for a very late crop, are apt to push long stems which flower only at the tops, and produce badly filled pods. They are, moreover, very subject to mildew, and this, with even a short period of drought in August, renders their produce almost nothing. A new variety which appears to be free from all these disadvantages, must be considered an acquisition; and we therefore take the earliest opportunity of directing attention to it.—(*Gard. Chron.*, 1851, p. 519.)

GATHERING FRUIT.—The chief merit of the gardener, in this respect, [the

management of ripe fruit], is the supplying of the table with them in the utmost perfection; and the art of gathering, which is very little understood or thought of, is a very essential and material article. I have seen one common custom among gardeners, which is, to go out for fruit an hour before it is to be served at the table; and this they think very meritorious, because it will be fresh. I have seen also a contrary practice, which I shall explain, together with its reasons; but, first, in order to show its real use, this fact must be inserted. Two gentlemen, relations and neighbors, who had the same soil, and the same kind of trees, and those, to all appearance, managed in the same manner, found a vast difference always in their fruit; it was so great, that their company never failed to perceive it as well as themselves; and when it came at last to be explained, the whole cause was, that the gardener of him whose fruit was worst, gathered it just before it was wanted, and the other much earlier. This seems to contradict reason, freshness being esteemed the great article in the nicety of fruit; but it is only a seeming contradiction. Let any one examine the state of plants in general in summer, and he will find it this; as the great heat of the day comes on, their leaves begin to flag, and they droop more and more till the cool of the evening. The reason is, the great evaporation of their juices by the sun's heat: they grow flaccid from toward noon till near sunset, then, the heat is over and the dews refresh them: they continue recruiting and recovering during the whole night, and they are firm and lively in the morning. The case is the same in fruits, only it is not so easily perceived. At noon they are exhausted and flattened, and they are heated to the heart: all this renders them dead, and unpleasing. They begin to recruit towards the evening, as the leaves; and in the same manner are in the full perfection at early morning. One hour after sun-rise is the time for gathering them: this was the secret of the successful gardener, and this every one should practise. Let him take some fruit-baskets of open work, cover them with large leaves, and at seven in the morning go out to gather his fruit. When he has carefully chosen what is ripe, and laid it handsomely in the basket, let it be placed in a cool, but not damp room, till it is wanted.—(*Gard. Chron.* 1851, p. 439.)

ART. II. *Domestic Notices.*

EXHIBITIONS OF HORTICULTURAL SOCIETIES.—The present month all the principal horticultural and agricultural societies hold their annual exhibitions. It is to be regretted that the officers of the several societies do not make such arrangements with each other as to hold all the principal shows successively, beginning early in September and ending the latter part of October. If something of this kind was attempted, there would be a far greater interchange of civilities between the members of each, and a corresponding benefit in the spread of valuable information. We wish another year something of this kind could be effected.

The Massachusetts Horticultural Society hold their twenty-third annual exhibition Wednesday, Thursday and Friday, the 17th, 18th and 19th of September.

The Pennsylvania Horticultural Society hold their annual exhibition on Tuesday, Wednesday and Thursday, the 16th, 17th and 18th of September.

The New York State Agricultural Society will hold their fair at Rochester on Wednesday, Thursday and Friday, the 17th, 18th, and 19th of September.

The Michigan State Agricultural Society will hold their next fair at Detroit, on Wednesday, Thursday and Friday, the 24th, 25th and 26th of September.

The Cincinnati Horticultural Society will hold the next annual exhibition at Cincinnati, on Wednesday, Thursday and Friday, the 1st, 2d and 3d of October.

AMERICAN INSTITUTE.—The annual address before this institution in October next will be delivered by Dr. C. T. Jackson, on the evening of the 16th of that month.

THE WEATHER AND CROPS IN MICHIGAN.—The spring, with us was wet, cold and backward. We are now having fine weather. The farmers commenced haying about a week since. In some parts of the state they have commenced harvesting their wheat. Last week I passed through Macomber and Oakland, two of our northern counties, and I never saw a more beautiful sight than the wheat fields now present. The harvest in this state will be more abundant than ever. Our fruit was mostly cut off by late frost in the spring, but we will have some. Our State Agricultural Society will hold its annual fair, on the 24th, 25th and 26th days of September next, and I hope to see you here with a good delegation from Boston.—*Yours*, J. C. HOLMES, *Detroit, July 16, 1851.*

TOADS DESTRUCTIVE TO STRAWBERRIES.—We notice by the doings of the Farmers' Club, in New York, that our friend, Prof. Mapes, made the somewhat remarkable statement that, "toads are fond of strawberries, and select the best for their own eating." How the professor ascertained this fact he does not say, but if he or any body else ever saw a toad in the act of devouring a berry we shall believe it, but not otherwise. We suspect Prof. Mapes imagined this must be so, on account of the great number of toads which are usually found in strawberry beds; but we had always supposed, and still think, they were attracted there by the quantity of wire worms, which "are fond" of them, and which the toads eagerly devour, to the great delight of every cultivator.

TAN LIQUOR FOR STRAWBERRIES.—At the same meeting Prof. Mapes remarked, that "having observed the tendency of soil in which much tannin existed, from old bark of trees, to give heavy crops of strawberries, he tried it by putting a gallon of tan liquor into two hundred gallons of water, and sprinkled some strawberry beds with it, leaving others without it, and the difference was remarkable." We do not learn, however, whether the difference was owing to the tan liquor or the water with which it was

diluted, as Mr. Mapes does not state whether the other beds had the same quantity of pure water as those sprinkled with the tan liquor; for we do not imagine that even the professor would compare the crop of a bed *not* watered with one which had been *freely* sprinkled. But after all, how much good did the tan liquor do? Mr. Mapes exhibited some of Hovey's Seedling from his farm at the same meeting, which measured *four and a half inches* in circumference! Now we have grown this variety without manure and without water, more than *five and a half inches* in circumference. The professor must try again, or we shall not set him down as a very successful horticulturist, notwithstanding his wonderful farming achievements. We hope we shall not get another such a cruel punch under the ribs for saying this, as that which the professor hinted we received from another contemporary some time since. It would annihilate us—quite.

BOSTON NOTIONS.—So famous has our city become for its notions that no chance is lost sight of, either individually or officially, to lay a proper claim to it. The latest notion is that of painting the iron paling in front of the court house, on School street, of a dirty buff! Another one, of similar character, is that of painting the *neat* fences around the huge clipped evergreens on the common of a deep *green!* probably that they might be mistaken for part of the branches and foliage of the trees. If we were to suggest any further notion, or perhaps we might say improvement, it would be to paint the iron paling around the common the same color of that in School street, as neutral tints harmonize better with the foliage of the trees, and there would be no danger, of its being mistaken for iron. In matters of rural taste our city seems to be determined to appear as ignorant as possible.

ADVANTAGES OF TAKING A HORTICULTURAL MAGAZINE.—A writer in the *Soil of the South*, an excellent paper published in Columbus, Ga., in urging the importance of agriculture and horticultural periodicals, brings forward several examples, of which the following is one:—Last winter, while I was in the low country, “George Newland’s celebrated Mammoth Alpine Strawberry” made its appearance in Charleston, accompanied by flaming engravings and endless certificates. “Price, \$5 per hundred, \$30 per thousand.” “Phelps, 102 Church street, opposite Planter’s Hotel,” was the agent. Three of my friends became purchasers to the amount of \$5 each. What do you suppose was their mortification when their attention was called to a number of *Hovey’s Magazine of Horticulture*, in which this prince of humbugs had been exposed the year before? These gentlemen had paid \$15 for nothing, when two or three dollars paid for a horticultural paper would have saved them the disappointment and given them much other useful information.—(*Soil of the South.*)

THE LATEST POTATO BUG—OR HUMBUG.—It is well known that the Legislature of Massachusetts, at their last session, passed a resolve, offering \$10,000 premium for the discovery of a remedy for the potato rot. Such a liberal offer has not been without its use in tempting many well meaning persons, but who know no more about the potato rot than they do about the cholera, to suppose they had discovered the real cause of the disease,

and to claim the premium. Among them, is a Mr. Flanders, who says, in his communication to Gov. Boutwell, that it is a "*black bug* which preys upon the leaf until it destroys the vine and causes the root to rot, &c." J. W. Proctor, Esq., of Danvers, having written to Dr. Harris, to know his opinion upon this matter, the Dr., in his usual familiar style, does not hesitate to denounce all the insect theorists, including Dr. Alfred Smee, of England, who even published a whole pamphlet upon the subject, showing, as he thought conclusively, that it was owing to the attacks of a kind of aphid, or plant lice, similar to the common green fly. After showing that insects have nothing to do with the rot, the Dr. concludes his letter to Mr. Proctor, by remarking that, "though perfectly willing, as in the present case, to express an opinion when asked, I have no wish to sit in judgment upon others, and might have maintained a reserve upon the latest humbug concerning the potato pestilence, if your own sagacity had not led you to suspect the smallness of its pretensions."

We think the offer of the premium by the Legislature, was an absurd one, but all the claims for it, so far, have been more absurd. What connection insects on the vines have with a disease which often does not make its appearance until several days after they are severed from the potatoes, we are at a loss to conceive; and we hope that sufficient information has now been elicited to prevent any person from ever applying for the state premium, unless he shows the rot to be caused by something besides insects.—Ed.

STRAWBERRIES FOR SIX MONTHS IN THE YEAR.—We have been somewhat surprised to learn that the secret has been discovered,—for secret it must be,—of cultivating the strawberry so as to have the fruit from six to eight months in the year; not the Monthly Alpine, but Hovey's Seedling, which has now added to its other qualities that of a perpetual bearer. The gentleman who has made this discovery is Mr. C. F. Peabody, of Columbus, Ga., one of the editors of the *Soil of the South*. His success has greatly elated him,—and well it may,—for Mr. Peabody thus breaks out, in speaking of us and the Magazine: "We of the south, owe him eternal gratitude for his Seedling strawberry, and we look into his Journal, each month, as it comes to us, with a feeling of gratitude—and why should we not? For we began picking Hovey's Seedling in March, and our beds are now (July 20,) in full fruit and bloom, with a prospect of continuing so till October." But he says nothing of his mode of cultivation. Fortunately we are not without the information, for Uncle Solon Robinson, who has visited Mr. Peabody's garden, and eaten the fruit, thus details the "how" all this is done. We quote from Mr. Robinson's article in the August No. of the *American Agriculturist*:—

The secret has been discovered and practised by Charles F. Peabody, of Columbus, Georgia, one of the editors of the "*Soil of the South*," for several years, not as a theory or mere experiment, nor accidental production, but as a science—a study of time, successfully carried out for profit; for he sends his market wagon into the city, loaded with this rich luxury, from

March till September; and last year, his vines continued to ripen fruit until Christmas.

What is the secret? our fair readers exclaim. What new variety? No other than Hovey's Seedling, impregnated by Early Scarlet, and *never manured*, but kept continually moist by artificial watering; for which purpose, he uses a garden engine.

For four years, Mr. P. cultivated the same variety in rich garden mould, manuring liberally every year, and at any time during summer could have mowed a heavy swath of green luxuriant vines, which would have made very good hay, but that was not what he wished to grow. Failing to get fruit by garden culture, he commenced the experiment which for six years has proved so eminently successful. He cleared off a strip of low land along a little rivulet, the soil of which is coarse sand and loose gravel, intermixed with clay slightly, and of course covered with forest mould; digging out the roots of a thick growth of bushes sufficiently prepared the land. The vines were then set in rows, six of Hovey and one of Scarlet, and the surface has never been disturbed since by spade or hoe, except so far as going over the ground once or twice a-year to cut out here and there a decaying vine or bunch of grass or weeds—few of which, however, in consequence of using no manure, ever make their appearance; neither do the plants run to vines, spreading all over the surface every year, as they did in the garden. The whole strength seems to be exerted for the production of large rich berries to such a degree that the ground is *red with fruit, not green with leaves*; and this not upon a little plot, but over a field of five acres.

And does he never manure them? is undoubtedly asked by every tyro in the business of growing strawberry *vines*. Mr. Peabody grows roots, stems, and fruit. I repeat, he never manures, never digs the ground, nor turns under the old roots to give place to new ones. In autumn, he gives a light dressing of the surface soil of the forest, and covers the ground with leaves; these remain until decayed, and serve to keep the berries clean during the long bearing season. This, and the watering every hot day when it does not rain, is the great secret of growing strawberries, not only six months, but last year he actually had them upon his table every month but two—January and February. Of course, at the north, the bearing season could not be of equal duration, but it may be greatly extended by the same course of cultivation.

Of course this cannot be done in our cold climate and short summers to any great extent; yet Mr. Peabody has succeeded so well, we should like to see the attempt made here. Perhaps they might be made to bear from June till frost. Will some enthusiastic cultivator try?

RETURN OF W. R. PRINCE, ESQ., FROM CALIFORNIA.—We are glad to learn from the Flushing papers, that our old correspondent, Mr. Prince, the well known nurseryman of Flushing, L. I., has recently arrived from California, where he has resided for more than two years. Mr. Prince has enjoyed excellent health during his absence, and has devoted much time to an exploration of the country, and has, probably, acquired a better botanical

knowledge of California, than any other individual. Mr. Prince, in a note to the Editor of the Flushing Journal, thus briefly sums up his visit:—

“I began at the southern mines of California, on the Tuolumne and the Stanislaus Rivers, and having placed my men at mining there, I rambled over the mountains and ravines, for a great distance, in all directions—thence I removed to the northern mines, and there traversed the north, south, and middle forks of the American river, the Yuba, Feather, and Sacramento rivers, and their numerous forks. I have sent and brought home the seeds and bulbs of above 300 species of trees, shrubs, and plants, new to the Atlantic states and to the rest of the world. Also, a large collection of minerals, comprising the gold-bearing quartz, and all others found throughout that mighty volcanic region, where nature must, in times of yore, have displayed her wildest paroxysms. In returning, I spent ten days in crossing the mighty range of the Cordilleras, then descended into the vale of Mexico. I sojourned some days at each of the principal cities of that interesting country, visited several volcanoes, and mountains of eternal snows, and also the various battle-grounds, rendered glorious and immortal by American chivalry. True to my first love, I gathered from the summits of the loftiest mountains the seeds of all the interesting trees and plants, and in one case collected the seeds of strawberries and blackberries from an immense volcanic mountain whose fires are now extinct. To all inquirers as to the extent of the gold deposits of California, you may answer most assuredly that her quartz mines are *absolutely inexhaustible*, and that their product cannot fail to be increased in geometrical progression.”

We welcome Mr. Prince to his home again, and trust he has not only enriched the flora of the Atlantic states, by his accessions from the Pacific coast, but that he has piled up a sufficiency of the golden rocks of that auriferous region, to reward him amply for the privations and toils of such a protracted visit.

ART. III. *Massachusetts Horticultural Society.*

Saturday, August 2, 1851. Exhibited.—FLOWERS: From M. P. Wilder, fine specimens of Japan lilies. Cut flowers, bouquets, &c., from J. Nugent, P. Barnes, J. Breck, J. Mann, E. M. Richards, John Hovey, and others.

FRUITS.—From J. F. Allen, figs, two var.; nectarines; grapes, Bishop, Poiteau Noir, fine, White Hamburg, fine; peaches, fine; Improved High blackberries. From J. Hovey, apples, Early Harvest, very fine. From Jos. Breck, grapes, Black Hamburg, Muscat of Alexandria. From A. Bowditch, grapes, Black Hamburg and Muscadine. From J. Lovett, 2d, raspberries, Knevet's Giant, very fine; Improved High blackberries, fine; gooseberries. From A. D. Williams & Son, apples, unnamed. From E. M. Richards, apples, Early Bough, Williams, Sugar Loaf Pippin, Red Astrachan, fine, Summer apple, and Early Harvest. From H. D. Gray, orange, grown in a pot in a parlor, extra large. From S. Bigelow, by T. Willott,

grapes, Black Hamburg, very large bunches, fine; Muscat of Alexandria, fine. From G. Merriam, Improved High blackberries, superior.

From Hovey & Co., grapes, Muscat of Alexandria, fine, Syrian; Improved High blackberries, very fine; peaches, Early Crawford, very fine; nectarines, Hardwicke, Elruge, and Red Roman; pears, Doyenné d'Ete, and Madeleine; cherries, seedlings, two varieties. From J. Richardson, Improved High blackberries; plums, Jaune Hative. From H. Vandine, apricots, Breda; plums, Jaune Hative; pears, Madeleine. From S. Crosby, South Boston, plums. From J. Mann, House of Industry, apricots. From A. M. Withington, Improved High blackberries, very fine. From F. Dana, currants, White Dutch. From W. C. Hubbard, cherries, Late Duke, large and fine. From G. Walsh, black currants, apples, unnamed, handsome. From C. E. Grant, strawberries, Wood; Improved High blackberries, very fine. From Rev. M. Morse, apples, Early Harvest. From A. Dexter, Improved High blackberries, fine. From M. H. Simpson, grapes, White Frontignan and Grizzly Frontignan, both very superior; peaches, Late Crawford, superior, extra large. From B. F. Dunham, White whortleberries.

Fruits tested. From Hovey & Co., Seedling cherries, two varieties, one an amber colored cherry, mottled with a dark red cheek, sweet, high flavored and very fine, of large size, with a firm flesh; the other, a small cherry, of ordinary quality.

VEGETABLES.—From J. Crosby, cabbage, var. Early Battersea; beets and carrots, tomatoes, fine, basket of potatoes. From J. B. Moore, Early Turnip Blood and Long Blood beets. From J. Mann, cabbage, var. Early Battersea; Early Turnip Blood beets, and onions. From A. D. Williams & Son, Early Savoy cabbages, and basket of potatoes, fine.

August 9. An adjourned meeting of the Society was held to-day,—the President in the chair.

Voted, That a committee be appointed to prepare suitable resolutions on the decease of the first President of the Society, Gen. H. A. S. Dearborn: the following gentlemen were appointed on the committee—Messrs. French, Leach, and Cabot.

Some beautiful specimens of pressed flowers and grasses were presented by a lady, of Roxbury, which were entitled to the thanks of the Society.

William S. King, Manton, R. I., and A. C. Warren, Boston, were elected members.

Adjourned two weeks, to August 23.

Exhibited.—**FLOWERS:** From J. Mann, Jr., 25 var. of annuals, balsams, gladiolus. From J. Breck, phlox, balsams. From P. Barnes, phlox, lilies, gladiolus, annuals. From J. Nugent, two bouquets, balsams, gladiolus, roses, phlox, gloxinias. From J. A. Kenrick, basket of flowers. From J. Hovey, two bouquets. From Wm. Kenrick, by Miss Russell, one large bouquet.

AWARD OF PREMIUMS.

DOUBLE BALSAMS.—For the best display, to James Nugent, \$3.

For the 2d best display, to J. Breck, \$2.

For the 3d best display, to Jonathan Mann, Jr., \$1.

FRUITS.—From J. Lovett, 2d, Improved High blackberries, superior. From Breck & Co., grapes, Cannon Hall Muscat, Muscat of Alexandria, and Black Hamburg. From G. Merriam, Improved High blackberries, superior. From A. Bowditch, grapes, Black Hamburg and Muscadine. From A. D. Williams & Son, apples, Williams, Early Bough, fine; pears, Jargonelle. From E. M. Richards, apples, Early Harvest, Early Bough, Williams, Summer Apple, Summer Rose, Sugar Loaf Pippin, Red Juneating and Red Astrachan. From J. Mann, pears, Jargonelle; apricots, unnamed, probably Breda. From C. Judson, plums, unnamed. From Mrs. J. H. Wilson, lemons. From C. E. Grant, Improved High blackberries, superior plums, probably Royal de Tours. From A. Dexter, Improved High Blackberries. From A. W. Stetson, Seedling plum, small, handsome.

From Hovey & Co., Improved High blackberries; peaches, Early Crawford, extra fine, Morris's White, Late Crawford, and Mammoth; nectarines, Murray; grapes, Syrian and Muscat of Alexandria. From J. F. Allen, peaches, fine. From H. Vandine, plums, marked Royal de Tours, probably Peach, very fine; Royal Hatif, Italian Damask and Early Cross. From B. Harrington, apples, Early Bough, fine, River, Juneating, Sopsavine, Williams; pears, Jargonelle. From F. Burr, apples, Red Astrachan, fine. From J. Hyde & Son, apples, Curtis's Early. From R. L. Colt, Esq., Patterson, N. J., grapes, Cambridge Botanic Garden, raised in a house fronting the east, on Hoare's plan, with an outside border added—a coldhouse, to which fire has been applied but nine times; Seedling, a hybrid, between Black Hamburg and Cambridge Botanic Garden; Fontainebleau—both raised in same house; Muscat of Lund, (?) and one marked Syrian, but probably the Red Chasselas. These grapes, unfortunately, were much bruised and injured by the carriage, so much so as not to afford a fair criterion of quality; they were well flavored and ripened, and no doubt, when in good condition, of fine quality.

VEGETABLES.—From C. M. Furbush, Grafton, Peach Blossom potatoes, good. From B. Harrington, Lexington, one Marrow squash. From J. Mann, Jr., one dozen Turnip Booted beets, one dozen of onions, and three heads of Battersea cabbage, all good. From A. D. Williams & Son, five heads of Savoy cabbage, two pecks of potatoes, one of Whites and one of Chenangoes, good. From E. M. Richards, one peck of Chenango potatoes.

August 16. *Exhibited.*—FLOWERS: From the President, a fine variety of phloxes. From M. P. Wilder, a large collection of phloxes and Japan lilies. From J. Breck, a fine collection of phloxes, delphiniums, &c., &c.; among the phloxes, some good seedlings.

From Hovey & Co., a fine collection of phloxes, and a seedling Japan lily, very dark, large and superb. The following are the names of the phloxes in the winning stand:—Reèvesii, Blanc de Neuilly, Nymphæa alba, speciosa, Princess Marianne, Breck's No. 5, and four beautiful seedlings. Cut flowers, &c., from E. M. Richards, J. Nugent, J. Mann, Jr., A. Bowditch, J. Hovey, J. C. Pratt, Miss Russell, P. Barnes, and others.

AWARD OF PREMIUMS.

PHLOXES.—For the best 10 distinct varieties, to Hovey & Co., \$6.

For the second best 10 distinct varieties, to Joseph Breck, \$4.

For the third best 10 distinct varieties, to M. P. Wilder, \$3.

FRUIT.—From Jos. Breck, grapes, Muscat of Alexandria, fine, Cannon Hall Muscat, fine, Black Hamburg, White Frontignan, very fine, Black Muscat. (?) From E. M. Richards, apples, Early Strawberry, Gravenstein, Williams, Summer Apple, Benoni. From J. Nugent, grapes, Sweetwater, Black Hamburg, and White Frontignan. From J. F. Allen, grapes, Poiteau Noir, fine; White Hamburg, very fine; Whortley Hall Seedling, well colored and fine; peaches, Manning, Violet Hatif, and Malta, very fine; nectarines, Elruge; plums, Coe's Golden Drop, very large, forced; Improved High blackberries, fine. From A. W. Stetson, plums, Seedling. From G. Walsh, apples, three varieties for a name. From B. Harrington, apples, Seek-no-Further, Sopsavine, River and Williams, fine; pears, Jargonelle. From C. E. Grant, Improved High blackberries, superior. From W. R. Austin, pears, Franc Real d'Été, fine. From A. D. Williams & Son, apples, Williams, very fine, and Early Bough; pears, Jargonelle, fine. From J. Lovett, 2d, pears, Jargonelle; Improved High blackberries, superior; apples, Early Bough and Red Astrachan, both very fine. From A. Bowditch, grapes, Black Hamburg, fine.

From Hovey & Co., grapes, Chaptal, White Frontignan, Muscat of Alexandria, and Syrian; Improved High blackberries; nectarines, Murray and Golden; peaches, Old Mixon Freestone, very fine, Mammoth, Late Crawford, and Stetson; pears, Supreme de Quimper, very fine, Autumn Jargonelle, (?) Rousselot, (?) Jargonelle, Windsor, Beurré Giffart, and two varieties unnamed. From H. Vandine, plums, Peach, superior, Italian Damask, Early Yellow Gage, Lawrence's Favorite, Royal Hatif, and Yellow Honey; apples, Sopsavine, Williams, and Early Harvest. From Daily Journal Office, White whortleberries. From J. Hyde & Son, apples, Curtis's Early; pears, Jargonelle. From E. Wight, pears, Skinless, Julienne?; plums, Myrobalan? From J. Mann, Jr., plums, Prince's Imperial, and Red Gage; apricots, Breda. From J. S. Cabot, pears, Jargonelle. From G. Merriam, Improved High blackberries, superior. From A. Pope, apples, Red Astrachan, fine; nectarines, unnamed; grapes, Sweetwater.

Fruits tested.—From Hovey & Co., pears, Supreme de Quimper, and one unnamed; peaches, Stetson's Seedling, sweet, juicy, and very fine. From A. W. Stetson, plums, Seedling, a small, oblong, purple plum, early and of very fine quality. From J. F. Allen, peaches, Manning; grapes, Raisin de Calabre, a small grape, of very rich sweet Muscat flavor; Caillaba, (?) very small oval transparent grape. From J. Breck, grapes, White Frontignan, and Muscat of Alexandria, both fine. From the President of the Society, pears, Bloodgood and Rostiezer.

VEGETABLES.—From J. Mann, Jr., two vars. Sweet corn, Turnip Blood beets, onions and carrots, fine. From J. Crosby, Saba beans, fine, the first

exhibited this season; also Sweet corn, very fine. From J. Gordon, Lima beans, the first exhibited this season, well grown and fine.

August 23. An adjourned meeting of the Society was held to-day,—the President in the chair.

The committee appointed to prepare suitable resolutions on the death of Gen. H. A. S. Dearborn, the first President of this Society, made the following report, which was adopted:—

Whereas, It has pleased Almighty God to remove by death the Hon. Henry Alexander Scammel Dearborn, the first President of this Society,—
Therefore

Resolved, That we would cherish with profound respect the memory of the departed, and would seek to impress upon our hearts his many eminent and noble virtues.

Resolved, That we acknowledge with gratitude the many obligations of this Society to the late Hon. H. A. S. Dearborn, for his untiring zeal in promoting its best interests, and for his exhibition of classic taste in all that adorns and refines social life.

Resolved, That we tender to the family of the deceased, our warmest sympathies in their bereavements.

On motion of B. V. French, it was

Voted, That the Corresponding Secretary transmit a copy of the foregoing resolutions, signed by the President and Recording Secretary, to the afflicted family.

Voted, That the thanks of this Society be presented to the Hon. Samuel A. Eliot, for his valuable donation of books to the Society.

The following gentlemen were elected corresponding members:—Hon. Allen W. Dodge, of Hamilton, and James J. Mapes, LL. D., of Newark, N. J.

Exhibited.—**FLOWERS**: From the President of the Society, phloxes, &c. From J. Nugent, *Erythrina crista-galli*, dahlias, roses, phloxes, and two bouquets. From P. Barnes, dahlias, zinnias, asters, *gladiolus*, &c. From J. Breck & Son, hollyhocks, delphiniums, phloxes, &c. From J. Mann, 28 varieties annuals, (very fine.) From Mrs. M. Daggett, one plant *Vallota purpurea*, finely flowered. From B. Harrington, A. Bowditch, Miss Russell, J. Frothingham, E. M. Richards, and Miss Kenrick, a variety of cut flowers, bouquets, &c.

FRUIT.—From the President of the Society, apples, Williams; pears, Tyson, and one unnamed. From O. Johnson, apples, Early Bough, superior. From N. Whiting, apples, Williams. From E. M. Richards, apples, Benoni and Williams; pears, unnamed. From Messrs. Breck & Son, pears, Summer Franc Real, Passans du Portugal, and Belle d'Aout; grapes, Cannot Hall Muscat, fine. From A. Bowditch, grapes, Black Hamburgh, very fine. From J. Lovett, 2d, Improved High blackberries, superior pears, Bloodgood, and one unnamed variety; apples, Williams; melon, Christiana. From S. R. Johnson, apples, Williams, superior. From

A. D. Williams, apples, Williams, superior; pears, *Beurré d'Amanlis*. From A. D. Weld, apples, Williams, superior. From J. Mann, Jr., plums, *Imperial Gage*, *Red Gage*, *Black Imperial*, *Prince's Yellow Gage*, very fine, *Green Gage*, &c. From W. E. Carter, apples, *Gravenstein*. From J. F. Allen, peaches, *Late Admirable*, *Late Crawford*, and *Violet Hatif*, all very large and very fine; plums, *Coe's Golden Drop*, very large.

From Hovey & Co., grapes, *Josling's St. Albans*, *Chaptal*, *Macready's Early White*, *Chasselas Musque*, and *Black Hamburg*, fine; melons, *Beechwood*; peaches; pears, new native seedling, fine, *Summer St. Germain*, *Julienne*, *Passans du Portugal*, *Franc Real Summer*, *Green Chisel*, *Bloodgood*, and one unnamed variety. From G. Newhall, melons, *Christiana*, very fine. From Mrs. L. Spaulding, figs. From C. Newhall, grapes, *Black Hamburg*, very fine, large bunches. From H. Vandine, plums, *Prince's Large Yellow Gage*, *Early Yellow Gage*, *Wilmot's Early Orleans*, *Italian Damask*, very fine, *Royal de Tours*, (?) *Dana's Yellow Gage*, *Lawrence's Favorite*, fine, *Black Imperial*, *Washington*, *Ide's Seedling*, and two sorts unnamed. From B. Harrington, apples, Williams, superior, *River*, and *Seek-no-Further*. From M. P. Wilder, pears, *Belle de Feron*, *Beurré Giffart*, *Manning's Elizabeth*, *Rostiezer*, *Bloodgood*, very fine, and *Belle d'Aout*. From G. Walsh, plums, *Green Gage*, fine. From S. Hill, plums, *Washington*. From A. Call, pears, *Belle d'Aout*?

Fruits tested.—From J. S. Cabot, pears, *Beurré Giffart*, new, promises well for an early pear. From E. M. Richards, pears, probably *Limon*, high flavored, juicy, and good. From S. Marcellus Wheeler, pears, *Seedling*, of good size and promise. From Hovey & Co., melons, *Beechwood*, very fine, sweet, and well flavored; grapes, *Chasselas Musque*, and *Josling's St. Albans*, (these varieties prove to be identical;) *Macready's Early White*, very early and very fine.

VEGETABLES.—From J. Gordon, three purple egg plants, the first exhibited this season. From J. Crosby, six superior heads of *Royal Cape lettuce*. From J. Mann, Jr., *Sweet corn*, *Turnip Blood beets*, and three heads superior *Drum Head cabbages*. From J. B. Moore, *Mammoth beets*, *White Portugal onions*, elegant tomatoes, and fine *Squash peppers*.

August 30. The Committee on Fruits awarded the following premiums, to-day:—

SUMMER APPLES.—For the best 12 specimens, to Charles Stone, Watertown, for the Williams, \$6.

For the 2nd best, to J. Lovett, 2d, for the *Red Astrachan*, \$4.

To B. Harrington, A. D. Williams and Son, A. D. Weld, and S. R. Johnson, a gratuity to each, of the bronze medal, for fine specimens.

BLACKBERRIES.—For the best specimens, to J. Lovett, 2d, \$5.

For the 2nd best, to G. Merriam, \$3.

To C. E. Grant, a gratuity of the bronze medal, for fine specimens.

CURRENTS.—For the best specimens, to Geo. Wilson, for the *White Dutch*, \$5.

For the 2nd best, to Hovey & Co., for the *Victoria*, \$3.

To O. Johnson, a gratuity of the bronze medal, for fine specimens.

GOOSEBERRIES.—For the best, to John Gordon, \$5.

For the 2nd best, to J. Hovey, \$3.

SUMMER PEARS.—For the best 12 specimens, to J. Lovett, 2d, for the Rostiezer, \$6.

For the 2nd best, to M. P. Wilder, for the Bloodgood, \$4.

RASPBERRIES.—For the best, to J. Lovett, for Knevet's Giant, \$5.

For the 2nd best, to C. Newhall, for the same, \$3.

To S. Sweetser, a gratuity of the bronze medal, for fine specimens.

ART. IV. *Obituary.*

DEATH OF GEN. DEARBORN.—It is with sad and melancholy feelings that we attempt to pay a last tribute of respect to the memory of Gen. Henry A. S. Dearborn, one of our most able contributors, who died, after a very brief illness at Portland, Me., on the 29th of July, at the residence of his son-in-law, the Hon. A. W. H. Clapp. The funeral took place at Portland, but his mortal remains were brought to Forest Hills Cemetery, where they were privately interred, agreeably to the wishes of his family.

The papers of the day have given a brief account of the life and character of Gen. Dearborn. Early educated to the profession of the law, he pursued that avocation until appointed Deputy Collector of the port of Boston. He afterwards served in the war with Great Britain, and subsequently was appointed Collector of Boston, which office he held up to 1829. In 1831 he was elected a member of Congress from the Norfolk district, and afterwards was appointed Adjutant General of Massachusetts. In 1847 he was chosen Mayor of Roxbury, which office he held at the time of his death.

We have not the desire or wish to comment upon his public services, which were of no ordinary nature. The places of honor to which he has been appointed are ample to show the high regard and esteem in which his labors have been held.

It is simply as a patron, friend and lover of Horticulture that we wish to add anything to the well earned fame of General Dearborn. In this pursuit his whole feelings seemed to be concentrated; and if the great number of papers which he contributed to the agricultural and horticultural journals for the last twenty-five years, or the high culture and keeping of his own garden,—did not evidence this, the establishment of the Mount Auburn and Forest Hills cemeteries, which were mainly to be attributed to his labors, will be sufficient proof of his zeal and devotion to this branch of rural art.

Our acquaintance with Gen. Dearborn commenced with the organization of the Massachusetts Horticultural Society in 1829. He was its first president, and in that capacity was influential in giving it a popular tone, which alone could insure its success among the amateur cultivators of that day,—

who had not the zeal and energy of those of the present time. For a few years he constantly, through the columns of the old *New England Farmer*, endeavored to awaken an interest in horticultural affairs, and did not leave the subject until he had aroused that dormant taste, from which has sprung the present high advancement of horticultural science. Called afterwards to other duties, which occupied his time, and gratified as he must have been to see his efforts successfully followed, he gradually, after the completion of Mount Auburn, withdrew himself from the active labors of gardening. But he did not lose any of his love for the pursuit, as a reference to our pages alone will show. Besides his arduous duties in laying out the Forest Hills Cemetery, he continued from time to time to write upon various subjects of interest to the horticultural community.

Deep, indeed, is our sorrow at his death; for his loss is a public one. Kind, affable, and noble hearted, it seemed his pleasure to serve others rather than himself. Truly has it been said by one who has noticed his death, "that every one who studies Gen. Dearborn's character, will acknowledge him as one of the most useful, industrious, patriotic and generous men that ever lived, and they will do that justice to his memory which has been unjustly withheld."

HORTICULTURAL OPERATIONS

FOR SEPTEMBER.

FRUIT DEPARTMENT.

The drought of July has continued up to the present time, and vegetation now begins to show the effects. Fruit does not swell up rapidly, and the trees, in many locations, begin to curl their leaves, after such a severe and long continued drought. We believe that no heavy rain has fallen in the immediate vicinity of Boston, since the early part of June, and but for a succession of very light showers, which have not, however, moistened the ground under a full grown tree, the effects of such a dry state of the soil would be much more apparent. Fortunately the weather has been cool, with much less evaporation, which has aided in preventing a greater abstraction of moisture.

It is such a season as this that requires the ambitious cultivator to call into requisition his greatest skill to counteract, as far as possible, the effects of such a drought; and as there are in reality but two ways in which much can be done, these ways must be energetically pursued. The first is constant stirring of the soil, and the second mulching. To talk of watering, except in some particular cases, is idle; it is to the practice we have mentioned, upon which reliance must be placed for any hope of success.

Budding, pruning, and the general routine of such work will, by this time, have been nearly completed, and as with the advance of summer, and especially in such dry weather, killing weeds will have, in a great de-

gree, been mostly accomplished, the cultivator must now turn his attention to the preparation of ground for planting, both the coming autumn and in spring. Now is a good time to trench and thorough drain, before the ground is sodden with our fall rains; and as so much is gained by early attention to such work, we have only to throw out these hints to have them generally acted upon.

GRAPE VINES will, by this time, in the greenhouse, have had their fruit nearly cut; and no particular attention will be necessary now only to see that it is well aired so as to secure good well-ripened wood; this should be done before October, when everything should be in readiness for the plants. In cold houses the crop will be nearly a month later, and will just now be attaining its color and ripeness. Cease watering and damping the floors, and give an abundance of air in fine days. Keep the laterals pruned in so as not to create too much shade.

PEACH TREES should be all budded this month. Trees cultivated in pots, should be rather sparingly watered, in order to ripen the wood.

STRAWBERRY BEDS should now be made. Let the soil be well prepared; for the size and quality of the fruit, as well as the long continuance of the beds in good condition, depend on this.

RASPBERRY plantations may be made the last of this month.

SUMMER PRUNING should not be neglected; many of the strong growing trees will push again, and the young shoots will require to be nipped off.

FLOWER DEPARTMENT.

September is always a busy month. As the season of housing plants approaches, there is an abundance of work. Everything should be looked over and be put in readiness for housing the last of the month. Indeed, many things should be put in earlier, as the autumn rains are often injurious to many kinds of plants. All the pots should be washed, the soil top-dressed and the plants properly tied up in good time, so that a sudden cold snap may not find anything left undone, but all may be ready for placing in-doors. As a general thing, unless for all such plants as are very hardy and are not wanted for early forcing, it is best to let them remain out as long as possible, particularly Camellias, Ericas, Roses, and similar woody things. Many small plants of this year's growth may be sheltered in old hotbed frames, where there is plenty of them, and they will do better in such a place than in the house.

Potting and repotting must go on vigorously. Everything required for next spring's stock, or for bedding out next season, should be noted down, and one or more plants of each taken up, if they have been planted out. Verbenas, Scarlet Geraniums, Heliotropes, Salvias, Lantanas, &c. &c., will be among the number. If a young stock has not been neglected, there will be less need of this; but as is often the case, that it is forgotten and the old plants must be depended upon. Secure now a good store of potting soil, which will be wanted in early spring before the frost is out of the ground. Let it be put away in a dry cellar or shed out of the reach of severe frost.

Do not neglect the cleanliness of the houses: as insects are always present, even with the greatest care, see that as few are left housed away as possible in the cracks and crevices of even the best built houses. Wash carefully the glass as well as all the wood work, and, if needs be, with diluted whale oil soap, finishing off with a thorough syringing of clean water. Wash down the stages, and clean all rubbish from beneath, that the atmosphere may be as pure and fresh as in the open air. If there are any leaks in the flue, see that they are repaired.

CAMELLIAS will be the first objects in a complete collection. They should now be put in order for taking into the house as soon as frosty nights approach. Wash and clean the pots, and syringe and clean the foliage.

AZALEAS will require housing early, as nothing injures them more than long and heavy rains which occur at this season. Water rather sparingly from now until February.

CHRYSANTHEMUMS should now be attended to: continue to water with guano, and place in an open sunny situation where they will not draw up. They may remain out as long as the weather is unaccompanied with hard frosts.

CARNATIONS and PICOTEEs of the monthly kinds for blooming during winter, should now be repotted.

PELARGONIUMS headed down last month, will by this time have made fresh shoots, and they should now be at once repotted. Reduce the ball as much as possible without breaking the main roots, and put into as small pots as is convenient for the size of the plant. Protect a week or two in a frame, and they will then be ready for housing.

CHINESE PRIMROSES should now be repotted; and seedlings should be put into small pots.

NEAPOLITAN VIOLETS, for flowering in frames, should be removed into their places the latter part of the month, and such as are intended for pots should be attended to, as we have advised in an article in this number.

ACHIMENES done blooming, may now be placed away on a dry shelf beneath the stage: plants for a succession may now have another shift into larger pots.

JAPAN LILIES in pots, now out of flower, may now be placed in the open air until their tops have decayed, and then placed in a cold frame or cellar for the winter.

ERICAS and EPACRISSES which have been planted in the open ground should now be taken up and repotted, and placed in a frame for a week or two till they have recovered from the removal. Those kept in pots should be shifted now if they require it.

SPARAXIS, IXIAS, &c. may now be potted.

VERBENAS should now be propagated from cuttings, or layered for a spring stock.

ROSES of the tender kinds should be repotted now if they require it. Cuttings may also be put in now.

CYCLAMENS should now be repotted.

SALVIAS of the different varieties for winter blooming, should now be taken up and potted, if in the open ground.

ABUTILONS should be repotted now: lift and pot those in the borders if they are wanted for winter blooming.

CINERARIAS. The old plants should now be divided, if not already done.

NEMOPHILA INSIGNIS, and other annuals for spring blooming, should now be planted if not already up and growing.

TEN WEEK STOCKS, taken up and potted, will flower finely in the house.

FLOWER GARDEN AND SHRUBBERY.

The flower garden will now be gay with the Phoxes, Dahlias and various late flowering annuals, saving what effect the dry weather may have had upon them; and at this season some little attention will be required to keep every thing neat and tidy: nothing is more apt to be neglected than this department towards the waning season of the year, when the decaying blossoms and leaves naturally lessen the interest of the collection; but if proper care is taken that all the dead flower stems and yellow leaves are cut off as soon as they appear, an air of cheerfulness and healthy growth will still be preserved. Many of the summer blooming plants, such as phloxes, aconitums, &c., if their flower stems were immediately cut down after their first bloom, will throw up a succession in the autumn. Dahlias now coming into their best bloom should be well watered, tied up and mulched, if not already done; in this dry weather, few good blooms can be expected without extra attention.

PÆONIES may safely be removed this month.

LILIES of all the early flowering kinds may now be taken up, divided and reset.

HERBACEOUS PLANTS of many kinds may be safely removed the last of this month.

CARNATIONS and PICOTEES should now be removed to the beds where they are to bloom, and where they can be better protected with straw, than in a close frame.

The lawn and shrubbery should still be looked after; keep down all weeds, and rake or sweep off, especially near the house, all dead and decaying leaves. Continue to roll the walks and mow grass edgings.

Ground should be got in readiness the last of the month for Tulips, Hyacinths and other bulbs, as well as for Ranunculuses. Pansies should be planted out in beds, where they can have a little protection. Continue to transplant into beds or the borders, all kinds of perennials raised from seeds. Look after seeds now, and select only those from the choicest flowers of the several kinds. See that none of the summer flowering bulbs, such as Amaryllis, Tiger flower, &c., are left too late in the ground to be injured by cool frosty nights. Now is a good time to increase hollyhocks by cuttings; Sweet Williams, Blue Bell and similar biennials may now be removed from the seed beds into the borders. Forward all kinds of work that can be done as well or better, this fall, than in the spring.

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OF
HORTICULTURE.

OCTOBER, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *Descriptions and Engravings of Select Varieties of Pears.* By the EDITOR.

WE continue our descriptive list of pears, and, of the several varieties noticed, five are entirely new and of superior quality. The Bartlett has been described in one of our earlier volumes, by S. Downer, Esq., of Dorchester, through whose exertions it was extensively disseminated among the amateur cultivators around Boston. Smith's Bordenave, Inconnue Van Mons and Nouveau Poiteau have been noticed and briefly described in our late volumes, but we are now enabled to give a full account of each.

133. WILLIAMS'S BON CHRETIEN, OR BARTLETT. *Hort. Soc. Cat.*, 3d Ed.

Bartlett, of American collections.
William, of many French collections.

The Bartlett pear, (*fig. 45,*) as it is now universally called, in all American collections, is one of the most popular, admired, and generally cultivated varieties, possessing in an eminent degree a combination of excellences which can scarcely be found in any other pear. In size, it is among the largest pears, in appearance among the most beautiful, and in quality among the best of its season; and when to merits, such as these, we add a free growing and vigorous tree—of upright and handsome habit—an early and abundant bearer,—in all seasons and all soils a fair and perfect

fruit,—ripening readily when gathered early and keeping well,—it must be admitted that it ranks among the very best, if it does not stand at the head of all the varieties for general cultivation.

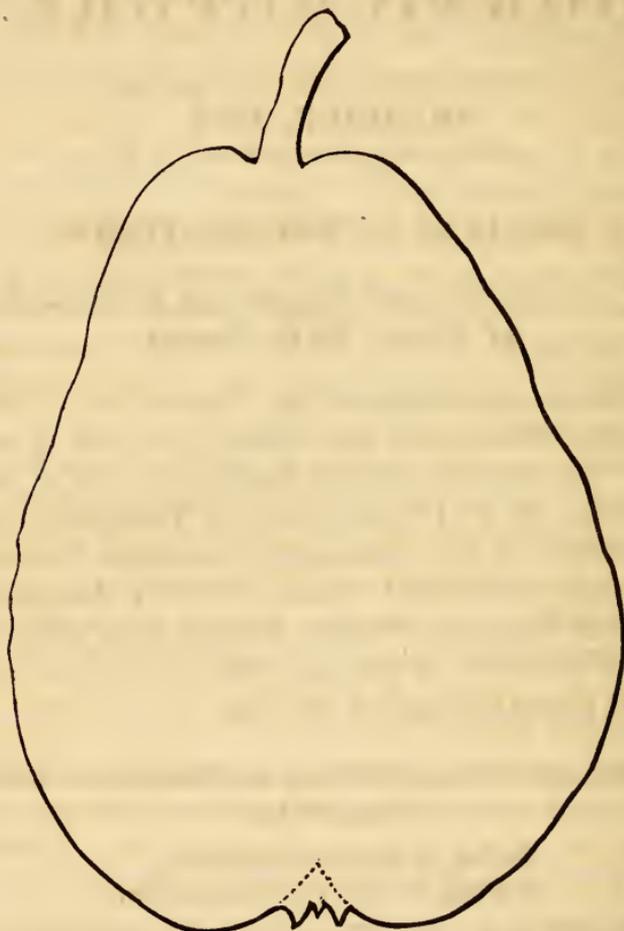


Fig. 45. Williams's Bon Chretien or Bartlett Pear.

As the history of the introduction of the Bartlett pear, into our American gardens, may not be familiar to all cultivators, we will briefly state the circumstances here. In the year 1799 Mr. James Carter, of Boston, procured for Mr. Thomas Brewer, of Roxbury, a few pear trees in England. The names were either not known, or if known they were subsequently lost. The trees, however, grew finely and in a very few years began to bear, when the size, beauty and

excellence of the fruit attracted much attention. By some it was supposed to be a new seedling, and by others to be an unknown foreign pear, and as, in the mean time, the grounds upon which the trees were growing had become the property of E. Bartlett, Esq., the variety was very properly called the Bartlett. Up to 1828 or 1829 it had not been identified with any foreign variety, and at that time the Massachusetts Horticultural Society had a fine painting of it executed by Mr. Harvey, supposing it to be a new variety, to which was given the name of Bartlett.

Mr. Manning, however, with that knowledge of trees which he always possessed, was satisfied that it would be identified with some foreign variety, and in an article in the *New England Farmer*, for 1830, p. 393, he gave conclusive reasons that it would prove to be the Williams's Bon Chretien. It is unnecessary to add that a year or two showed the correctness of his judgment; but the name which had been given to it had been so widely disseminated and withal was so much shorter, that it has been found impossible to displace it for the original. Many cultivators yet only know it as the Bartlett pear, and are not aware of its identity with the Williams's Bon Chretien. Up to 1830 all the trees which had been propagated in this vicinity were from scions from Mr. Bartlett's garden; but as soon as it was known to be synonymous with an English pear, hundreds and thousands of trees were imported, and even up to the present time it is more sought for in the nurseries than any other variety.

The Bartlett, we have said, stands at the head of all the pears of its season; it is true it is not quite so luscious as the Belle Lucrative or the St. Ghislain, but then its size, beauty, productiveness, &c., give it the claim over all others; and it is doubtful if a variety will soon be introduced which can displace it in public favor.

The Bartlett grows freely upon the quince and bears good crops; it is, however, so early a bearer upon the pear stock that there is but little necessity for growing it upon the quince. The annual shoots are strong and stout, and of a dark yellow shade with prominent buds.

Size, large, about four inches long and three inches in diameter; *Form*, obtuse pyramidal, largest near the middle, rounding off to the crown, narrowing to the base which is obtuse, with an uneven and somewhat knobby or irregular surface; *Skin*, fair, smooth, clear lemon yellow when mature, lightly tinged with blush on the sunny side, sometimes russeted around the stem, and thickly covered with minute russet specks; *Stem*, short, about half an inch long, stout, thick, little swollen at the base and inserted in a small uneven cavity; *Eye*, medium size, open, and little sunk in a rather small furrowed basin; segments of the calyx thick, short, projecting; *Flesh*, yellowish white, fine, melting, buttery and juicy; *Flavor*, sugary and rich, with a high musky aroma; *Core*, medium size; *Seeds*, medium size, broad, plump, light brown. Ripe the middle of September.

134. SMITH'S BORDENAVE. *Mag. of Hort.*, Vol. XIII, p. 450.

Smith's Bordenave, (*fig. 46*.) is a new pear of recent introduction into our collections. It first fruited in the garden of A. Smith, Esq., of Hartford, Conn., and was the product of a tree imported six or eight years ago, by Mr. Bordenave, of that city, from Bordeaux, in France. Under what name it was purchased is unknown, as the original label was lost, but as it proved to be such a fine fruit, in compliment to Mr. Bordenave it has been named after him. It is certainly unlike any variety at present existing in our collections, and the probability is that it is some new kind which originated in the vicinity of Bordeaux, and has not yet found its way into the large nursery collections from which the greater part of our foreign pears are received.

This fine pear is a decided acquisition to our summer varieties; it comes in just before the Bartlett, at which season we have not an over abundance of fine kinds. It cannot, of course, compare in size or beauty with the Bartlett, or Flemish Beauty, but in its rich, sprightly and vinous juice, it surpasses either of those excellent sorts. It has that rich Brown Beurré "smack" which is found in but few of our new varieties.

The tree is a moderate grower, of upright habit, with rather slender wood, small foliage, and shoots of a yellowish shade.

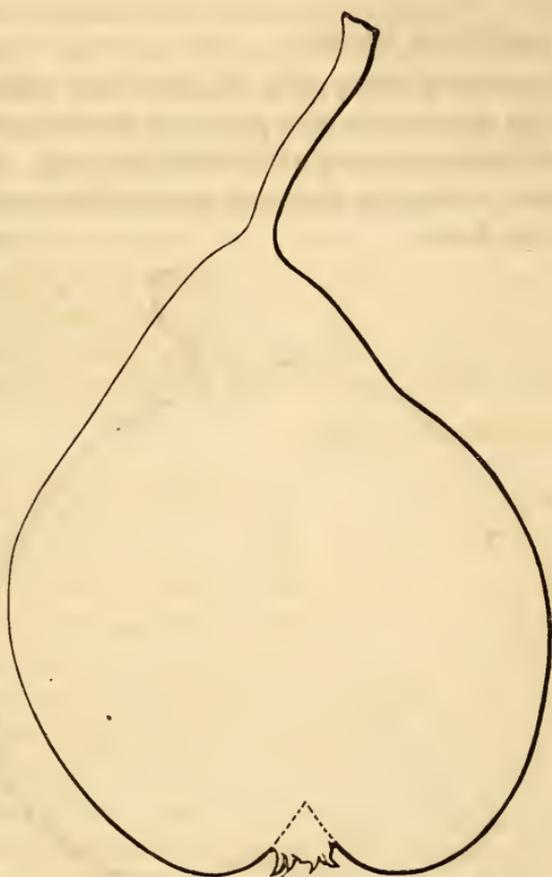


Fig. 46. Smith's Bordenave Pear.

Size, medium, about three inches long and two and a half in diameter; *Form*, pyramidal, with a somewhat uneven surface, large at the crown, suddenly contracted below the middle, and tapering to the stem; *Skin*, nearly smooth, deep green, mostly covered with tracings and patches of dull russet; *Stem*, rather long, about one and a quarter inches in length, moderately stout, curved and obliquely attached by a slightly fleshy base, without any cavity; *Eye*, medium size, partially open, and moderately sunk in a round smooth basin; segments of the calyx, long, pointed; *Flesh*, greenish white,

rather coarse, melting and juicy; *Flavor*, rich, vinous and sprightly, with a spicy aroma; *Core*, medium size; *Seeds*, small, nearly black. Ripe in September.

135. DUCHESS OF BERRY.

The Duchesse of Berry, (*fig. 47,*) has now fruited in our collection for three years, and proves to be an excellent pear, of much of the character of the White Doyenné. It is about the same size, of similar form, and possesses the same melting flesh and rich flavor.



Fig. 47. Duchesse of Berry Pear.

Of its origin we have no knowledge; we do not find it described in any accessible pomological work, and it is probably a new French or Belgium pear. Our first knowledge of it was from the *Catalogue* of M. Jamin, in 1844, and from him we received our trees, with many other new kinds.

The tree is of a spreading and somewhat rambling habit, of moderately vigorous growth, with reddish brown wood. It succeeds very well upon the quince.

Size, medium, about two and a half inches long, and nearly three in diameter; *Form*, roundish, regular, very full

at the crown, and rounding off to the stem; *Skin*, fair, smooth, clear pale yellow when mature, very regularly dotted with small russet specks; *Stem*, short, about half an inch long, stout, somewhat swollen, and obliquely inserted in a small contracted cavity; *Eye*, small, open, and little depressed in a small round smooth basin; segments of the calyx small, narrow, reflexed; *Flesh*, yellowish white, rather coarse, melting and juicy; *Flavor*, rich, sugary, perfumed and excellent; *Core*, medium size; *Seeds*, large, rather long. Ripe in September.

136. *INCONNUE VAN MONS.*

The *Inconnue Van Mons*, (*fig. 48*,) is believed to be one of the unnamed seedlings which were raised by the great

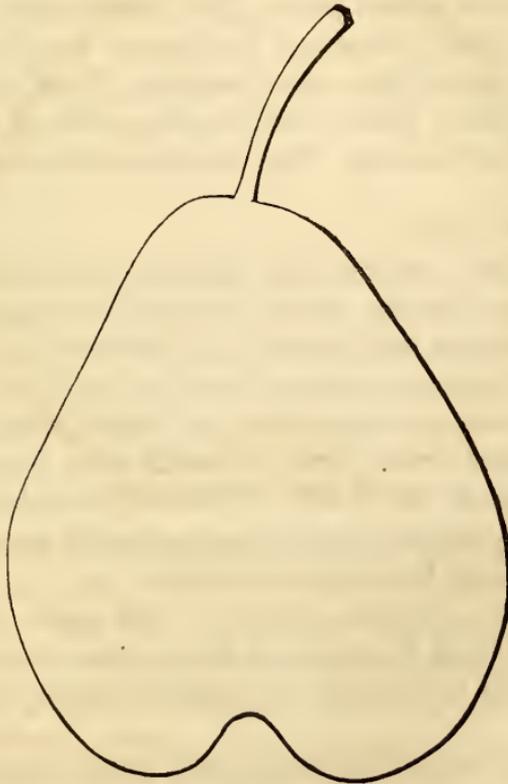


Fig. 48. Inconnue Van Mons Pear.

pomologist whose name it bears. It was sent by him to Mr. T. Rivers, nurseryman, of Sawbridgeworth, England, some

years since, who has disseminated it from his establishment. It proves to be a fine late pear, ripening in January and February, and though only of medium size a desirable kind in our present limited supply of good winter varieties. The tree appears to be hardy, vigorous, and productive, bearing early, and the fruit ripens off as readily as the d'Arenberg. The wood is strong, short-jointed, and of a brownish olive color. We have not tried it upon the quince.

Size, medium, about three inches long and two and a half in diameter; *Form*, pyramidal, rather full at the crown, and tapering regularly to the stem; *Skin*, fair, smooth, dull pale green, traced with russet around the crown and dotted with russet specks; *Stem*, medium length, about one inch long, rather slender, curved, and inserted without any depression upon a somewhat obtuse point; *Eye*, medium size, open, and inserted in a rather abrupt and moderately deep basin; segments of the calyx, short, often wanting; *Flesh*, white, fine, melting and juicy; *Flavor*, rich, sugary, perfumed and excellent; *Core*, medium size. Ripe from December to February.

137. BEURRE' SPRIN.

This new and excellent pear, (*fig.* 49,) was imported into the collections in Salem, several years ago, but it has attracted very little attention until recently. It proves to be a fine addition to our autumn varieties, being of good size, and fair appearance, somewhat resembling the Marie Louise, and producing abundant crops. Our specimens were from the garden of our friend Capt. Lovett, of Beverly, who has exhibited large and beautifully grown specimens at the meetings of the Massachusetts Horticultural Society.

We find no published account of this pear. It appears in the catalogue of M. Jamin, of Paris, where it is set down as a pear of the first quality, a reputation which it maintains with us.

Size, large, about three and a half inches long, and two and a half in diameter; *Form*, pyramidal, narrowing slightly towards the crown, and tapering to the stem; *Skin*, fair, slightly rough, yellow when mature, much covered with

patches and tracings of crimson or russet; *Stem*, short, about half an inch long, uneven, swollen at the base, somewhat fleshy, and obliquely inserted on one side of a projecting lip in a small cavity; *Eye*, small, partially closed, and moderate-

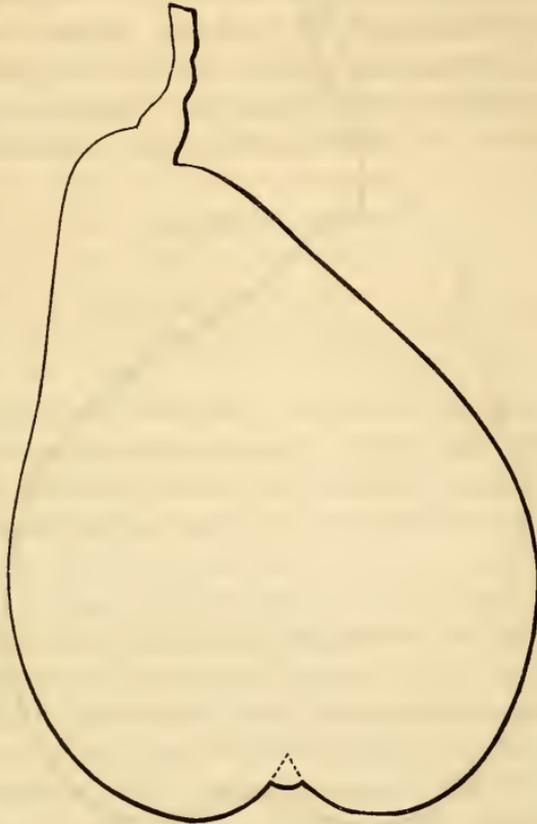


Fig. 49. Beurré Sprin Pear.

ly depressed in a small round basin; segments of the calyx very short; *Flesh*, yellowish white, little coarse, buttery, melting and juicy; *Flavor*, rich, sugary, pleasantly perfumed and excellent; *Core*, medium size; *Seeds*, large, long, pointed, brown. Ripe in October.

138. NOUVEAU POITEAU. *Journal d'Horticulture, de Belgique.*

This new pear, (*fig. 50,*) is one of the seedlings of Dr. Van Mons, and was raised by him in 1827, but the tree did

not come into bearing until 1843. According to M. Bouvier, who described it in the work above quoted, it was named at his proposal, by the sons of Van Mons, after the intimate friend of their father, M. Poiteau of Paris.

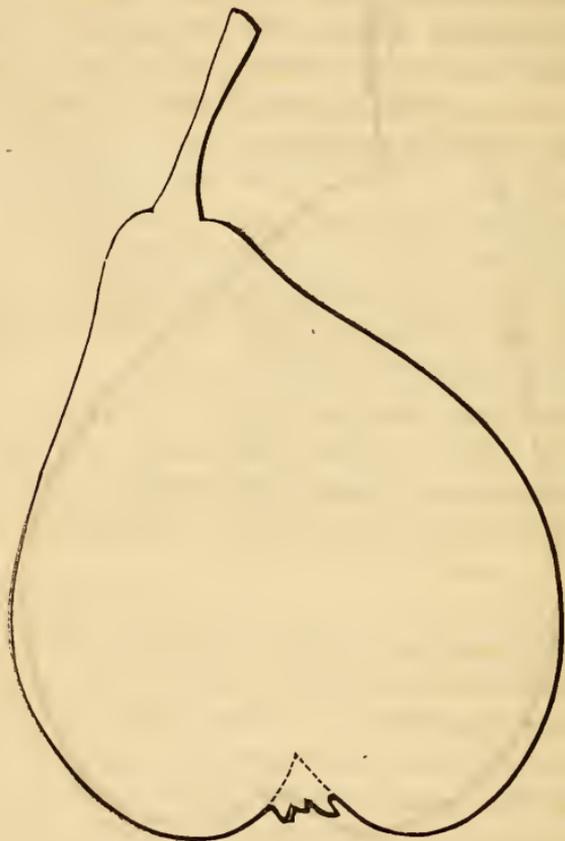


Fig. 50. Nouveau Poiteau Pear.

The Nouveau Poiteau was first introduced into American collections in 1845 or '46, and first fruited in 1850. It proves to be a large, handsome, and excellent variety, ripening in November, and keeping up the succession of large, showy and fine kinds. The tree is of an exceedingly vigorous and fine habit, bears rather young, and appears to be a most abundant bearer. It succeeds upon both the quince and pear stock.

Size, large, about four inches long, and two and three quarters in diameter; *Form*, pyramidal, full at the crown, tapering into the stem; *Skin*, fair, smooth, clear deep green,

marbled with brownish red in the sun, and dotted with russet specks; *Stem*, medium length, about three quarters of an inch long; moderately stout, fleshy at the base and obliquely inserted without any cavity; *Eye*, medium size, open, and moderately sunk in a contracted basin; segments of the calyx, short, partially reflexed; *Flesh*, greenish white, rather fine, melting and juicy; *Flavor*, vinous, rich, sugary and delicately perfumed; *Core*, small; *Seeds*, medium size, sharply pointed, dark. Ripe in November.

ART. II. *Market Gardening around London.*

By J. CUTHILL.

ASPARAGUS.—There is but one kind of Asparagus. A Mr. Grayson, an extensive grower on the south bank of the Thames, introduced what he called his "Giant" Asparagus; but it proved to be only the usual kind. He made it a "giant" by putting mould over the very largest heads he could find on his extensive beds, which covered about thirty acres. The heads were cut and shown in market as a new sort. They were about 18 inches or more in length, and 100 heads weighed 42 pounds; but unfortunately, like other asparagus, only three or four inches were fit for eating. There can be no doubt that the present plan of saving seed from the strongest plants has much improved asparagus. Immense quantities of roots are forced on two feet of dung in trenches having six inches of mould to plant in. These are then hooped over, and blanched, to make it look fine and white; the beds are prepared by putting on an immense quantity of manure, and trenching the ground three or four feet deep, mixing the manure as the work proceeds. In March the ground is measured out after the following manner. Suppose that a fence runs south and north, or otherwise, three feet is allowed between it and the first row; a drill is drawn about two inches deep, and the seed is sown thinly—say six inches or a foot apart, which gives choice of drawing

out the weakest, in order that the permanent crop may stand one foot apart. The next row is sown eighteen inches from the one just mentioned; then for the alley and two sides of the bed five feet are allowed; then another row of seeds and so on, which gives two rows to each bed. The first year onions are generally sown all over the ground; the second season lettuce, or any dwarf growing vegetable that will not choke the asparagus, and so on until the third year, when the beds are formed out, and a few inches of mould dug out of the alleys and put on the crowns; only a few, however, of the finest heads are cut this year. Autumn arrives, and when the haulm is cut the whole of the ground is forked over, and planted with cabbage, coleworts, or winter greens; then in spring the beds are largely supplied with mould out of the alleys, covering the crowns from eight to ten inches deep. The finishing of the cutting must be left to the grower. A fair crop of heads must be left after four or five weeks' cutting, in order in some measure to strengthen the young buds for the next year's growth, and to restore to the roots what has been taken from them in the shape of a crop; but not one head must be allowed to grow until you leave off cutting entirely at the end of the fourth year. When the haulm gets ripe it is all cut down, and the mould thrown into the alleys, and there enriched, and the whole of the beds and alleys are planted again with cabbages, greens, &c.

SEAKALE.—This is propagated by roots, or portions of them, after the following manner:—Towards spring, after the produce has been all cut out of the hooped beds, the roots are removed, all the “thongs” are cut off, and laid in large heaps; and as soon as the cut part or upper portion becomes calliced, ground is prepared for its reception, by manuring and trenching. The roots are then planted out a foot apart, in rows eighteen inches asunder, and a crop of lettuces is planted between them; as soon as the buds become visible, all are cut out, except the strongest, the ground is kept clean, and nothing more is done until November, when forcing is commenced. Then all the frames are removed, the dung and mould where cucumbers grew during summer are taken

away for cabbages or coleworts. The trenches, which are two feet deep are again filled with hot dung, and mould to the depth of eight inches is put on the dung. The seakale roots are dug up, all the small buds round the main eyes are pared off, leaving that by itself, which induces it to push stronger and finer; and now planting is commenced, a furrow is cut out by the spade across the bed, and they are put in as thickly as possible. Five feet across will hold from twenty-five to thirty roots; the next furrow is cut out four inches from the last, and so on until the whole is finished; from four to six inches of straw is placed immediately on the crowns. The beds are hooped over, and straw is put over the hoops; and in this way I have seen 50,000 plants forced during the winter and spring and by one man. All roots are removed from where they grow in summer, as they can be put in a much smaller compass elsewhere. Such is the way in which this delicious vegetable is grown by market gardeners, who thus bring it on slowly, excluding all air, and producing excellent food. Mr. Martin's plan of increasing seakale is this: At taking up time all the thongs are cut off before the plants are put in to force. In November the small prongs or end roots are at once cut into four-inch pieces and laid altogether in a heap for the winter. In February they are deposited thickly in beds, and covered with mould an inch deep; when sprouted it is seen by the buds which is the top, and by the roots which is the bottom. The ground being prepared, they are planted out as above. This last plan makes finer plants, as the whole of the strength is in the roots when cut off in winter, which is not the case after they have produced a crop. After forcing, the pores of the thongs must be empty, and they take a long time in recruiting.

RHUBARB.—Mr. Joseph Myatt, of Deptford, who is celebrated for his fine rhubarb, was the first to cultivate it on a large scale. It is now nearly forty years since he first sent his two sons to the Borough Market with five bunches, of which they could only sell three. Next time they went they took ten bunches with them, which were all sold. Mr.

Myatt could even then see that rhubarb would, in time, become a public favorite, and the result has proved the correctness of his views, for it is now generally used both by rich and poor ; it is no longer called "physic," as it was wont to be in bygone days. Rhubarb will grow in almost any soil provided it is rich ; but light land, well manured, will always produce a better flavored stalk than a stiff, retentive clay. We have had a great deal of rain this winter, and rhubarb in consequence is not near so well flavored as in a dry and rather frosty season ; the stalks are full of watery juice, which the roots have taken up ; and in some places the tops of the leaves are beginning to rot amongst the straw. This has led some market gardeners to adopt means of keeping the roots dry. Mr. Mitchell, of Enfield, has grown his Early Rhubarb this winter in the following manner. He lifted the roots, packed them, with a little mould between them, on the floors of long sheds, and covered the crowns two feet thick with tree leaves. These produced sufficient heat to bring it forward gently ; and I never saw better or finer rhubarb at Christmas. The usual plan of forcing it about London consists in digging long pits to the depth of two to three feet, introducing eighteen inches of hot dung, and then packing the roots closely together in a little mould, covering the crowns with hoops or with six inches of straw ; then hurdles or mats, and finishing with six or eight inches of straw, the amount of the latter depending on the severity of the winter. In this way strong well flavored stalks are produced, provided the weather is dry. The color is bright red, and the leaf is always very small. Many prefer forced rhubarb on account of its tender fibre. No skinning is required, and it is much less acid than that from the natural ground. Those who desire this kind of rhubarb, therefore, might easily obtain it by placing about a barrowful of straw over each crown. This covering would be cheap, and, besides bringing it on a little earlier, it would help to manure the ground and keep off frost. Rhubarb growing out of doors is so simple that little can be said respecting it. The ground being heavily manured, a plant is taken up and divided into as many eyes or

buds as it possesses. These are planted four feet apart, and by the autumn they will have produced roots from six pounds to ten pounds in weight. The oldest roots are generally taken up for forcing; and by always having a good rotation, the grower has the power of continually changing the ground, and thus obtaining a heavier crop. The forced plants will furnish eyes for a continual succession, without growing plants for the purpose, and the eyes may be divided and planted again for a main crop. I have practised this plan on a small scale many years ago.

The following are four first-rate sorts: Mitchell's Early Albert, Randall's Early Prolific (this is as yet little known, but it is eight or ten days earlier than the Linnæus; it is high colored and well flavored,) Myatt's Linnæus is next in earliness, and Myatt's Victoria is the latest. Twelve heads (leaves and stalks) of the latter weighed seventy pounds.

EARLY PEAS.—These are sown in rows three feet six inches apart, in December, on borders under walls, and by the sides of hedges; cabbages or White Cos lettuces pricked out of the frames, or from under the hoops, where they were becoming crowded, are planted between the rows. The peas are never staked up. The sorts used are the Early Frame and Improved Bishop's and Groom's Dwarf. Peas do not now pay the London growers. They are therefore largely grown in Kent, Essex, Surrey, and Bedford, where the ground is equally early and cheaper.

BEANS.—The Early Mazagan and Early Long-pod are grown upon warm borders in rows two feet six inches apart, with some other crop between the rows. The only care they require is taking their heads off after the plants show a fair quantity of blossom. This concentrates the sap, and makes them a week earlier. The main crops of beans are obtained from the counties above mentioned.

MUSHROOMS.—These are much sought after in Covent Garden market where their annual sale amounts to several thousand pottles, each pottle weighing a pound. Mushroom beds are made after the following manner:—As the fresh manure is brought home from the London stables, the short material is

shaken out of it, and the long strawy part is kept for the purposes of covering as well as for forming the interior of ridges, for all mushroom beds out of doors are made into ridges. The manure is not allowed to heat before it is put into the beds, if that can be prevented; for previously heated material does not produce such fine mushrooms. The fresher the horse-dung is the longer will the crop last; and every gardener who makes up beds with unheated droppings, knows how superior they are to fermented manure.

If this is properly attended to, it does not signify what kind of mould is used for surfacing the bed with. Market gardeners obtain enormous crops from ridges covered with common light well-enriched mould. When the interior temperature of the ridge gets down to 80°, it is spawned with pieces about two inches square, placed about a foot apart: the bed is then moulded over two inches thick, pressed with the feet and afterwards beaten with the spade. It is then watered and beaten again with the spade and smoothed down. The more the mould is pressed the finer the crop is, and the more solid the texture of the mushroom. This and green or unheated manure constitute the two grand secrets in mushroom growing. Mushroom beds made up in this way want but little watering, and when they are watered it ought to be with liquid manure. The ridges are covered with straw and mats; such ridges as these are continually being made, and when well formed, they last from two to three months in good bearing. I believe I am correct in saying that there are about ten acres of ground round London continually under mushrooms, which are all wanted for the various metropolitan markets.

MULCHING.—Summer covering, or mulching, with stable litter, is extensively practised by many of the first-rate market-gardeners, not only in the case of strawberries, but also in that of plantations of gooseberry and currant trees, as well as in some orchards. This mulching not only keeps all fruit clean, but it has many other advantages; for instance, it maintains the surface of the earth in a moist state, thereby preserving all top fibres, and, in addition to keeping down

weeds, when dug in, it enriches the ground. Unfortunately, if this covering or mulching was practised in private kitchen gardens, it would be considered slovenly. Nevertheless, it is my opinion that, during summer, all crops ought to have a good mulching. This would greatly assist hungry gardens, in which a necessary quantity of manure is not allowed.

ART. III. *Pomological Gossip.*

HOVEY'S SEEDLING STRAWBERRY. The character of c Seedling strawberry is so well known, and generally appreciated, that it seems superfluous to say anything respecting . We have no desire to do so, otherwise than to introduce letter from a gentleman, who has been a most successful cultivator of this fruit, and who has written several articles upon the subject in a contemporary journal.

Mr. Pardee, as he states, is a stranger to us, except so far as we are familiar with his articles on the strawberry ; and his remarks, we presume, are dictated by a desire to do justice to a variety about which there appears to exist a difference of opinion, as respects its general character. But we will let Mr. Pardee speak for himself:—

C. M. Hovey, Esq. Dear Sir:—Although I am a stranger to you, yet I am possessed of some facts respecting your Seedling strawberry, which I suppose will interest you, and this is my apology for writing to you.

I have a neighbor, an interesting old gentleman of the old school, Col. Jas. S. Stoddard, the very same man who originated and sent out "Stoddard's Seedling," but who, by the way, entirely abandoned both the raising and selling his own seedling after one season's selling, or as soon as he became convinced that the extraordinary production and size of the berry was more the result of his attentive cultivation, than any superior quality in his seedling, over and above its parent the Alpine, which, I believe, generally produces its like or very nearly so.

As soon as the Col. entertained a doubt about his berry not sustaining his expectation, he obtained a dozen strong plants of Hovey's Seedling, of J. J. Thomas, and planted them in his garden and gave them the most careful attention, until, in a year or two, he filled his garden entirely with Hovey's Seedling, and banished entirely his seedling, leaving but a small number of scattered plants of the Lord Spencer, as a staminate plant, on one border of his garden. His bed of Hovey's, at first cultivated in hills, bore astonishingly during four successive years, and although he allowed them to cover the ground the last two years, yet every plant appeared to bear perfect fruit and in the greatest abundance. He supplied his neighbors with some of the same plants, which would with their care fail to bear. This summer he has renewed his beds and planted out 8000 Hovey's, two plants in a hill, with a care and perfection I have never seen equalled. He steadfastly refuses (from all quarters) to try even any other kind, and does not believe any other kind worth trying compared with Hovey's. Having nothing to do but to watch (he is a most careful observer) and take care of his garden, which is almost entirely or at least mainly devoted to those strawberries, he cultivates them with a skill and assiduity I have never seen at all equalled. He set out his new beds in July, and has carefully hoed them every week since, keeping them perfectly clean, and if a dry time occurs, he will sprinkle them with two hundred pails full of water per day. His vines are in hills full two feet or more apart, and, even now, almost cover the ground. I never saw so fine looking plants in my life, and from the dark color and thrifty appearance, I risk nothing in saying, if the Col's life is spared, he will show next season, the finest strawberry bed, of the same size, with the most fruit on, this or any other country ever produced. He is doing his best to sustain the reputation of Hovey's against any and every odds, and he takes great pleasure in it. He says he believes the excellences of Hovey's Seedling is yet but imperfectly appreciated anywhere, and he is going to see if it can be beat. He thinks by a careful selection of plants, and attentive cultiva-

tion, sufficient stamens will be produced on Hovey's to fertilize them. Some parts of his Hovey's, have been the distance of one to two hundred feet from any other kinds. He never allows the plants to receive a check while on his ground, but constantly thriving.

It is no ordinary privilege to visit monthly, or oftener, such beds of berries as he raises, and if you come West next June, I can assure you it will be worth your stopping to see the Col's bed of Hovey's, for they will astonish you; and I doubt whether even Boston can equal the Col. in skill in cultivating them, and our soil in Western New York is very favorable for strawberries.

The Col. never trenches over a spade deep, and puts none but the most completely rotted manure on his ground.

Excuse my hasty letter. I tried to persuade the Col. to write, but he is too old, he says, and I am so much interested in his success, I could but write the originator of the fine Seedling. I am very respectfully yours, R. G. PARDEE.

Palmyra, Wayne Co. N. Y., Sept. 11th, 1851.

It is really gratifying to meet, occasionally, with some of these gentlemen "of the old school," as Col. Stoddard appears to be; whose solid judgment and sterling common sense are not warped and influenced by every whim of the day; who look upon quackery in gardening, as upon all other quackery, and would no more lend their influence to one, than to the other. We have no doubt but that he is perfectly willing cultivators may burn up whole beds of plants, analyze their ashes, and experiment to their hearts' content, if they choose to do so, while he, in the mean time, goes on in his own way, reaping the most abundant harvests.

The example of Col. Stoddard in discarding at once his own seedling strawberry, which, at the time, was so highly spoken of, is well worthy of imitation; if other cultivators would do the same, our catalogues of strawberries would soon be "beautifully less" in number, while the public would be great gainers. We believe we stated at the time, not with any view of lessening the value of his seedling, but in ac-

cordance with what we considered to be our duty, that it would be found to be nothing more than the Wood under high culture; and though to this day we were not aware that Col. Stoddard had given up its cultivation, it only shows that we were correct in our remarks.

After the achievement in the culture of Hovey's Seedling, by Mr. Pell, of New York, by which he raised them *eight inches in circumference* and weighing *two ounces*, we are ready to admit with Col. Stoddard, "that its excellences are but imperfectly appreciated," and we hope we may have the gratification of witnessing, another year, what he has done to sustain, as Mr. Pardee says, "its reputation." If he equals Mr. Pell he will accomplish a good work; if he excels him, he will do more than has yet been done in the culture of this fruit.

EXHIBITION OF PEARS AT THE ANNUAL EXHIBITION OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—Our report of the fine display of fruit on this occasion, will be found in another page. It was certainly, notwithstanding the dry season, one of the finest exhibitions of the pear, ever made in this country. It would have done some of the croakers, who talk of our "sandy soil and rude climate," a deal of good, to have looked in upon the huge specimens of Duchesses, Beurré Diels, Bartletts, Louise Bonnes, &c. &c., weighing, some of them, more than a pound each. It quite astonished us to see such results, after the great drought of the summer.

The specimens for premium were extraordinarily fine, and it was with no little difficulty, we believe, that the committee made up their award, so nearly equal were the fruits of the competitors. The varieties in the premium stands were as follows:—

From Jos. Stickney, Le Curé, Bartlett, Dix, Flemish Beauty, Belle Lucrative, Duchess of Angouleme, Colmar d'Aremberg, Andrews, Thompson, Napoleon, Beurré Diel, and Louise Bonne of Jersey.

From S. Downer, Jr., Columbia, Passe Colmar, Beurré Diel, Napoleon, Duchess of Angouleme, Urbaniste, Leon le Clerc Van Mons, Chaumontelle, Glout Morceau, Bartlett, Louise Bonne of Jersey, and White Doyenné.

From M. P. Wilder, Leon le Clerc Van Mons, Beurré d'Anjou, Columbia, Duchess of Angouleme, Dunmore, Beurre Diel, Urbaniste, Le Curé, Passe Colmar, Golden Beurré of Bilboa, Glout Morceau, and Louise Bonne of Jersey.

From W. Schimming, gardener to J. P. Cushing, Catillac, Beurré Diel, Duchess of Angouleme, Seckel, Gansell's Bergamot, St. André, Easter Beurré, Doyenné Gris, White Doyenné, Winter Nelis, Louise Bonne of Jersey, and Glout Morceau.

From Hovey & Co., Beurré Langelier, Swan's Orange, Beurré Diel, Doyenné Boussock, White Doyenné, Duchess of Angouleme, Flemish Beauty, Louise Bonne of Jersey, Leon le Clerc Van Mons, Belle Lucrative, Glout Morceau, and Bartlett.

ART. IV. *Notes on Summer and Autumn Flowering Greenhouse Plants.* By HORTUS.

PLUMBAGOS.

P. capensis and *P. Larpéntæ* are elegant decorative plants; the flowers of the former are of a pale blue, and those of the latter of a deep clear blue color, forming a beautiful object when well grown. *P. capensis* is a strong, free growing plant, of a straggling habit, requiring frequent pinching in the young shoots to form a good shaped plant; it should be spur pruned, like a grape vine, after it has done flowering, kept cool and dry all winter and repotted in spring. *P. Larpéntæ* is of more recent introduction and slender in growth; it was found growing on the city wall of Shanghæ, in China, so that it requires good drainage and rather moderate supply of water, at least when young or newly potted; it seems to grow with the greatest vigor without any more water than it receives from slight syringing once or twice a day; it may prove hardy on a dry border and also make a good plant for flower beds in summer, in shady situations. Blue flowered plants, adapted for the flower garden, are not numerous and

if this subject be found suitable for this purpose, it will be a decided acquisition. Cuttings, rooted in the fall, should be kept in small pots all winter, and turned out in the flower garden in May; they should be kept rather dry all winter; they grow best in a porous sandy loam, pots particularly well drained.

ACHIMENES

Can hardly be dispensed with for greenhouses during summer; the varieties are numerous and distinct, both in foliage and flower. Grandiflora, longiflora, picta, patens, coccinea, rosea, pedunculata, and multiflora, are good varieties. They are chiefly propagated by the tubers which are plentifully produced at the roots; these should be started in succession from February to May, covering them slightly with soil; when sufficiently advanced for potting they can be placed singly in small pots, or in masses in large ones; a moist shaded atmosphere is indispensable to their proper development; they are not particular to soil, so that it is sufficiently porous to allow free percolation of water and air. After the plants have done flowering, and the tops die down, the tubers may either be allowed to remain undisturbed in the pots, or shaken out and preserved in sand, merely keeping them dry and free from frost.

THUNBERGIAS.

These are showy, slender-growing plants. *T. alata* and its different varieties are very ornamental if allowed to hang naturally over the pot. There are several species of this genus. The simplest method of raising them is from seed; sow early in spring, and pot singly when of sufficient size; they grow well in rich turfy soil, and require plenty of pot room. They must have plenty of water while flowering, and are much benefited by applications of manure water. To save seed, set a plant out of doors towards the end of summer; the seed will form and ripen better than in the house. Cuttings may be rooted in August and kept all winter at the warmest end of the house; very little water will suffice them at this season.

FUCHSIAS

Are everywhere esteemed as the most graceful of greenhouse plants; they thrive well in light turfy soil,—if mixed with pieces of charcoal or broken bones, so much the better. Old plants should have all the old soil shaken from their roots early in spring; shorten in the roots and repot them in small pots, to be subsequently shifted as they require. Frequent syringings are very beneficial to them when starting into growth. They look best when grown in a pyramidal form, to effect which a good strong shoot should be selected as a leader, and tied to an upright stake; by pinching out the points of the side branches a dense conical bush may be obtained. When the blooming season is over, they should be set out of doors, duly supplied with water, to ripen the wood perfectly, otherwise they will start feebly in the following spring. When deciduous they require no water. Cuttings rooted in the fall, and shifted in spring in fresh soil, make the finest plants. Seeds sown in early spring will flower the same year in five-inch pots. The following kinds are pretty: *Acantha*, *corallina*, *Napoleon*, *flavescens*, *globosa major*, *One in the ring*, *Goliah*, *Recurva*, *Snowdrop*, *Beauty of Salisbury*, and *Magnificent*.

HIBISCUSES.

The Chinese rose *Hibiscus* and its varieties are very showy flowering plants. The single varieties seed freely and may be increased by this means. Cuttings of the double varieties planted in August, and kept in small pots carefully watered all winter, will attain a large size the following year if attended to. A soil of a rich turfy character is requisite, to which may be added a portion of decomposed manure. Repot in spring if requisite, and supply abundantly with water, both at root and top, when in leaf. Keep them dryer as the flowers fade, and place them in a dry warm situation in winter.

GARDENIAS.

These are familiar as the Cape Jasmynes, and although many of the numerous species require a hothouse to bring

them to perfection, *G. rádicans* and *G. flórida* succeed well in the greenhouse; they are beautiful evergreens, flowers white, and very fragrant. Their management is comparatively easy, although in winter they require care in watering, very little being necessary. As a general rule all plants of a tender nature should be kept rather dry in cold weather. The soil for them should be sandy loam, with rubbly stones mixed in it; perfect drainage of the pots is indispensable. Shift in spring or early summer. Towards the end of summer they may be fully exposed to the weather for a month or two. Cuttings of the young shoots strike root pretty freely.

CLERODENDRONS.

These are very robust, strong growing plants, with large foliage and magnificent heads of bloom. They require plenty of pot-room and a strong turfy soil to grow them well; they become deciduous in the fall and must be placed in the warmest end of the house during winter, or at least kept perfectly free from cold or damps. As soon as they show signs of growth they must be repotted, all the roots shaken out and pruned in, so that they may be placed in small pots to admit of shiftings as the plant progresses. Plenty of moisture is their principal requirement when once they get established in the pots. They are easily increased, either from seed or by cuttings from the young wood in spring.

NERIUM OLEANDER.

This is a very plentiful plant, but seldom receives proper treatment, many specimens being lanky and scanty of foliage. Old plants of this character should be well cut down, and when new shoots are formed, turn it out the pot and clean away most of the old soil and repot carefully shaking the soil properly about the roots. To enable them to have fine clean foliage, they should be frequently syringed overhead during their growth. This plant can be made to form a fine shape by proper pruning in over luxuriant shoots. The pyramidal shape is certainly best for all plants, as it exposes the largest surface to light and air. They can be set

out of doors towards the end of summer, and kept in a warm light place in the house during winter; kept rather dry than otherwise. Cuttings root freely.

CHRYSANTHEMUMS.

The chrysanthemum is one of the best autumn flowering plants; their various colors enliven a greenhouse at a season when few plants are in bloom. It is of the easiest culture, and fine specimens for the house may be obtained from old stools in the border, potting them in August, setting them in a shady spot for a few days, afterwards fully exposing them to the sun to keep them dwarf and stocky. Cuttings struck in May and shifted as they require will make fine bushy plants if the tops are constantly pinched out of every shoot, until the end of July, when they should be allowed to form flower buds. Very fine dwarf flowering plants can be obtained by layering the stems in August in four-inch pots. Giving the stem a twist at the desired height, and secure them in the soil with a peg, they will soon form roots, when they can be separated from the stock. Any good strong loamy soil will suit them. They should be duly supplied with water, otherwise the bottom leaves will yellow and fall off. Watering with manure water after the flower buds are formed, will increase the size and beauty of the flowers. After they are past flowering turn them out in the flower border, and cover slightly with leaves.

September 1, 1851.

ART. V. *Drainage of Plants grown in Pots.*

By H. BOCK.

THE general laws which regulate the vegetable economy are applicable alike to plants grown in the open ground, and to those cultivated in pots; the vegetative principle is never changed or altered either in plants subjected to artificial treatment, or in those which may be said to occupy a more natu-

ral position. In accordance with this theory there is a trite saying, that plants, when grown in pots, should be treated in all essential particulars like those grown in the open ground, or, in other words, that the gardener should do in pot culture what the farmer practises in a field; and since the system of drainage effects astonishing results in agriculture, it is not unreasonable to expect similar advantages from its application to the purposes of horticulture.

But the operation of draining a pot requires to be performed with a perfect understanding as to the mode in which it is likely to have a beneficial effect. When only a piece of broken potsherd or any other substance is placed over the hole at the bottom of the pot which is being drained, the percolation and escape of superabundant moisture will, in all likelihood, be prevented by the pressure of the soil around it; the water will lodge at the bottom of the pot, and the roots of the plant will suffer, owing to the free circulation of air being impeded. It is, therefore, reasonable to infer that, besides the principal crock that covers the hole, other or additional materials are necessary.

In the first place, the crock should be placed so that it does not lie *flat* over the hole; for when lying positively flat it is very apt to stop up the passage of the water. When the crock has been properly placed it should be covered with a quantity of small pieces of brick, broken pots, angular stones of any kind, or similar materials; above this superstructure, which may range from an inch to two inches in depth, (according to the size of the pot,) should be placed a layer of the same kind of material, broken considerably smaller, so that the soil, when placed in the pot, may not choke up the interstices of the under layer; or even fill them too much in being pressed or shaken down. It is now well known that pieces of bricks, from their porous texture, act in the manner of a sponge for the azote, which is so essential to the nourishment of plants. Such substances become, in fact, by their physical action and chemical properties, an actual manure for plants. By means of them the soil in the pot becomes aërated, and the water passes freely off; the plant must in consequence be under the best condition to secure its health.

It may be readily conceived that if, in this under-layer of drainage materials, there was placed a physical body constituted so as to operate in a threefold manner to retain one of the elements of air the most useful to vegetation, to allow the air to penetrate the mass of soil, and to facilitate the proper passage of the water from the roots, and which, at the same time, by gradual decomposition, incessantly transmitted from below fresh nourishment to the roots,—a substance possessing these advantages would certainly be the most suitable to be used in the cultivation of plants in pots. In countries where great progress has been made in the cultivation of the soil, we see that not only is the ground traversed with drains and properly aerated, but it is also manured with substances which, by their gradual decomposition, minister to the daily requirements of the plants grown. Are similar results not attainable with plants cultivated in pots? We cannot hazard a negative reply to such a question.

Some cultivators have adopted the system of draining the pots by means of broken or crushed bones, which, having the same absorbing qualities as the pieces of brick, even in a higher degree, are still more susceptible of gradual decomposition, especially after they have been treated with sulphuric acid, weakened by water. The bones thus throw off or disengage ammoniacal gas, and furnish a quantity of sulphate and calcareous phosphate, all of which are essential to the nourishment of plants. Even for plants which admit only of being grown in peat, the beneficial effects of broken bones have been fully proved to be considerable and decided.

Cushing's Gardens, Watertown, Mass., August 1851.

We commend the above excellent paper to every cultivator of plants, as a complete *rationale* of the philosophy of drainage. More plants are injured from a want of the knowledge of proper drainage than from almost any other cause.—Ed.

ART. VI. *Notes on Gardens and Nurseries.*

Linnère, Residence of R. S. Fay, Esq., September 1. In our volume for 1849, (XV, p. 399,) we gave some account of this new place, and the improvements which had been made, and of others in contemplation. Since that time, now more than two years, a great alteration has been made in the grounds. The proprietor has been abroad in Europe since 1849, but he has not neglected anything in regard to the improvements upon his place. The improvements are mainly the planting of quantities of trees, mostly evergreens, over the very large tract of land which is comprised within the limits of Linnère. The proprietor has sent home large quantities of seedling evergreen trees, which have been planted in nursery rows, and these, together with such as were previously set out, and others raised from seed upon the grounds, now number many thousands—enough already to very essentially change the features of the place, when they are removed to their appropriate places. But these are only the beginning, for Mr. Fay will spare no ordinary expense to render his grounds the most interesting in their arboricultural character, of any in the vicinity. Our visit was made at the present time, mainly to inspect the evergreens, particularly those of which we made mention before, and some of which were new sorts whose hardness had not been tested in our climate. But we are gratified to state that all, with but one or two exceptions, have grown finely, though not so thriftily as they would have done in some places. The kinds were as follows:—

Pinus cémbra, 1 foot high, now 4 feet, fine.

Pinus excélsa, 2 feet, now 5 feet, very fine.

Picea pinsàpo, 2 feet, now 5 feet, handsome.

Abies Smithiàna, 2 feet, now 5 feet, and beautiful.

Cèdrus Deodàra, 2 feet, now 6 feet, beautifully branched, and an elegant drooping tree. There are many specimens of these.

Cryptomèria japónica, 2 feet, now 5 feet. This has been

protected with cedar boughs only, and has grown well, though not set out till the fall of 1849. It will undoubtedly prove hardy.

An Austrian pine, brought home by Mr. Fay in 1848, in a small 6 inch basket, was now *nine* feet high, and proportionally broad.

The principal evergreens which have been planted in nursery rows for future removal, are the Austrian and Scotch pines, Norway spruce, Silver fir, White pine and Arbor vitæ—also many thousands of the Scotch larch.

The success of Mr. Fay is encouraging to all lovers of ornamental improvement; for how different must be the effect of our winter scenery, with all the above kinds of trees, intermixed with the common sorts, which have exclusively been planted. It is no longer a matter of doubt in regard to the hardiness of all we have enumerated, particularly the Deodar cedar, for which many fears were entertained in regard to its capability of withstanding our severe winters.

All the trees planted on the avenue leading to the house have done well, saving the drought of the season, and many of the silver leaf maples have made a very great growth, and add more to the beauty of the avenue than the others. The oaks have done the poorest; but this, we think, was owing much more to the size and character of the trees, than to the kind of tree.

At another time we hope to give a more particular account of several of the new deciduous and other trees which have been planted, as well as Mr. Fay's success in raising seedling oaks, beeches, &c. with which he has had good success.

Garden of O. Johnson. Taking advantage of a visit to Lynn, we called upon our friend Mr. Johnson, in order to have a look at his fine garden. We found it, as usual, in the finest order as regards good keeping, but suffering very severely on account of the long continued drought, which appears to have been unusually severe here. The flower garden was entirely divested of its beauty, and the fruit and kitchen garden had not the vigorous and healthy appearance of previous seasons. The pear trees were, indeed, in some

instances quite yellow, so much had the foliage been affected. The pear crop has been unusually light this year here, and the only notable things were the Green Gage plums, which were very fine, the trees being loaded down ; and the Duchess of Angouleme pears, which Mr. Johnson always raises, of large size and great beauty. The Duchess is trained to a trellis, and has not failed to bear a fair crop every year. It is well known that this variety is a shy bearer, in most places, always flowering full, but the flowers immediately falling before the fruit is set. Whether it requires the protection afforded by a fence, to make it set or not, we cannot say ; but that this tree should always bear, seems to prove it. In a more favorable time we should have found much more to note, than at our present visit.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

FLORICULTURE OF THE TOILET.—One of the favorite amusements of infancy is to plait crowns with the wild flowers of the woods and fields. The timid lover expresses his passion by the homage of a bouquet ; and the young belle naively abandons to her favorite the flowers which decked her brow or withered on her bosom. Old age itself smiles on flowers. Crowns and other garlands may be traced to the most remote antiquity. Among the Greeks and Romans the crown was, so to speak, the ordinary hair-dress of the great philosophers. Socrates had always his head encircled with flowers. Alcibiades changed his crown three times a day. At eighty years of age Anacreon mixed roses with his white hairs. Cæsar, who was bald at thirty years of age, was indebted for a long time to the crown of flowers to conceal this defect from the beauties of Rome. At Athens, as at Rome, no one could present himself in public without his crown. At the present day there is an evident inclination to return to the better customs of Greece and Rome, and no fashionable lady can present herself respectably at a ball, or an evening party, without having a rose or a camellia in her breast. Let us hope that in a short time the crown and the bouquet will be rigorously enforced in every re-union which has pleasure for its object. Why should not our ladies abandon the ungraceful cap for the odoriferous crown of flowers ? Flowers are, besides, the natural emblem of luxury, riches, and abundance. By-and-by, we feel pretty sure, they will replace the absurd cap, however costly it may be made. In order to render this part of horticulture directly realizable, we shall pass on to the

descriptions of head-dress in fashion—the first since 1847; the second during the present year, 1851; and the third, with some exceptions, at intermittent periods. *COIFFURE A LA FLORE*, (Head-dress of Flowers.) This is suitable for those persons whose proportions and forms are of the most perfect character, and which come nearest the Grecian type. The profile especially must be one of those which are commonly found represented on ancient bas-reliefs. This head-dress is worn with the hair arranged in graceful wavy locks, the back being tied in a bunch, merely with a narrow band, and the ends floating down. The crown of flowers does not in this case form a diadem, but is tied in a knot behind, and at the lowest part of the head, from which point it gradually enlarges till it reaches the front, or the point immediately above the brow. This form of crown is composed of high-colored flowers, as the rose, narcissus, hyacinth, camellia, carnation, and sometimes an orchid; and it is bordered with ericas and distichous cypress, terminating in leaves, with the more slender or fine parts of branches of flowers, which take an upright, and at the same time a nodding form. The ancient ear-rings, and the string of pearls around the neck, harmonize admirably with this head dress, which, invented more than a thousand years, is not the less handsome, and in keeping with good taste. *COIFFURE A LA CERES*, (Head-dress of Cereals.)—This kind of head-dress," says M. Lachaume, "is worn with either even or wavy locks. It is very graceful, but only suited for those ladies who have the head well proportioned. It should always be made in the form of a diadem in front, from the top of the brow. It is best formed (plaited) of the small flowers of roses or of camellias, mixed with violets, pinks, &c. The erica, or any very light foliage, is indispensable." We shall only add that nothing can be more graceful or appropriate than one or two spikes of *Hordeum zeocriton*, *H. hexastichon*, *Triticum monococcum*, and other ornamental grains. They are used dry for this purpose, and decorated, by means of gum, with gold or silver in leaf. Ladies make elegant bouquets of these cereals, which last throughout the winter. Cereals for head-dresses should be sown in spring, and the golden yellow spikes when matured have a charming effect among the flowers which have been already named. In winter the forced flowers of *Pyrus japonica*, as well as the *Cœlestina*, will be found very serviceable. *COIFFURE A LA POMONE*, (Head-dress of Fruit.)—This form is chiefly suitable for those who have a large and robust figure and a healthy, high-colored complexion. The crown is large, formed of fruits and leaves of the most select sorts. The top of the corset is also furnished with a garland formed in a similar manner. This style of ornament has many resources which are much ignored by *artistes*. The pretty red berries of *Ardisia crenulata* have a fine effect, resembling bunches of coral beads, and which may be obtained during the whole winter in our stoves. The short-fruited spikes of *Chamærops humilis* are equally desirable, and may be as readily obtained. Many of the common thorn, or *Cratægas*, also furnish abundant resources. The white berries of the Mistletoe, (*Viscum album*,) with their leathery leaves, which do not soon fade, are excellent for this purpose, as well as the pearly berries of *Rhipsolis*. Besides many

varieties of natural fruits, imitations in glass, especially small bunches of grapes, are very effective.—(*Gard. Journal*, 1851, p. 582.)

NEW FLOWERS AND FRUITS IN THE GARDEN OF THE LONDON HORTICULTURAL SOCIETY.—Among new plants raised are some from Californian seeds. They consist of a shrubby *Spiræa*, said to have pink flowers; a *Philadelphus*, with spikes of white blossoms, said to be fragrant; some purple and white flowered bulbs, a white *Lupin*, a shrubby *Pentstemon*, reported to attain a height of three feet, the blooms being white and purple, and produced in early spring; a blue *Pentstemon*, (apparently a *Scutellaria*.) *Erysimum Arkansanum*, stated to reach three feet in height, and to be more beautiful than *E. Peroffskianum*; and some other plants, whose true characters it will require some time yet to prove. A few Russian and New Holland plants have also been raised, to which the same remark applies. Among the former may be mentioned *Araucaria Cookii*, an interesting kind in the way of, but distinct from, *A. excelsa*. A quantity of oaks, said to be evergreen, has been raised from seeds received from Koor-distan. They are nice plants, and will soon be ready for distribution.

In one of the vineries we observed the Chasselas Musque grape nearly ripe, but not split, as is customary with it. This is prevented by keeping the border in an equable state. If the latter is permitted to become too dry, and suddenly saturated with water, the fruit is sure to split. The same thing happens with plums in certain stages of growth, on the occurrence of much wet after drought. Reeves' Muscadine was bearing largely. It is a Cape grape, of good quality, and a certain bearer. A good crop of peaches has been secured on the wall, coping boards having been the chief protection in spring. Among the varieties was the Shanghae peach, introduced by Mr. Fortune. It resembles the Late Admirable, and is very good, but hardly adapted to our cold springs. It is reported to succeed admirably in the climate of Paris. Ripened there the fruit is said to be delicious. The Pucelle de Malines and Malta peaches are both good kinds. The latter is, however, rather a shy grower. The Imperatrice and Balgowan nectarines are worth attention. If the former is allowed to hang on the tree till it shrivels, it is very rich. Some fruit of the latter, which is like the Violette Hative, measured eight inches in circumference. We also remarked Denny's Victoria plum, which is identical with the Alderton, a place in Sussex, where old trees of it are growing. Apples are a tolerable crop. They are better on standards than on dwarfs. Pears have been much thinned by the spring frosts.

Among apples in the fruit room, we remarked the summer Golden Pippin, a first class variety; Reinette de Laak, a handsome sort, something like the Golden Reinette, but rather more Pearmain shaped; the Gravenstein, tolerably perfect notwithstanding our cold season; Kerry, Oslin and Wormsley Pippins; the latter is a good apple, both for kitchen and table use. Associated with these was also a little known apple called Baleborodova, a Russian variety, large, ovate, red next the sun, and bearing a delicate bloom like that of a plum. It is a fine looking apple, with an agreeable brisk flavor.—(*Gard. Chron.*, 1851, p. 598.)

GATHERING AND STORING FRUIT.—The gathering, storing, and subsequent care of winter fruit, does not in the majority of instances receive from the gardener that degree of attention which the importance of those particular branches of his calling entitle them to. That such should be so, becomes a matter of astonishment, when we recollect that from such fruit the kitchen and dessert are to be principally supplied for so long a period—at least, so far as the winter produce of the garden is concerned. So that the fruit is gathered, and conveyed to the fruit room, or to some nondescript structure dignified with that appellation, is often all that is cared for. The performance of the operation is entrusted to laborers and boys, who possess not the least idea of the importance of their occupation, or of the manner in which it should be performed. Stems are plucked out by careless gathering, leaving wounds which soon destroy the fruit. Baskets are heaped one upon another, bruising the majority of the fruit, and inducing ultimate decay. Good and bad are huddled promiscuously together, to be heaped up in the fruit room, till leisure, or a wet day, gives a more fitting opportunity to assort them. The latter operation is often delayed till sad inroads are made in the better as well as the more inferior of the fruit. Where well kept fruits are desired, too much care cannot be bestowed on the gathering and storing. In the former operation, they should be carefully selected from the trees at a proper season, which a practised eye will alone ascertain. In the baskets, or in whatever receptacle they are conveyed to the fruit room, they should not be allowed to press one upon another in too great quantities. None but the very prime specimens should be associated for long keeping. All inferior or damaged fruit should be put aside, to be used immediately, or as occasion requires. When your fine fruit reaches the fruit room, delicate handling should by no means be disregarded. They should, one by one, be carefully placed where they are to remain; and not, as is often done, turn them out of the baskets in a mass, damaging half the contents in the process. After storing has ceased, frequent and careful examination, at least among the superior fruits, should be made. Different kinds of fruit exhibit peculiarities in their mode of decay, and these peculiarities are constant. Some of them are, however, more infectious than others. Many early ripening pears decay rapidly, without any outward indications, becoming what is technically termed “sleepy.” Various other kinds, which remain in perfection to a lengthened period, decay naturally in a similar manner. The Swan’s-egg pear decays in spots on its exterior, which gradually enlarge, till the whole fruit is rotten. The peculiar flavor of the decaying portions of this fruit is confined entirely to itself. The nearest approach to the latter mode of decay takes place in the Ribstone Pippin apple, especially if stored in a damp and impure atmosphere. Many kinds of decay—premature decay, and the most to be dreaded in a fruit room—arise from the decomposing substance being attacked by minute fungi in the form of mildew. These minute vegetables disseminate their invisible germs in myriads, ever ready to establish themselves in suitable situations for vegetating. Bruised and damaged fruit offer the necessary situations; and, being once established, their progress is rapid. Speaking

of the Ribstone Pippin as decaying in a confined and impure atmosphere, we may mention an illustrative instance. Calling one day at a garden, the superintendent of which was somewhat of the old school, we were shown into the fruit room, and our attention was directed to a number of this fruit, nearly all of which were decaying in the manner before described; and the flavor of those not decaying was anything but palatable. The gardener assured us that he had lost his fruit in the same manner every season since the fruit room had been built. We may observe that the room, which was very small, appeared to be the receptacle of every kind of rubbish. On the floor were heaps of potatoes, many of them decaying, and emitting no very attractive odors. In one corner, a quantity of half-rotten apples; in another, a heap of damp rubbish; there a quantity of cucumbers and vegetable marrows retained for seed, the former half putrid; with numerous other matters, equally foreign to a well regulated fruit room. But of the Ribstone Pippins. Previously to this fruit room being built, the fruit had for several years been stored in a large airy room, at some distance from the garden. There, no such symptoms as have been described evinced themselves, and the fruit was invariably of a proper flavor. It is hoped that no comment is necessary on a case like this. It may, however, be observed that the fruit room is often the receptacle of things which good management would exclude. A remarkable proof that careful gathering and storing have much to do in the preservation of apples and pears to a lengthened period, is afforded by the examination of such kinds of fruit in the hands of good garden amateurs, who possess but limited quantities, and are careful of its preservation. Such persons will produce a dessert of such for their own tables, or to grace the tables of a provincial horticultural show, when the majority of larger establishments are unable to do so.— (*Gard. Jour.*, 1851, p. 515.)

ART. II. *Domestic Notices.*

THE N. Y. STATE AGRICULTURAL SOCIETY'S FAIR, at Rochester, on the 16, 17 and 18th, was one of the best the society ever made. The vicinity of Rochester is celebrated for its fine fruits, and on this occasion amateurs and nurserymen were well represented by fine collections of apples, pears, &c. The report for premiums has been published, and we notice our friends Messrs Ellwanger & Barry come in for a good share of the premiums. The best and largest collection of apples, and the best collection of new pears, came from these nurserymen; they also carried off the prizes for the greatest variety and quantity of flowers, and the best greenhouse plants. Mr. Morse, of Cayuga Bridge, had the best collection of good pears. The premium for the best grapes grown under glass, was awarded to Messrs Bissell & Hooker of Rochester.

POMOLOGICAL DISCUSSION AT ROCHESTER. During the fair, a meeting of amateur cultivators, pomologists and nurserymen, was held, at which the merits of the Hawley, Northern Spy and Wagener apples, were fully dis-

cussed. The principal speakers were Messrs L. F. Allen, Col. Hodge, Barry, J. W. Bissell, Hooker, Smith, of Macedon, Langworthy, and Ford. The discussion, which was of some length, and which we may refer to again, resulted in the passage of the following votes:—

Hawley.—That it belongs in the first class, but we have not sufficient experience upon the subject to state what kind of soil is best suited to it.

Northern Spy.—That it be regarded as a fruit of the first quality, of excellent flavor, and of high, good keeping qualities and that it be recommended to general cultivation.

Wagener.—That it is a good apple, a fine bearer and worthy of extensive trial.

PLUMBAGO LARPENTÆ HARDY.—This beautiful plant which we recently alluded to, has proved quite hardy in the garden of Mr. Jas. Jackson, of Boston; with merely the slight protection of a few leaves or straw, it stood out last winter, and has flowered abundantly all summer. Mr. Jackson's garden is in the heart of the city, and consequently protected by buildings, but we see no reason to doubt its proving equally hardy in all localities around Boston, where there is a dry subsoil and a slight but loose covering afforded to the plant. It will be doubly valuable if it proves quite hardy.

ANNUAL EXHIBITION OF THE PROVIDENCE HORTICULTURAL SOCIETY.—The annual exhibition of this society was held on the 10th of September, in the large hall over the Providence Depot, in that city, and in connection with the Mechanics Fair.

By invitation of the committee, we attended the Exhibition, and we were highly gratified at so excellent a display, particularly of apples. On Wednesday, the first day, the plants, as well as the flowers and fruits, were not all arranged, and consequently did not show to good advantage: we noticed, however, several superb large orange trees, and very well grown plants of achimenes, fuchsias, &c. &c. The dahlias and asters were also very fine; particularly two of the stands of dahlias, one from the gardener of A. Duncan, and the other from a contributor, whose name we omitted to note down.

Among the pears we noticed several dishes of the Rhode Island pears; viz.; Capsheaf, very large; Knight's Rhode Island Seedling, large; Abbott, medium size, handsome; Buffum, fine; Pratt, fine; Wescott, large and fine. L. C. Eaton exhibited quite a number of varieties, but the specimens were rather small, and several under synonymous names. The peaches were excellent, but, in most instances, without names.

The exhibition was well attended and attracted much attention.

AMERICAN PLOUGHS AT THE EXHIBITION OF ALL NATIONS.—We are glad to learn that our friends Messrs. Prouty & Mears have been successful in obtaining a medal for one of their excellent ploughs at the great Exhibition. Notwithstanding the prejudice against our American ploughs, and the great fears of the English farmers that they would not answer in consequence of their light construction, so very different from the clumsy, lumberly implements in general use, they have proved, on trial, to be all that was claimed for them. It was with much difficulty that the Exhibitors could obtain a trial; and as soon as they did, they at once silenced the

sneers of those who had looked upon the American portion of the Exhibition as of no interest or material importance in the general display.

A writer says, "Great anxiety was manifested to see the American plough tried, and when the first one was put into the ground, the exclamation I heard from many was, 'Those ploughs (the American) will break; they can't do the work!' But when the plough went through, with great ease to the team, and the ploughman, an Englishman, who had never before held an American plough, said, 'It holds easy,' the tide began to ebb, and soon to turn, before we got through with Prouty & Mears' plough, which was tried next. If we had an assortment of our ploughs here, I have no doubt many of them could be disposed of, the prices being from one third to one half of the English, and doing their work as well. The farmers who have seen, much approve of them.

A light two horse plough was tried in the ground with one horse, and ploughed with great ease. They were astonished at this, as it is well known that the prize English ploughs are so heavy that they are a load for one horse to draw without being put into the ground at all.

The jurors decided to award the prize medal to the Centre Draught Plough, manufactured by Prouty & Mears, of Boston."

ART. III. *Massachusetts Horticultural Society.*

Saturday, August 30. Exhibited.—FLOWERS: Cut flowers and bouquets from P. Barnes, J. Mann, Jr., J. Buck, J. Nugent, E. M. Richards, B. Harrington, Will. Kenrick, and others.

FRUIT.—From J. Lovett, 2d, melon—Christiana; improved high blackberries; plums—Green Gage, superior, Black Imperial, superior, Washington; pears—Rostiezer, very fine. From C. Newhall, plums—Washington, superior. From C. Stone, apples—Williams, superior. From A. Dexter, apples—Deacon; pears—unnamed; plums—Diamond and Green Gage. From S. H. Perkins, nectarines—Boston, superior, extra large. From E. Wight, apples—Benoni, Red and Green Sweet, fine, and Orange Sweet; plums—Nectarine. From G. Newhall, melons—Christiana. From J. Washburn, pears—Beurré Goubault, Franc real d'Ete, very fine, and Watson; plums—Denniston's Superb. From W. R. Austin, pears—Bartlett. From Dr. N. Durfee, grapes—Syrian and Muscat of Alexandria, both very superior, bunches of extra size. From S. Sweetser, plums—Princess, Imperial Gage, and two varieties unnamed. From J. Mann, Jr., plums—Princess, Yellow Gage, very large and fine, Green Gage, Imperial Gage, Coe's Golden Drop, Yellow Gage, Black Imperial, and one variety, unnamed. Peaches—unnamed.

From Hovey & Co., pears—Valle Franche, Julienne, fine, Franc Real d'Ete, Doyenne Boussock, Passans du Portugal, Frederick of Wurtemberg, (?) Franc Real d'Ete striped, and Seedling; grapes—Palestine, Muscat of Alexandria, Cannon Hall Muscat, and Black Hamburgh; peaches—Early York; melons—Beechwood, Trentham Hall, and Christiana. From

G. Merriam, peaches and pears—Bartlett. From Mrs. L. Spaulding, Crab apples; figs and plums, unnamed. From A. D. Weld, apples—Williams', superior. From J. Burnett, apples—Porter, superior; pears—Bartlett. From W. C. Strong, nectarines—Boston, fine, Elruge, and one unnamed variety; peaches—unnamed, very fine; grapes—White Chasselas, Black Hamburg, White Frontignan, fine, St. Peter's, very fine, Black Frontignan, fine, Blanche Vyron. From B. Harrington, apples—Williams, superior, River, superior, Seek-no-further, Porter; pears—Bartlett, St. Catharine's.

From J. F. Allen, pears—Bartlett, Belle Lucrative, very fine, and Franc real d'Ete; figs—Black St. Michael's, and Black Brunswick; peaches—Late Crawford, and Violet Hatif. From O. Johnson, plums—Reine Claude Violet, (?) very fine. From G. Walsh, plums—Green Gage, superior; apples—unnamed. From J. Nugent, plums—unnamed; pears—do.; grapes—Black Hamburg. From O. N. Towne, grapes—Black Hamburg, fine. From Breck & Son, grapes—Golden Chasselas, Frankendale, Chasselas Musque and Black Hamburg. From T. Reed, Jr., peaches—Crawford's Early. From John Parkinson, mulberries. From H. Vandine, plums—Cruger's, Scarlet Gage, Bottle, Sharp's Emperor, Duane's Purple, Washington, Large Yellow Gage, Smith, Orleans, fine, New Orleans, Columbia, very fine, Huling's Superb and Prince's Imperial Gage; pears—Sugar of Hoyerswerda. From E. M. Richards, pears—Dearborn's seedling; apples—Rambour of France, and one unnamed; melon—Christiana.

Fruits tested.—From D. Marcellus Wheeler, seedling pears—a seedling from the St. Michael's, resembling that variety in size and form, juicy, of a pleasant flavor, and promises well. From Hovey & Co., pears—a native seedling; peach—Early York, very fine. From W. C. Strong, grapes—Blanche Vyron, probably McCready's Early White. From John Parkinson, mulberries, fine.

VEGETABLES.—From A. Bowditch, large Lima beans, fine. From S. Sweetser, large Lima beans, fine. From A. D. Williams & Son, Mammoth Drumhead cabbages. From J. Mann, Jr., assorted vegetables, fine.

September 6. An adjourned meeting of the Society was held to-day. [The report of the doings of this meeting will be given in our next.]

Exhibited.—FLOWERS. Dahlias, verbenas, asters, bouquets, &c., were exhibited from J. Nugent, Miss Russell, P. Barnes, J. Breck, J. Mann, Jr., L. Davenport, E. M. Richards, Miss Kenrick, J. C. Pratt, Winship & Co., and others.

FRUITS:—[The report of the committee is unavoidably omitted till our next.]

VEGETABLES.—From J. Gordon, large Lima beans and Purple Egg plants, fine. From C. Stone, Long Blood beets. From J. Mann, Jr., Turnip beets, carrots, and Silver Skin onions. From A. D. Williams & Son, cabbages—Drumhead, fine.

September 13. *Exhibited.*—FLOWERS. Fine German asters, for premium, were exhibited by Hovey & Co., J. Nugent, J. Hovey, P. Barnes, J. Mann, Jr., and L. Davenport.

AWARD OF PREMIUMS.

GERMAN ASTERS.—For the best display, to Hovey & Co., \$4.

For the second best, to P. Barnes, \$3.

For the third best, to J. Nugent, \$2.

THE TWENTY-THIRD ANNUAL EXHIBITION.—*September 17, 18, and 19.* The Annual Exhibition took place on Wednesday, Thursday, and Friday, the 17, 18, and 19th of September, in the Society's Hall in School street. On this occasion, as on the last, the store below and the library room were fitted up so as to accommodate the increasing number of exhibitors and specimens. The arrangements were precisely the same as last year, with the exception of a portico in front, fitted up with three arches, and a handsome frieze and entablature, and the whole elegantly wreathed and intertwined with evergreens, and surmounted with the inscription, "Twenty-third Annual Exhibition of the Massachusetts Horticultural Society."

Owing to the long and severe drought, the display of flowers was exceedingly meagre; the dahlias had hardly yet commenced blooming, and the phloxes, asters, and other autumn flowers, had been almost ruined for the want of rain. The plants in pots were few, but most of them excellent specimens: but, in consequence of the want of space, they were not arranged so as to show them to the best advantage. The large bouquets for the Bradlee and Society vases, were much poorer than in previous years, and added but little to the general effect of the display. The glory of the show was the display of fruit,—more particularly of pears. This splendid fruit was never, in this country—and we believe we may say, in any country—equalled, certainly never excelled. We fancied that we had heretofore seen as fine specimens as could possibly be grown, but they would bear no comparison with those of the present year. In truth, it added an entirely new character to many of the varieties; for some that have been claimed as scarcely medium sized pears, would now demand a place among those of the largest class. All this has been accomplished, too, in one of the driest seasons within the memory of any cultivator; and it suggests the question, if such specimens can be produced in a most unfavorable year, what may we expect in a favorable one? The exhibition establishes the fact, that we have but just begun to cultivate the pear in its highest perfection, or to appreciate the value of many of the superior varieties which have recently been introduced.

It would not be possible for us to enumerate here one half of the remarkable specimens exhibited; every collection contained more or less of them; but we cannot omit to particularize a few. These were the Duchess of Angouleme of Capt. Austin, which were huge in size, and brilliantly colored; the Dix and Andrews of Mr. Stickney, superb specimens of superb fruits; so, indeed, were the Beurré Diels in the same collection, all highly colored on the sunny side, unusual with this fine pear; the Beurré d'Anjou of Mr. Wilder, with a glossy, ruddy cheek; and very large Leon le Clercs; the Doyenné Boussock of Messrs. Hovey, large and beautiful; as also the Swan's Orange and Beurré Langelier; the Bartletts and Passe-Colmar of Mr. Downer; the Winter Nelis and St. André of Mr. Cushing, and the Louise Bonne of Jersey, from each of these gentlemen; the Flemish Beauty

of Jos. Richardson; the Buerré Bosc of J. F. Allen, unusually large, and slightly colored; the Buerré Diels of Capt. Lovett; the Le Curé, from the President; the Easter Buerré of Mr. Gordon; the Louise Bonne of Jersey of Mr. Stetson; the Buerré Diel of Mr. Bacon; and several others, which we do not now recollect. The grapes were not remarkable, and the apples were inferior to last year. The peaches were exceedingly large and fine, a lot of Early Crawford, from Mr. Cushing, measuring 12 or 13 inches round. For the new kinds of pears we must refer to the lists below.

PLANTS.—From Messrs. Hovey & Co., a collection of twenty plants, among which were *Maurándya álba* and *rósea*, finely trained; *Stephanòtus floribúndus*, *Schubertia graveólens*, *Ixòra rósea*, *Rondeletia speciòsa*, *Cùphea platycéntra*, three or four kinds of achimenes, fuschias, &c. &c. From Messrs. Winship and Jas. Nugent, collections of twenty plants each. From H. Bradlee and Mr. McLennan, very fine cockscombs.

DESIGNS, CUT FLOWERS, DAHLIAS, ASTERS, &c.—From J. Mann, Jr., a floral temple, containing a rich basket of fruit. From C. Byrnes, gardener to F. Webster, Esq., floral baskets; the same from Miss. Russell. Two large bouquets for the Society's vases, by J. Nugent. Two smaller for the Bradlee vase, by H. Schimming, gardener to J. P. Cushing, Esq. A handsome guitar and harp, composed of flowers and evergreens, by Mrs. Wm. Kenrick. Other fine bouquets came from J. Nugent, Miss Mary M. Kenrick, Winship & Co., C. Copeland, Dr. N. Durfee, Thos. Page, Mrs. J. Walsh, W. E. Carter, F. Webster and others. A fine display of dahlias and phloxes, from the President. Fine German asters, and a superb seedling white verbena, from Hovey & Co. Cut flowers, in variety, from J. Mann, Jr., J. Breck & Co., J. Nugent, P. Barnes, A. McLennan, Mrs. M. B. Rumney, J. Hyde & Son, W. E. Carter, A. F. Page, and others.

PREMIUMS AND GRATUITIES AWARDED FOR PLANTS, FLOWERS, &c.

PLANTS IN POTS.—For the best display of not less than twenty plants, to Hovey & Co., \$12.

For the second best, to Winship & Co., \$10.

For the third best, to J. Nugent, \$8.

VASE BOUQUETS.—For the best pair, for the Bradlee vases, to J. Nugent, \$10.

For the best pair, for the Society's vases, to H. Schimming, \$10.

For the second best, to F. Webster, \$6.

PARLOR BOUQUETS.—For the best pair, to J. Nugent, \$8.

For the next best, to Dr. N. Durfee, \$6

For the third best, to Winship & Co., \$5.

For the next best, to Miss Mary Kenrick, \$3.

CUT FLOWERS.—For the best display during the Exhibition, to J. Mann, Jr., \$8.

For the second best, to C. Copeland, \$6.

For the third best, to Winship & Co., \$4.

COXCOMBS.—For the best six plants, in pots, to H. Bradlee, \$3.

For the second best, to A. McLennan, \$2.

GRATUITIES.—To J. Mann, Jr., for a floral temple, \$10.

To Miss S. A. Russell, for flower vase and basket, \$5.

To Mrs. W. Kenrick, for harp and guitar, \$5.

To A. Bowditch, for orange plants, \$5.

To Mrs. J. Walsh, for grass bouquets, \$3.

To H. Schimming, for six vases flowers, \$6.

To S. H. Jenks, for dozen of cotton grass, \$3.

To A. W. Stetson, for Oleanders, \$2.

To W. E. Carter, for bouquets, \$1.

FRUITS:—From the President of the Society, 52 var. of pears, among which were the Colmar Van Mons, Figue, Van Mons Leon le Clerc, Knight's Monarch, Inconnue Van Mons, Lawrence, Oliver's Russet, Oswego Beurré, Beurré Langelièr, B. Duval, Hull, Charlotte de Brower, Josephine de Malines, Beurré Goubault, &c.

From M. P. Wilder, 181 varieties of pears, embracing with the older kinds the following:—Beurré Goubault, B. d'Anjou, B. Esperinè, B. Sprin, B. Langelièr, Brougham, Barronne de Mello, Smith's Bordenave, Bonne des Zees, Belle Apres Noel, Beurré Richosstier, B. Navez, B. Sterkman, Bezi des Veterans, Bezi d'Esperine, Rameaux, Chas. Van Hooghten, Corail, Colmar Invalides, Charlotte de Brower, Comte de Paris, Cent Couronne, Doyenné Sterkman, Doyenné d'Affais, D'Alencon, Excelentissima, Elize d'Heyst, Francis (Edwards's,) Princess Royal, Gris Rouchard, Grand Soliel, Howell, Josephine de Malines, Knight's Monarch, Lawrence, La Mariè, Millot de Nancy, Nouveau Poiteau, New Haven Beauty, Rondelet, St. Francois, Soldat Labourer, St. Germain de Pepin, Tea, Triumph de Jodoigne, Vessouziere, Westcott, Wm. Prince, &c.

From Hovey & Co., one hundred and forty six varieties of pears, among which were Swan's Orange, Doyenné Boussock, Beurré Langelièr, Barnadiston, Lawrence, Rameaux, Nouveau Poiteau, Coter, Calhoun, Bergamotte Esperine, Bergamotte Boussiere, Beurré Goubault, Sabine, Jean de Witte, Sanspariel, Vessouziere, Charlotte de Brower, Oliver's Russet, Adele St. Denis, Poire d'Albret, Beurré d'Anjou, Figue, Whitfield, Knight's Monarch, Beurré St. Quentin, Jersey Gratioli, Dumore, Stone, Dumortier, Caennais, Rondelet, Bergamotte Verte d'Automne, Bezi d'Esperine, Duchesse of Augouleme panaché, Serrurier, Graslín, Princess Marianne, Poire Rondé, Poire Cirè, Poire des Ridelles, Poire de Groselle, Parmentier Dauphin d'hiver, New Spring Beurré, Beurré Benoits, Guernsey Beurré, B. Gens, B. Bremont, B. Thouin, B. Beaumont, Frederic of Wurtemberg, (new,) Cross, Van Mons Late, Las Canas, Rousselet de Meester, &c. &c.; also 13 var. of apples, among which were the Hornead Pearmain, White Doctor, Hunt's Pearmain, Pleasant Valley Pippin, Porter, &c.; 7 varieties of grapes, viz.: Cannon Hall Muscat, Muscat of Alexandria, Black Hamburg, White Frontignan, Zinfindal, Black Prince, Tottenham Park Muscat, &c.; Beechwood, Trentham Hall, Bronham Hall, and Early Cassabar melons; St. Michael Figs; and 20 varieties of peaches, among them Stetson's Seedling, White Ball, Cambridge Belle, Grosse Mignonne, Ives's Orange Free, &c.

From J. S. Cabot, 60 varieties of pears, among which were the St.

Nicholas, Smith's Pennsylvania, Poire Neill, Poire Carisie, Tarquin de Pyrenees, Triumph de Jodoigne, Rameaux, Beurré Judes, Poire Rigoleau, Soldat Labourer, Doyenné gris jaune d'hiver, Belle Excellent, Las Canas, Seedlings Nos. 1 and 2, &c. &c.

From B. V. French, 45 varieties of pears, among them the Beurré gris d'hiver nouveau, Doyenné Goubault, Suzette de Bavay, Oswego Beurré, Beurré d'Anjou, B. Goubault, Duchesse of Orleans, St Germain d'Ete, &c ; also, 92 varieties of apples, some of which were as follows:—Williams, Vermont Sweet, Esopus Spitzenberg, Jonathan, Mother, Holmes, 20-oz., Jewett's fine Red, Hartford Sweet, Lyscom, Melvin Sweet, Loring Sweet, Mexico, Fameuse, Minister, St. Lawrence, Chandler, Lucombe's Seedling, &c. &c.

From John Gordon, 50 varieties of pears, among which were the Queen of the Low Countries, Beurré Langelier, Stevens's Genesee, Bonne des Zees, Dunmore, Dix, Jalousie de Fontenay Vendee, St. Ghislain, Beurré Bosc, &c. ; also, 9 varieties of apples ; Coe's Golden Drop, Jefferson, Orange, Green Gage and 6 other kinds of plums ; and Watermelons.

From Winship & Co., 50 var. of pears, among others the following:—Colmar d'Aremberg, Beurré de Waterloo, St. Michael Archangel, Bezi de Vindre, De Lepene, Reine d'hiver, Oregon, Dunmore, Vicomte de Spoelberch, &c. ; also, 12 var. of apples and 5 var. of plums.

From Jos. Lovett, 2d, 42 varieties of pears, among which were the Boucquia, Oliver's Russet, Edward's Elizabeth, Garnons, Soldat Labourer, Beurré de Rhine, Washington, Beurré Sprin, B. Goubault, Cranston Seedling, &c. &c. ; also, 10 varieties of apples, viz. : Minister, Drap d'or, 20-oz., Benoni, Gravenstein, &c. ; and Green Gage and Smith's Orleans plums.

From A. D. Williams & Son, 40 varieties of pears, embracing Beurré d'Anjou, Buffum, Knight's Monarch, Belle Lucrative, Andrews, &c. ; also, 27 varieties of apples.

From R. Manning, 38 varieties of pears, among which were the Dunmore, Walker, Coter, Lawrence, Mollett's Guernsey Chaumontelle, Figue, Dr. Jacob, Calhoun, Dallas, 1295 and 1325 Van Mons, Beurré d'Estrapa, Bergamotte Zappe, Miel de Waterloo, &c.

From Jos. Stickney, 30 varieties of pears, viz. : Andrews, Belle Lucrative, Columbia, Fondante de Malines, Dix, Colmar d'Aremberg, Dunmore, &c. &c. ; also 17 varieties of apples, viz. : Minister, 20-oz., Fameuse, Maidens' Blush, Gravenstein, Porter, Hubbardston Nonsuch, &c. &c.

From Wm. Schimming, gardener to J. P. Cushing, 25 var. of pears, among them the following : Gansell's Bergamot, Muscadine, Las Canas, St. Andre, Lawrence, Moyamensing, St. Ghislain, Doyenné Gris, Belle Lucrative, &c. ; also, Black Hamburg and other grapes ; Boston, White, and other nectarines ; and Early Crawford and other peaches.

From J. Washburn, 25 var. of pears, viz. : Figue, Moyamensing, Swan's Orange, Bezi Tardif, Lawrence, Stevens's Genesee, Beurré Goubault, Soldat Labourer, Belle Lucrative, Mc. Laughlin, &c. ; also, Peck's Pleasant, and Gravenstein apples.

From F. & M. Burr, 20 varieties of pears, viz.: Henry IV, Heathcot, Buffum, Harvard, Frederic of Wurtemberg, Van Mons Leon le Clerc, Bartlett, Brown Beurré, &c.; also, 13 var. of apples; 7 var. of plums, and 5 var. of peaches.

From H. Vandine, 24 varieties of pears, as follows: Beurré d'Aremberg, Dix, Mariè Louise, Lawrence, St. Ghislain, McLaughlin, Dunmore, Collins, Paradise of Autumn, Stevens's Genesee, &c.; also, 10 kinds of plums, among which were the Huling's Superb, Corse's Admiral, Coe's Golden Drop, &c.; and two kinds of apples.

From S. Downer, Jr., 18 varieties of pears, viz.: Napoleon, Van Mons Leon le Clerc, Chaumontelle, Columbia, Andrews, White Doyenne, Urbaniste, Le Curé, Belle Lucrative, Duchess of Angouleme, Beurré Diel, Louise Bonne of Jersey, Passe Colmar, &c.

From J. Breck, 7 varieties of grapes, viz.: Black Hamburg, Frankendale, White Chasselas, White Frontignan, Grizzly do., Black Prince, De la Palestine; also, 13 varieties of pears.

From J. F. Allen, 18 varieties of grapes, as follows: Black Hamburg, B. Hamburg No. 16, Wilmot's B. Hamburg, Golden Chasselas, White Nice, Red Chasselas, Rose Chasselas, White Chasselas, White Tokay, Bishop, Bowker, Josling's St. Albans, De Candolle, White and Grizzly Frontignan, Reigne de Nice, Poiteau Noir, Chasselas Bar sur Aube, &c.; also, 7 varieties of pears; Elruge nectarines, and Lombard plums.

From W. C. Strong, 11 varieties of grapes, viz.: Black Hamburg, Muscat of Alexandria, Lombardy, Black Muscat, (?) Rose Chasselas, White do., White and Black Frontignan, Syrian, White Nice, and Chasselas Musque; Snow peaches; Golden and Roman nectarines; one large dish of assorted fruit, and three varieties of pears.

From Cheever Newhall, 10 varieties of pears, viz.: Andrews, Heathcot, Belle Lucrative, Dix, Fulton, Frederick of Wurtemberg, Urbaniste, &c.; also, 6 varieties of apples; Coe's Golden Drop, Purple Gage, and Drap d'Or plums; and Old Mixon peaches.

From Messrs. Stone & Co., Newton, 7 varieties of pears; and 18 varieties of apples, viz.: Golden Russet, Pumpkin Sweet, Orange Sweeting, Garden Sweet, Hubbardston Nonsuch, &c.

From J. B. Moore, 4 varieties of pears; and 8 of apples, viz.: Porter, Hubbardston Nonsuch, Orange Sweet, Hawthornden, Pomme Royal, Melvin Sweet, Minister, Fall Harvey, &c.; also, Orange quinces and seedling peaches.

From E. M. Richards, Bartlett, Cushing, and Colmar d'Aremberg pears; 12 varieties of apples, viz.: Minister, Porter, Dyer, Fameuse, Lyscom, Ortle, &c.; and peaches and nectarines.

From J. C. Pratt, 11 varieties of pears, viz.: Flemish Beauty, Van Mons Leon le Clerc, Buffum, Napoleon, &c.; also, 7 varieties of apples.

From B. Wheeler, 3 varieties of plums; White Doyenne pears, Porter apples, and 4 var. of peaches. From A. D. Webber, Bartlett pears, R. I. Greening apples, and Beechwood, Christiana, and Nutmeg melons. From

C. E. Grant, Black Hamburg, White and Grizzly Frontignan grapes; 4 var. of peaches; and Alpine strawberry, and Improved High-bush blackberries. From Josiah Richardson, 6 var. of pears; among them, Flemish Beauty, Colmar d'Aremberg, Beurré Diel, &c. From Mrs. E. Wolcott, Roman nectarines. From R. Choate, peach from a tree imported from Shanghai. From H. B. Stanwood, Green Gage plums, Bartlett pears, and 2 var. of apples. From S. Philbrick, Andrews pears. From B. Bradlee, Crab and Dutch Codlin apples.

From W. Bacon, 8 var. of pears, viz.: Chaumontelle, Long Green, Le Cure, Duchess, &c.; also, Early Crawford peaches, and 6 var. of plums. From S. Sweetser, 7 var. of pears; among them the Glout Morceau, White Doyenne, Passe Colmar, &c. From A. Dexter, 4 var. of pears, and 4 varieties of apples. From Miss Parsons, Gloucester, apples. From J. W. Gates, Cambridge, 4 var. of plums, and Early Crawford peaches. From A. W. Stetson, Louise Bonne of Jersey pears; Vinson peaches; and Black Hamburg and Sweet-water grapes. From A. Lackey, Marblehead, Urbaniste, St. Ghislain, Henry IV. and Citron of Bohemia pears; 7 var. of plums, among them the Golden Drop, Green Gage, Frost Gage, Corse's Field Marshal, &c.; and Prolific and Spanish filberts. From Geo. Walsh, Bartlett and White Doyenne pears, Green Gage plums, and two var. of apples.

From W. R. Austin, Duchess of Angouleme, Le Cure, Bartlett and White Doyenne pears. From J. Hyde & Son, Bartlett and Seckel pears, and 11 var. of apples. From Geo. Wilson, Jersey Gratioli, Paradise of Autumn, Beurre Bosc, Chaumontelle, and three other var. of pears. From R. Morse, Groton, Foundling apples. From Mrs. Sarah Greene, Portsmouth, Washington plums. From T. Waterman, Diana grapes. From B. Harrington, Porter and River apples, and Buffum and Fulton pears. From J. C. Blaisdell, Lexington, Golden Drop and Diapréé Rouge plums, and two var. pears. From P. W. Pierce, Seckel, Andrews, and Bartlett pears. From Wm. A. Crufts, Andrews, St. Ghislain, Urbaniste, and five other kinds of pears. From H. Bradlee, three var. of pears, and Imperial Yellow and Persian melons. From Miss Parker, peaches, unnamed. From Jona. Mann, Jr., Beurre Bosc, Flemish Beauty, and White Doyenne pears; Green Gage, Purple Gage, Coe's Golden Drop, and Purple Egg Plums; and seedling peaches.

From A. D. Weld, 7 varieties of apples, among them the Esopus Spitzenberg, Porter, Pumpkin Sweet, Seaver Sweet, &c.; and Bartlett pears. From F. Dana, Andrews, Seckel, Winter Nelis, White Doyenne, and Louise Bonne of Jersey pears. From N. Stetson, Beurré Diel and White Doyenne pears; and Early Crawford peaches. From G. Merriam, Bartlett pears; and Early Crawford, Morris White, and Bergen's Yellow peaches. From Lewis Wheeler, Bartlett, Dunmore, and Louise Bonne of Jersey pears; and Early Crawford peaches. From Henry Poor, Andover, Porter, Hubbardston Nonsuch, Roxbury Russet, and Rhode Island Greening apples. From S. B. Pierce, peaches. From Miss Parker, peaches unnamed. From L. Pierce, Lincoln, Porter apples. From Wm. McIntosh, Lincoln, Baldwin, Porter, Wine, Maiden's Blush, and Winter Sweet apples; and

Early Crawford peaches. From W. R. Gregory, Marblehead, 4 varieties of pears, and Coe's Golden Drop plums.

PREMIUMS AND GRATUITIES AWARDED FOR FRUIT.

APPLES.—For the best twelve varieties, of twelve specimens each, to

B. V. French, the Society's plate, \$20.

For the second best, to J. B. Moore, \$15.

For the third best, to J. Stickney, \$12.

For the fourth best, to Hyde & Son, \$8.

For the best dish of apples, to L. Pierce, \$6, for the Porter.

For the second best, to J. Stickney, \$5, for the Gravenstein.

For the third best, to J. Lovett, \$4, for the Fall Harvey.

For the fourth best, to J. B. Moore, \$3, for the Hubbardston Nonsuch.

To F. & M. Burr, Wm. Mackintosh, E. M. Richards, Hovey & Co.,

Winship & Co., J. C. Pratt, B. Harrington, J. Gordon, J. Burnet, and

H. Poore, a gratuity of the bronze medal to each, for fine specimens.

PEARS.—For the best twelve varieties of twelve specimens each, the

Lyman Plate to Jos. Stickney, \$20.

For the second best, to S. Downer, Jr., \$15.

For the third best, to M. P. Wilder, \$12.

For the fourth best, to H. Schimming, \$8.

To Hovey & Co., a gratuity of \$8, for twelve varieties, of twelve specimens of each.

To Hovey & Co., M. P. Wilder, S. Walker, J. Gordon, Winship &

Co., J. S. Cabot, R. Manning, for fine collections, a gratuity of \$8

to each.

To F. & M. Burr, C. Newhall, A. Dexter, and J. F. Allen, for col-

lections, a gratuity of \$4 each.

For the best dish of pears, to W. R. Austin, \$6, for the Duchess.

For the second best, to J. F. Allen, \$5, for the Beurre Bosc.

For the third best, to J. Richardson, \$4, for the Flemish Beauty.

For the fourth best, to A. W. Stetson, \$3, for the Louise Bonne of Jersey.

GRAPES.—For the best specimens, five varieties, two bunches of each, to

W. C. Strong, \$15.

For the second best, to Dr. N. Durfee, \$10.

For the best two varieties, two bunches each, to J. F. Allen, \$6.

For the second best, to Hovey & Co., \$4.

To A. W. Stetson, a gratuity of the Bronze Medal, for a grape vine in a pot.

BASKETS OF FRUIT.—For the best, to Hovey & Co., \$10.

For the second best, to W. C. Strong, \$7.

PEACHES.—For the best specimens, to H. Schimming, \$6, for the Early Crawford.

For the second best, to N. Stetson, \$4, for the Early Crawford.

To W. Bacon, a gratuity of \$4, for fine Early Crawford.

WATERMELONS.—To J. Gordon, a gratuity of the Bronze Medal.

MUSKMELONS.—To A. D. Webber, a gratuity of the Bronze Medal.

VEGETABLES.—The display of vegetables was exceedingly fine, and embraced some superior specimens. This was not anticipated after so dry a season; but, on the whole, the exhibition of the culinary department has never been better. The Custard squashes by Mr. Marsh, were very fine; and the show by Mr. J. B. Moore, was excellent. Mr. Mann had some fine Purple Eggs; and the Rev. Mr. Pope sent fine specimens of his new hybrid sweet corn. Messrs. Williams & Crosby, as usual, sent a good variety, and finely grown.

From J. B. Moore, a large collection, viz.: Chenango and Sealsfoot potatoes; Okra; five varieties turnips; tomatoes; Darling's Early sweet corn; three kinds onions; two of carrots; four of beets; Marrow squashes; salsify; pumpkins, &c. &c. From F. Marsh, nine Custard squashes. From F. Webster, by C. Byrnes, celery; Purple Eggs; cauliflower; salsify; two varieties of tomato; Marrow squashes; four varieties corn, &c. &c. From S. W. Cole, eleven varieties of potato, among which were Danvers Red, Hall's Early, Sealsfoot, &c.; also, twenty-five varieties seedlings; and six Connecticut Pie squashes. From J. C. Blaisdell, Marrow squashes. From Messrs. Stone & Co., a variety of turnips, &c. From Josiah Lovett, six cauliflowers. From Rev. A. R. Pope, new Hybrid Sweet corn. A. D. Williams & Son, and J. Crosby, sent Marrow squashes, Drumhead cabbages, tomatoes, cauliflowers, lettuce, &c. Collections were also contributed by A. Bowditch, J. Mann, Jr., J. Gordon, E. M. Richards, J. Davis, and others.

PREMIUMS AND GRATUITIES AWARDED.

VEGETABLES.—For the best display and greatest variety, J. B. Moore, \$10.

For the second best, to F. Webster, \$8.

For the third best, to Josiah Crosby, \$6.

For the fourth best, to A. D. Williams & Son, \$4.

NEW VEGETABLES.—For a new variety of sweet corn, to A. R. Pope, \$5.

GRATUITIES.—To J. B. Moore, for the best variety of turnips, the society's silver medal.

For blood beets, the best, \$5.

For squash peppers, \$3.

To A. McLennan, for egg plants, \$3.

To A. R. Pope, for Old Colony Sweet corn, (a new hybrid,) the society's silver medal.

To J. Lovett, 2d, a special gratuity for winter crook-neck squash, raised in 1850, weighing 70 pounds, a silver cup, \$10.

To J. Mann, Jr., for Drumhead cabbages, \$4.

To Joseph Davis, for celery, \$3.

To A. Bowditch, for display of vegetables, \$4.

For Lima beans, \$3.

To Thomas Page, for Snake cucumbers, \$2.

To J. W. Brown, for Carolina sweet potatoes, \$2.

To N. Stetson, for tomatoes, \$3.

To J. Lovett, 2d, for cauliflowers and broccoli, the society's silver medal.

To E. M. Richards, for squashes kept from 1850, in fine condition, \$2.

To F. Marsh, for custard squashes, the society's silver medal.

To Messrs. Stone & Co., for beets and turnips, \$1.

To S. W. Cole, for display of seedling and other potatoes, \$10.

For Connecticut pie squash, \$5.

To J. Gordon, for display, \$4.

For large Lima and Saba beans, \$3.

To A. Hatch, for seedling potatoes, \$3.

To J. Crosby, for squashes, \$3.

To B. V. French, for tomatoes, \$3.

To F. Webster, for cauliflowers, \$2.

HORTICULTURAL OPERATIONS

FOR OCTOBER.

FRUIT DEPARTMENT.

The dry weather of August continued throughout nearly the whole of last month, and in many places trees were severely injured by its severity. On the 21st, a short but heavy rain greatly revived vegetation, and a succession of rains, from that time up to the present, (27th) has pretty thoroughly saturated the ground. Light frosts were experienced on the 15th and 16th, and an unusually heavy one for the early season, on the 25th, killing nearly all tender vegetation.

The quantity of work will now increase rather than decrease, until winter sets in. As the season arrives for transplanting, a great deal of preparatory work should be done, in order to prevent hurrying next month. Continue to trench and drain where trees are to be planted. Keep down all weeds, as neglect of this now will only increase the labor next spring.

Gathering fruit, where there is much of a collection, will occupy much time, and as this is a thing which should not be done hurriedly, begin in good season. On this head we would direct attention to a capital article in our last number, (p. 416.)

GRAPE VINES in the early houses will now be ripening off their wood rapidly, and will need but little care for the remainder of the season. In late houses the fruit will now be fully ripe, and attention will be necessary to regulate the temperature and moisture of the house. Keep it as dry as possible; discontinue syringing and watering, and allow no superfluous moisture. Continue to cut and prune in the laterals, where they have become too thick, or entangled. It will be necessary to admit of the free rays of light to ripen and mature the wood. Where it is intended to have the fruit hang late, the bunches should be looked over occasionally, and all decayed berries cut out. Vines in the open air may now be divested of the superfluous, unripe, and small wood, which will not be needed next season.

STRAWBERRY BEDS will yet require attention. Keep the earth stirred often, and keep down all weeds; lay in the young runners carefully, if there are any vacant spaces in the rows. New beds may yet be made.

RASPBERRIES and BLACKBERRIES may be set out this month.

CURRANTS and GOOSEBERRIES may be planted this month.

PEACH TREES in pots should now be sparingly watered, in order to ripen their wood.

TREES BUDDED last month will require to be occasionally looked over to see that the ties are not cutting or injuring the stock or buds.

FLOWER DEPARTMENT.

The early frosts of the season will probably have caught some cultivators "napping." The morning of the 25th was one of the most severe we have known for several years, so early in the season. All the Dahlias were more or less touched, except in very sheltered locations, and in most places they were entirely spoiled. All tender things were much frosted. But few of the plants have probably been housed, as the first of October is usually the season for taking in even very tender things. In all probability we shall have a warm October, but yet it will not be safe to leave any work undone; all plants, therefore, should be got in now as fast as possible, except such as are quite hardy, and intended for late blooming. Wash, clean, top dress, and tie up, all the plants as they are put in; it will save a deal of dirt and confusion after they are housed.

What we hinted at last month should be borne in mind. Continue to propagate all such things as are wanted next spring, and lay up a stock of good soil for use in winter. See to the neatness of the houses; and put in the best order all running plants which may be growing on the columns or rafters of the houses. Label all plants, either in the open ground, or in pots.

DAHLIAS now done blooming, should soon be taken up and placed in a dry cellar, or under the stage in the greenhouse.

AZALEAS should not be exposed, at this late season, to too much moisture. It is best to house early, or place in a cold frame, where they can be sheltered from heavy rains.

CHRYSANTHEMUMS will now require protection from severe frosts, either by removing to the house, or by sheltering in frames. Water freely with liquid manure or guano.

TULIPS and HYACINTHS may be planted out, the last of this month.

FUCHSIAS now done flowering may be placed away under the stage till spring.

PELARGONIUMS, repotted last month, will require a light, dry and airy situation now; on a shelf near the glass is the best place. Water sparingly. Young plants rooted in September, should now be potted off.

OXALISES, IXIAS, &c., may now be potted and placed in a frame.

CHINESE PRIMROSES may now have another shift if they require it: keep the plants out in frames as late as possible. Shift young seedlings as they require it.

PANSIES may now be propagated from cuttings; it is the most favorable season. Seedlings in the open ground should be properly thinned out.

VERBENAS should now be propagated from cuttings.

ROSES in the open ground, of tender kinds, should now be taken up and potted. Keep them in a frame till December.

MIGNONETTE and SWEET ALYSSUM, in pots or boxes, should be placed in frames, and have an abundance of air.

JAPAN LILIES, in pots, should be placed in a cold frame on the approach of severe cold.

CARNATIONS and PICOTEEs may be taken from the old plants, and set out in frames where they can have a slight protection.

CALCEOLARIAS, sown in August, will now require repotting.

CYCLAMENS will now require repotting.

SCHIZANTHUSES should now be potted off.

CINERARIAS should now be repotted.

CACTUSES will now require attention in watering; with the exception of the Epiphyllums, soon to bloom, they should be kept rather dry.

GLADIOLUSES, TIGER FLOWERS, and other tender bulbs should be taken up before severe frost.

HELIOTROPES may be potted now if they require it.

FLOWER GARDEN AND SHRUBBERY.

There is yet considerable to do in the pleasure ground and among the shrubbery. The falling leaves still require that it should be often raked, to prevent its assuming its winterish hue too soon. As the frost has blackened the tops of tender things, all these should be taken off out of the way as speedily as possible. Continue to roll the walks and mow the edgings, which will have revived after the late rains.

Now is a good time to fill up vacant places in the shrubbery; take the earliest opportunity after the leaves begin to fall freely to do it. This is also the time to transplant, reset, and fill all vacancies in the flower borders. Bulbs of all kinds may be got in, and biennial plants, raised from seeds, put out in their places in the borders or in beds.

PÆONIES may yet be taken up, divided and reset.

LILIES of all sorts should be set out this month, as they do not remove so well later in the season.

HOLLYHOCKS, raised from seeds, should now be set out when they are to bloom.

PINKS of all kinds, raised from layers, should now be planted where they are to bloom.

ROSES and SHRUBS of all kinds may be safely removed as soon as the foliage begins to drop.

HERBACEOUS PLANTS of all kinds may now be transplanted.

Trench and prepare ground intended for planting next spring, and, as far as possible, accomplish everything which will lessen the accumulation of work next year.

THE MAGAZINE
OF
HORTICULTURE.

NOVEMBER, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *How are we to obtain a correct knowledge of the finest Pears?* By the EDITOR.

THE day, we presume, has gone by when the question shall be asked, "*Which do you consider the three best pears?*" If it has not, then we must certainly admit a retrograde movement in pomological science. Thirty or forty years ago, when the White Doyenné, Brown Beurré and St. Germain were the three prominent kinds cultivated around Boston, by such amateurs as the late Hon. John Lowell, E. Preble and Gorham Parsons, Esq's, such a question might have been *apropos* to the subject. *Twelve* varieties then formed the sum total of all the kinds recommended by intelligent cultivators, as will be seen by the following statement.

In an excellent article in the *Mass. Agricultural Repository*, written by the Hon. John Lowell, and published in the third volume, (1815) a list of all the best fruits for general cultivation is there given, with some general remarks on the importance of selecting and cultivating only the best sorts. The whole article is well worthy of perusal, as showing the rapid progress of pomology during less than half a century. But we shall only refer to that portion of it which has a bearing upon our subject, viz., pears:—

"The pear," says Mr. Lowell, "is a fruit remarkably well adapted to the climate of Massachusetts. It is much to be doubted whether any country in the world produces finer pears than have been raised in this state."

“But the cultivation of them has been, in a great degree, confined to the vicinity of the metropolis. We probably have in this state every good variety of pear known in France. We mention France, because in that country more successful attention has been paid to this fruit than in any country in the world. To the Huguenots, who fled from France on the revocation of the edict of Nantes, we owe almost all the fine pears we have. They are to be traced to the gardens planted and owned by them. Although there are near an hundred species or varieties of pears cultivated in France, yet there are not more than twelve which we would recommend to general cultivation.”

With some further general remarks on the importance of gathering and storing fruits, Mr. Lowell concludes with the following list as “the sorts of pears for common use which may be recommended:”

The *Little Muscat*, a small summer pear, August.

The several varieties of *Catherine* pears, Summer.

The *Jargonelle*, a fine summer pear and a great bearer.

The *Summer Bergamot*, a green pear of an apple shape, September.

The *Brockholst Bergamot*, a delicious pear, ripe early in October. [Probably Brocas or Gansell’s Bergamot. *Ed.*]

The *Brown Beurré*, the best pear which is known, but short lived, ripens in October.

The *St. Michaels*. It has a great variety of names—most commonly known under the above. It is a great bearer, will grow in any soil, is in eating from October to Christmas if taken good care of, and is among the most valuable pears which grow.

The *Mons Ican* is another valuable pear. It is ripe about the 1st of November, and will last till the middle of December. [Probably the Mons. Jean is meant, and the error may, possibly, have been a typographical one. *Ed.*]

The *Rousseline* is also a fall pear and will sell well.

The *Winter Good Christian* is a pear which keeps well, and may be transported a great distance, being very hard when gathered.

The *Virgoulouse* and *Colmar* resemble each other and are very fine. They are December pears, and will sell well at market.

The *Chaumontelle* is also a fine, late fall pear, and a great bearer.

But the pear which may be cultivated to the greatest profit, the most uniformly good, the best of the excellent pears for keeping, is the *St. Germain*. It is a hardy tree, and will endure a century. The pears, barrelled up, might be transported a hundred miles in December or January, and will always command a good price. Perhaps, however, they could not profitably be transported more than forty miles.

This very imperfect list of fruits has not been made out with a view so much to increase the profits of the farmer, as to show him that, with a little pains, less than he often bestows in procuring things which are injurious to him, he might always regale his family and friends with what the richest and greatest men consider the most acceptable things they can offer to their guests, most excellent fruits."

Here then is the list of the best pears cultivated in our gardens thirty-five years ago, and if the "richest and greatest men," of that period, wished to regale their friends with fine fruits, according to our ideas of excellency there was then, certainly, great need of knowing "which were the three best varieties." But the question at this time exposes one to little less than ridicule for its absurdity; for among the multiplicity of fine varieties now fully proved, well known and generally cultivated, it would be almost impossible to find three unworthy of a place in the choicest collection; we do not, of course, refer to the hundreds of newly introduced pears, but the comparatively older ones.

One word as to Mr. Lowell's opinion of the excellence of our climate for raising pears. Mr. Lowell says, in no *qualified* terms, that "no country in the world produces finer pears than have been raised in this state." Shall we from this infer, that since 1815 our *climate* has become "*rude*" and the soil *rather sandy*, so that these fine pears will not flourish well now around Boston, as we are told by later writers.

upon Pomology? or shall we set down Mr. Lowell's experience as worthy of some consideration, and doubt the knowledge of those who make statements to the contrary? If the experience of twenty-five years is any guide, we must still agree with Mr. Lowell that the world does not produce, nor has probably ever produced, finer specimens than have been raised in the vicinity of Boston during that time.

If, then, it is believed, as we think it must be, that the question of "Which are the three best varieties of pears" is of very little importance to cultivators, the next question, and one which is of real value, is, "How shall we make a selection from the great number of fine sorts?" To do this is not difficult to a certain extent, but to accomplish it in its fullest sense is a work of no little labor, from two great and important reasons, viz., want of experience and of time. A great many pears have been sufficiently proved and tested, to satisfy the most credulous; while there are others of the highest reputation, upon the general merits of which there yet remains a doubt.

To get at this important result more speedily, a new sphere of action has been opened, viz., that of pomological conventions, composed of delegates, conversant with fruits, from all parts of the country. Three or four of these have been held and their opinions given to the public; and although they have, perhaps, confirmed what had been already expressed by able pomologists, they have, as yet, done little towards adding anything new to our stock of knowledge on this subject; for a single reference to some of the catalogues of the most extensive nurserymen of the country, will show that the very fruits these conventions have commended, were previously and publicly pronounced *unexceptionable in all respects*. We would not, however, have it understood from this, that we doubt the good effects of such conventions, but that we look upon them as confirming the labors of individual cultivators, rather than leading in the accomplishment of the object in view.

The labor of proving and testing new fruits must be an individual one. Societies may do much through the coöperation of cultivators and the exhibition of fine specimens,

and conventions ratify the results obtained by its members, but it must yet remain an individual effort achieved only by long experience, close observation and attentive study.

To what sources, then, must the amateur look for his information in regard to a selection of kinds? Why, certainly, to pomological works, and periodicals treating upon the subject. To both of these he must turn for the knowledge he would possess. The one, concentrating all the information up to a certain period; the other, treasuring it up month by month and year by year, noting now the failure, and again the success of each and every kind, until judicious treatment and an acquaintance with each sort shall render success predominant over failure, and the merits of each variety become established. Such being without doubt the result, how important it is that the information given should be that of careful experience, and not the hastily or crudely formed opinions of those who have not had the means, or the opportunity, of obtaining the requisite knowledge.

It cannot be denied that the indifferent reputation of many fruits is to be attributed to the dissemination of opinions respecting them, by individuals who were not sufficiently acquainted with their merits to pronounce an opinion; and to a careless and premature observation of varieties growing under the most adverse conditions. These two causes have in many instances, some of which we shall note, tended to prevent the more general cultivation of some of our most valuable pears. No better evidence of this is needed than the fact that many, of what we call new varieties, have been cultivated from thirty to fifty years, in France, and yet we have but just found out their real merits.

As an example of what we have said, take the Dix pear. It was first introduced to notice in 1828 or 1829, but scions were not generally disseminated from the original tree until four or five years afterwards. From its peculiar habit of coming very tardily into bearing, many trees to our knowledge, which were grafted at that period, have just come into fruit. The Hon. Mr. Cabot, of Salem, had a tree grafted sixteen years before it fruited. Mr. Wm. Bacon, of Roxbury,

had another grafted fifteen years before it produced fruit, and several other trees might be named which have varied in the time of fruiting from eight to fifteen years. Indeed, so little known is this fine pear that it has not yet been added to the list of kinds recommended for cultivation by the Pomological Congress.

Notwithstanding this, we find it stated in books upon fruits that the Dix "is one of the most uncertain of all pears." In light soils it generally cracks and blasts, and often in strong moist soils"! Is there sufficient evidence for such a statement? Has sufficient time elapsed to know this? The response will be, no! but that, on the contrary, when the trees have acquired age, this variety has invariably proved fine, and that the exceptions are when young trees have first fruited, or have been in indifferent health, or had poor treatment. Yet how many individuals may be deterred from planting so fine a fruit from such a statement, and thus lose years of valuable time when the tree might be acquiring that age necessary to the development of its true characteristics.

The Easter Beurré is another pear whose value has been impugned by similar statements. Witness the following from a notice of this variety in a contemporary journal, by a distinguished cultivator: "The Easter Beurré is so variable and uncertain that it cannot, from our present experience, be recommended for general cultivation." This is a qualified expression certainly, for the addition of "our present experience" so makes it; yet it is equivalent to saying that it should hardly find a place in a collection. But from what we have seen of this noble pear, this is not so. It only requires age and good cultivation to make it as certain as most any of our pears. A tree ten or twelve years old, in the garden of a neighbor, is now (Oct. 18) loaded with splendid fruit, and has borne a fine crop every year, which ripens off in the highest perfection.

The Glout Morceau is another. Many cultivators have stated that it has one great fault, viz., of dropping its fruit when about the size of a small plum; and from this they have doubted its merits for general cultivation. But this, too,

must be attributed to the same cause before mentioned—the age of the trees. Those five or six years old, we admit, occasionally do so ; but when they arrive at a mature growth, this does not happen. A single tree in the garden of Mr. Vandine, of Cambridge, is annually loaded with fruit of immense size. It must rank as one of the very best winter pears.

Many other varieties might be enumerated, but we shall only mention one, the Marié Louise, one of the most luscious of all our autumn pears. Mr. Rivers, in a communication in the *Horticulturist*, says that he has “one hundred and fifty trees just twenty years old. They are, as usual, full of blossoms, but it is five years since I had a crop.” In the climate of England this is undoubtedly true, and such information may be valuable for that latitude ; but it does not apply to us. Mr. Cole, in his Fruit book, says, “it cracks and is very uncertain.” This, too, we must doubt. It is a very tardy bearer, and, on young trees, the specimens are not large ; but let the trees acquire age, and it is not only one of *the* most certain pears, but produces enormous crops. A standard tree in the garden of Mr. Vandine, twenty-five years old, bears its barrels of fruit annually. It is, while small, a rather crooked grower, but, by a little tutoring, it can be made as upright as many other kinds. But this certainly should not disparage so delicious a fruit. Mr. Vandine has proved that it will *pay*, though Mr. Rivers may prefer the Capiaumont !

Under all these circumstances, then, how are we to obtain a correct knowledge of the various pears ? Not by doubting the merits of a variety from information prematurely obtained. Not by rejecting it because it does not immediately produce large specimens of beautiful appearance. Not by cutting off and mutilating the trees of a kind which *has done well*, when properly managed, to put on one of less merit, or of doubtful excellence. But rather wait for those results, which time only will enable us to obtain. If one cultivator has been successful under ordinary circumstances, others will be equally so ; and with those kinds whose reputation is established, no ordinary cause should induce us to change them for others.

The question will then be, not "which are the three best varieties," but, out of the number of superior pears, how shall we decide which to select? The Bloodgood, Bartlett, Louise Bonne of Jersey, Seckel, Belle Lucrative, Beurré Bosc, Le Cure, Winter Nelis, and Beurré d'Arenberg, are nine pears pronounced unexceptionable by some of the most experienced cultivators in our vicinity. But are these all? Where are the Glout Morceau, Paradise of Autumn, Dix, Beurré Diel, Doyenné Boussock, Beurré d'Anjou, Fulton, Andrews, Urbaniste, Tyson, Gansell's Bergamot, Rostiezer, Passe Colmar, St. Ghislain, Easter Beurré, Heathcot, Thompson's, Stevens's Genesee, Golden Beurré of Bilboa, Sieulle, Flemish Beauty, Compte de Lamy, Duchess of Angouleme, Long Green, Marié Louise, Wilbur, Buffum, Lawrence, &c., not to mention more recent kinds of equal merit? It must be apparent that a selection of anything less than a dozen, must necessarily exclude some of the very finest pears.

New varieties should, of course, be added with caution; but they must not be condemned in haste. They are entitled to a thorough trial, and those who do not wish to test them because there are already plenty of fine ones, should not forget that there are others who do; not for the simple object that they are new, but because, knowing of no limit to improvement, there may be found among them varieties far superior to anything we have yet obtained.

ART. II. *Market Gardening around London.*

By J. CUTHILL.

THE STRAWBERRY.—This most delicious and wholesome fruit is very largely cultivated for the London markets, and more fruit is even consumed in the villages surrounding the metropolis than in the largest provincial town in England. It is difficult to discover the correct acreage devoted to this kind of crop in the different counties surrounding London; but at a rough guess it may be estimated at near 100 acres.

In cultivating strawberries the runners are generally planted out upon well prepared ground in August, but in the case of dry weather the operation is often deferred until about the 1st of September. They cannot, however, be planted out too soon; and for the British Queen the old-fashioned plan of saving the runners amongst the old plants, or what is better, pricking them out into winter beds 4 inches apart, and planting them out in March between lettuce or some other dwarf crop, answers best; any blossoms that are thrown up afterwards are picked off. Mr. Joseph Myatt, of Deptford, who has been so long justly celebrated for rearing and growing strawberries, has kindly furnished me with the following answers to questions which I put to him respecting this fruit.

Q. What number of acres have you under strawberries?

A. Seven.

Q. What sort of soil and manure do you use, and how much?

A. Sandy loam, horse and cow-dung, mixed, and applied at the rate of 30 loads to an acre.

Q. How many years do you allow the plants to bear?

A. Two, but if the sorts are very productive, three.

Q. What distance apart do you plant?

A. My beds contain three rows of plants, which stand 18 inches apart each way, leaving $2\frac{1}{2}$ feet alleys, and clearing out the middle row after the fruit is picked off the first year.

Q. At what time do you straw them?

A. As soon as the first fruits are set.

Q. Do you use any water?

A. I have none within a mile of me, or I would employ it.

Q. What regulations are observed in the picking season?

A. The best fruits are put into 1 lb. punnets; the "seconds" into pottles; the pottles and punnets are made up professionally.

Q. Do you approve of sending them to market in the 4 or 5 lbs. wicker baskets, which are used by some growers?

A. This plan is only fit for hard ones, and strawberries for preserving.

Q. How do you transmit your fruit to market?

A. To the latter by means of a spring-van; to shops, on women's heads.

Q. What sorts do you grow?

A. British Queen, Eleanor, Deptford Pine, Comte de Paris, Surprise, Goliah, Keens' Seedling, and many other seedlings.

Such are the answers of one of the best cultivators we have around London. Having no water near him, Mr. Myatt depends entirely upon the immense quantity and quality of his manure for keeping the ground moist, together with a good coat of straw; but where manure is scarce, perhaps my plan, which I have practised for many years, would be the best. I always mulch between the rows with fresh straw, mixed with horse droppings, laying it on at least an inch in thickness, just when the plants are coming into flower; and if the weather is dry I water frequently, but not over the flowers, until all the fruit is set. By the time the latter is ripe, the strength of the manure is washed down amongst the roots when they most want it, leaving the straw clean and sweet. Some market gardeners plant the British Queen 2 feet 6 inches apart between the rows, and 18 inches plant from plant. By this means large fruit is obtained; and should the autumn prove so dry as to ripen and set the buds properly, the crop in the following year is very heavy. Keens' Seedling does not require such treatment; if it is planted out in July or August it makes fine plants, and bears a heavy crop the first year, but the plantation must consist of runners from plants that have produced a good crop. And the safest plan is to go over them when they are coming into flower, and before they are mulched, in order to pull up any plants that are unproductive. In some years acres are destroyed on account of their not bearing fruit. This happens after a wet autumn, which causes the plants to grow into leaf without forming flower buds, and this occurs oftenest on light land. In the strawberry season market gardeners provide themselves with thousands of pottles, called quarts. These are formed of white fir, or laths split up very thinly. The length

of the London pottle is 11 inches. The inside diameter at the bottom is an inch, but it gradually enlarges until it is $3\frac{1}{2}$ inches wide at the top, which is finished with a handle rising about 4 inches above the rim. This pottle properly filled with fruit ought to weigh from 12 to 14 ounces. For the first early strawberries, what are called pint pottles are used. These are the same size at the bottom as those just mentioned; but they are only 7 inches long, and not quite 3 inches in diameter at the top, finishing with a handle 2 inches high. They hold, when filled, about from 4 to 6 ounces of fruit. "Punnets" are made of the same material as the pottles. They hold $\frac{1}{2}$ lb., 1 lb., 2 lbs. and upwards, according to the purposes for which they are wanted.

Considerable skill is exercised in what is termed "topping up of a pottle," so as to give to its top the form of a cone. The first row of fruit sits partly on the rim, and exhibits its best broad side half way round the pottle. The next row occupies the bosom of the last, and so on to the top. The other side of the pottle is then "put up" in the same way, and when well done the fruit is not easily displaced; the pottles are then sent off to market in light spring vans, which hold two tiers of light white wicker baskets; the latter contain 36 pottles, but in the case of the best fruit these baskets are divided by first putting in a layer of 1 lb. punnets, and then a division, filling up with punnets. The supply for the shops is conveyed to them by Welsh or Irish women, who carry them on their heads; these women being paid for every journey they make, earn a good deal of money at this occupation, in which they often walk 48 miles a day, *i. e.*, three times, say, from Isleworth, and three times back. This is, however, hard work, which I hope some day to see performed by the cheap steamboats which now ply so plentifully up and down the Thames.

Market gardeners exercise much ingenuity, in order to secure early fruit, such as planting closely in beds, and placing frames over them early in the spring; taking up plants with good balls and putting them into frames, in a little bottom heat; as well as planting at the foot of old walls, &c.

They have also tried all sorts of ways to forward the ripening out of doors, as well as to keep the fruit clean, without encouraging insects. Among the materials used for this purpose may be mentioned slates, tiles, flints, boards, &c. ; but the great fault of all these is, that they breed and harbor insects, whilst they cook the fruit before it is ripe, rendering it spongy and acid. All those contrivances have been abandoned, in order to give place to the much more sensible and economical plan of mulching with litter, which answers every purpose for which it is intended perfectly.

For private growers, terraces faced with burrs, as recommended in the *Chronicle* for last year, would, I have no doubt, be found everything that could be desired. By planting close behind the burrs, the latter running east and west, the fruit would hang over the burr without touching it, and so circumstanced would experience all the benefit arising from the reflection of the sun's rays, and would ripen much earlier than it otherwise would do, in addition to which the free play of air round it would give it a very superior flavor. This plan reminds me of our native banks, where the strawberry grows wild, and from which such high flavoured fruit is obtained, especially where the situation faces the sun. In small places within the sight of windows, such strawberry terraces would not only be useful but might be made very ornamental and agreeable to look at.

WATER-CRESSES.—When the late Sir Joseph Banks came home from circumnavigating the globe, among the first things he asked for were Water-Cresses, so highly did he value them as a purifier of the blood, and so important did he consider them in this as well as in other respects, relating to the animal economy, that he presented one of our water-cress growers for Covent Garden with a Banksian Medal, in order to encourage him in carrying out their cultivation. I am sorry to state, however, that notwithstanding this, and although the plant is a native of Britain, and therefore easily cultivated, it is not half so extensively grown as it should be, there being only about four or five producers of it for the London markets, the main supplies for which are obtained

from Springhead, Gravesend, Kent; Waltham Abbey, Essex; and from two or three places in Hertfordshire. The Gravesend and Waltham Abbey cress grounds are far the best, more attention being paid in these than in other places to its cultivation; this is apparent in the robust and healthy appearance of the stem, as well as in the leaf, which is broad, and has a brownish-green aspect. The supply of cresses to Covent Garden every market morning, according to Mr. Steptoe, an old herbalist there, may be estimated at nearly 500 dozen small bunches. In the height of the growing season every greengrocer buys them for the tables of the rich; but the great consumers of this useful herb are the middle and lower classes, who get them chiefly through the medium of street venders, who purchase 20 times as much as the greengrocers; and by taking so many they not only obtain them cheaper in the first instance, but when they get them home they make every market bunch into two or three, and in this way pick up a tolerable living. Cheap, however, as water-cresses are admitted to be, I consider them much too dear; and there is room for spirited individuals to form new cress grounds, not the beds of small rivulets, but regular plantations on large slopes, with the land cut into canals, similar to the lamb grounds in many places. There is one of those early grass-producing contrivances at Mistley Hall, nearly two miles in extent, and occupying about 30 acres. This large space is capable of being all flooded at once, and for any length of time. Now this is the kind of cress ground that I would recommend, and in such a place cresses should be regularly planted, and as much attention paid to their growth as to that of any other plant. In this way, instead of the grass and rubbish choked article now sold us, we would have cress at least as fine again as that we at present receive.

I consider that no gentleman's establishment is perfect without its water-cress plantation. There is hardly a park which cannot boast of one of those crystal streams for which our country is famous, and a small piece could easily be enclosed and protected from cattle for cresses; but there should be the means of shutting the river off in case of floods and

heavy storms. The artificial canal system mentioned above would, however, answer best ; for floods and heavy waters might then pass on in their natural course without disturbing the cress beds. If this plan cannot be followed, then plant the bed of some stream, driving down stakes or laying large stones, so as to impede or lessen the force of the current. They would not be so fine produced in this way, but at the same time they would be plentiful enough to answer every purpose of a small family. Of this I am certain that no gentleman would object to have a water-cress bed for the use of his table, knowing its produce to be one of the most efficient purifiers of the blood and the very king of salads ; and as far as the London markets are concerned, I am sure that if 10,000 bunches more than they already receive were brought every market morning they would all be sold.

In forming plantations, it would be necessary to have strong planks to walk upon, a few inches higher than the plants, so as not to trample on the latter, nor get wet-footed in picking them. In case of frost, it would be necessary to have plenty of water at command, in order to cover the plants well. The latter should always be raised from seeds, as, managed in this way, they do not "run" so soon, and by sowing at different seasons, we might have fine young cresses all the year round. "But," I hear some one say, "you have provided for the wants of the wealthy, where is the amateur's bed?" Well, few small places are without water, and nothing need be easier than to introduce it into a nicely formed trench, two or three feet broad, and to plant the cresses. This trench might be hooped over, and covered with roses, or some favorite creeper, and I imagine few spots in the garden would be found more useful or ornamental.

Since writing the above, the idea struck me that water-cresses might be cooked like the tops of radishes, and that they would make a useful addition to our delicate culinary vegetables. I therefore tried the experiment. The first time I cooked the stems and leaves together. They required but a few minutes' boiling, but the leaves were done long before the stems. The second time I had the leaves only, with a

small proportion of the top stem, boiled in a little salt, and the result was a very delicate dish; but, like spinach, it takes a good basketful to make one. For invalids and impaired constitutions, I am of opinion that it will prove a first rate vegetable.

IS MARKET GARDENING PROFITABLE?—To this question only an approximate answer can be given, owing to the difficulty of getting at the truth of the matter. An acre of early cabbages on the best land, 18 inches apart, in rows 20 inches asunder, would contain about 17,000 plants or so, which, if all sold at 1*d.* each (and good early cabbages fetch more than that,) would realize about 70*l.*; but then more or less of them always fetch a much lower sum, and, therefore, we must descend in our scale of prices. The above number at 9*d.* per dozen would fetch about 50*l.*, at 6*d.* per dozen about 35*l.*, and at 3*d.* per dozen about 18*l.*; an acre of early white cos lettuces, grown after celery upon the richest land, a foot apart each way, would realize 1*s.* per score of 22 to the score, and if all sold at the above price, the aggregate sum would be 90*l.*, but, like the cabbages, many are sold for much lower prices. Then after cabbage or lettuce take celery. Some plant this in rows 4 feet distant, while others place it 5 and 6 feet apart, and if large fine heads are desired the plants ought to be 10 inches asunder in the rows—say 8000 plants to an acre. This number, at 1*d.* each, would fetch about 35*l.*; but like other crops, if early and fine, they fetch 15*d.* and 18*d.* per dozen, and there is always an intermediate crop of lettuce or coleworts to come off before the celery wants moulding up. This intermediate crop will fetch about 5*l.*, so that the average receipts of an acre may be set down at 90*l.*

The expenses involved in the production of cabbage and celery crops, which occupy the acre nearly 15 months, are as follows:—Trenching an acre, about 2*l.* 10*s.*; 30 loads of manure, at 7*s.* 6*d.* each, say 12*l.*; dunging the trenches for celery, say 6*l.*; planting the crops, 1*l.* 5*s.*; seeds of various things, 10*s.*; hoeing several times, 2*l.* 10*s.*; rent 9*l.*; tithes 10*s.*; clearing off the several crops, say 4*l.*; washing and

packing of produce, moulding up celery, &c., 4*l.*; horses, waggons, carts, carters, market fees, &c., about 3*l.* 10*s.* Total, about 45*l.*

I am acquainted with a garden which contains 60 acres of choice fruit trees, whose blossoms were all destroyed by frost during three consecutive years. Now, on these 60 acres, the same expenses are incurred every year, whether they bring forth fruit or not; so that taking this loss, that of broccoli from frost, and other things, into consideration, the profits of the market gardener are not so large as at first sight they would appear. No doubt, in favorable seasons, they make a considerable sum of money; but owing to the vicissitudes of climate, the introduction of duty free foreign productions, and the fluctuation of prices, this desideratum is, at least, rendered very precarious. We have few instances, indeed, on record, of market gardeners becoming rich. By means of perseverance and great industry, however, they manage to live comfortably, and effect much good in the country, by spending large sums of money in labor; but as I have just shown, the profits of the occupation are small.

I have endeavored to ascertain the number of acres under cultivation for the supply of the various London markets, and the result of the inquiry is, that about 12,000 acres are occupied by vegetables, and about 5000 by fruit trees. These lie chiefly in the counties of Middlesex, Essex, Hertford, and Bedford, on the north side of the Thames; and Kent, and Surrey, on the south side; and some 35,000 people are employed on them. But this is not taking into account those more distant counties which, by fits and starts, send up the produce of acres of turnip tops, cabbages, peas, and other things; while hundreds of acres in Cornwall and Devonshire are employed in growing early potatoes, broccoli, peas, &c., which reach London by rail.

In writing these papers, I have endeavored, as far as possible, to steer clear of mentioning names of vegetables, knowing well the labyrinth into which such a subject would lead me; for their aliases are endless. Besides, what will suit one soil will not suit another, and the march of improve-

ment is so rapid that sorts highly valued to-day will be thought less of to-morrow, and will ultimately disappear altogether to make room for more valuable kinds. These then are some of my reasons for not mentioning varieties.

In conclusion, I trust that some benefit may have been derived from what I have written on the subject of market gardening; and although a few errors may have crept in, I hope that on the whole they may have given satisfaction.

This paper concludes Mr. Cuthill's series of articles upon market gardening around London; and we believe their perusal will confirm all we said in our prefatory remarks. They show a system of thorough cultivation which can only be effected in the manner he names, viz., by deep and frequent trenching, and liberal manuring; to rely upon anything else than these, the market gardener around London could not pay the rent and labor of his land.

We trust these papers have awakened attention to the importance of trenching; if they have not, anything which we could say upon this point would fail to do so. It is the key to all successful cultivation.—ED.



ART. III. *Descriptions of Three Varieties of Pears, with Engravings of the Fruit.* By B. DESPORTES, Angers, France.

IN our last volume (XVI, p. 489,) we presented our readers with a communication from M. Desportes, describing three new varieties of pears; we now have the pleasure of presenting the descriptions of three other varieties of recent introduction to our collections, and one of which, the La Juive, has not yet, we believe, fruited here. We are gratified to add, that M. Desportes will keep us informed of all the new sorts of merit, which are introduced to the extensive collections at Angers, as soon as they are fully proved.—ED.

Dear Sir,—I take great pleasure in sending you the outlines and the descriptions of some new pears, which have fruited on the specimen trees in M. André Leroy's nursery at Angers, (France.) If you find them worthy of insertion in your estimable journal, please do so.

1. BEURRE' ST. NICOLAS.

Fruit, large, long, pyriform, but not uniformly shaped; *Stem*, large, irregular, stout at the base, curved; *Skin*, gray,

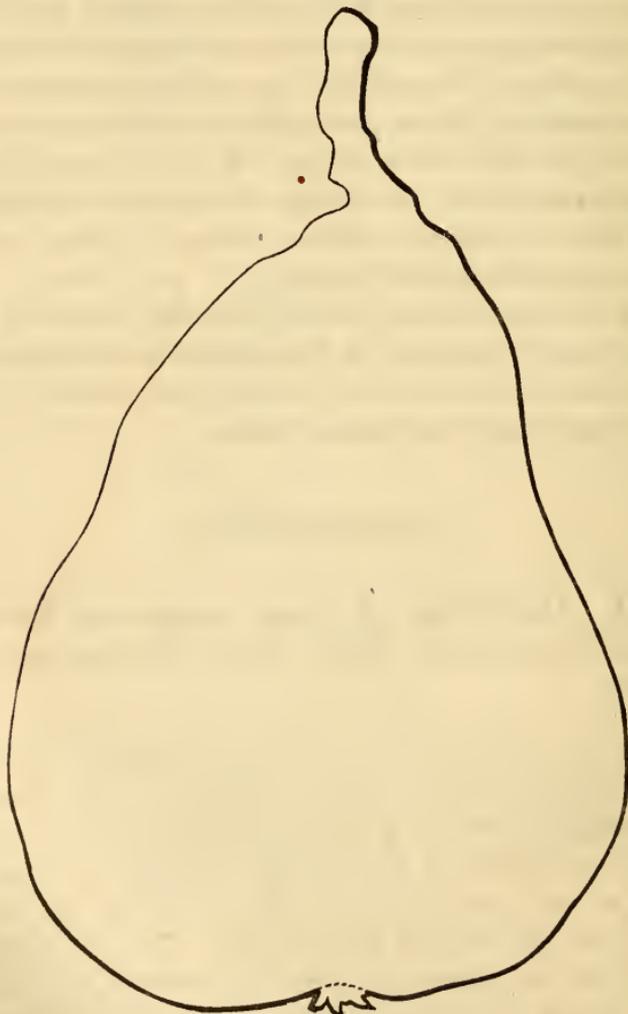


Fig. 51. *Beurré St. Nicolas.*

shaded with yellow spots towards the stem, and with speckles towards the eye, lightly colored on the sunny side; *Flesh*,

white, very nice, very melting, buttery; water abundant, sugary, perfumed, and highly flavored.

It is a very excellent pear, not surpassed in quality by any other. Ripens about 15th September. It was raised in the garden of St. Nicolas, at Angers, ten or twelve years ago.

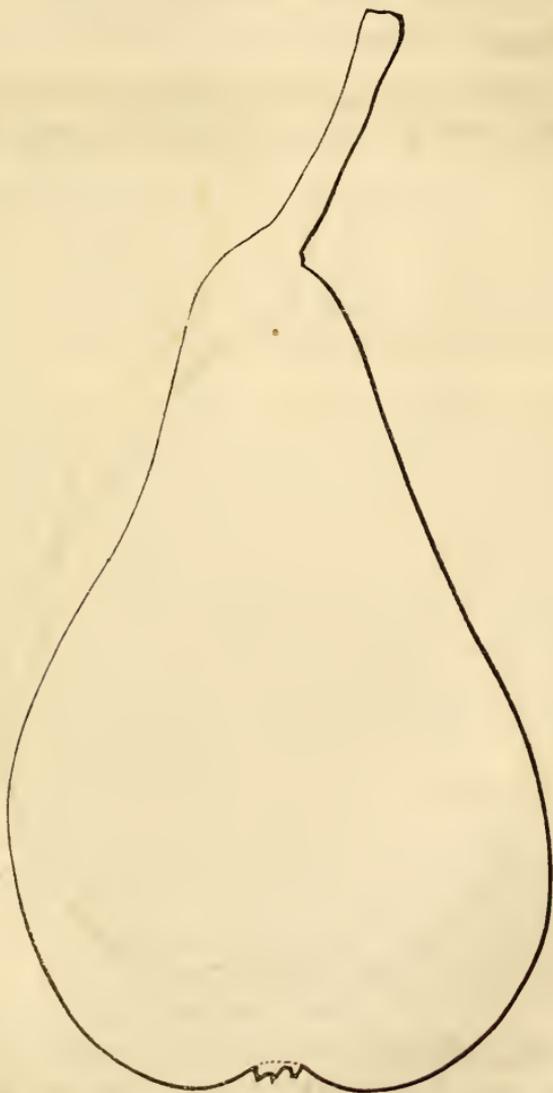


Fig. 52. Saint Michael Archange.

2. SAINT MICHAEL ARCHANGE.

Fruit, of middle size, long, regularly, but sometimes undulated, pyriform; *Skin*, very slight, yellowish gray and

green spotted; *Flesh*, greenish white, nice, very melting, buttery; water abundant, agreeably perfumed, and deliciously aromatized.

This very excellent pear is one of the best of the season; ripens end of September and October.

3. LA JUIVE.

Fruit, pyriform; *Stem*, short, stout, inserted at the surface; *Skin*, slight, yellow colored, sprinkled with gray specks and

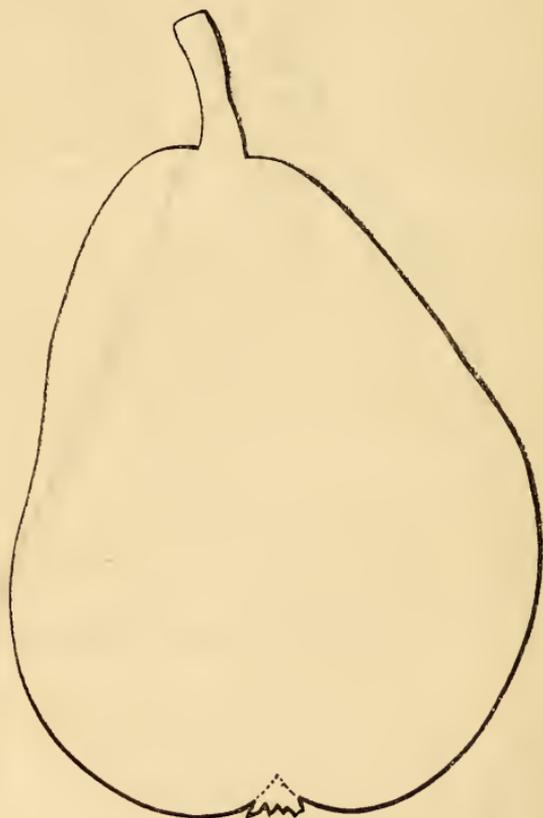


Fig. 53. *La Juive.*

lines; *Flesh*, yellowish, nice, melting, buttery, juicy; water very abundant. A very delicious pear; first rate. Ripening in September and October. Vigorous tree, pyramidal shaped, straight branched.

Angers, France, September 2, 1851.

ART. IV. *Pomological Gossip.*

THE POMOLOGICAL DISCUSSION AT ROCHESTER.—In our last number we briefly noticed the pomological discussion which took place at Rochester, during the week of the Fair of the New York State Agricultural Society, and gave the results of the discussion upon the Hawley, Northern Spy and Wagener apples. Our notice, however, was not complete, as, since then, some further debate has been published in the *Rural New Yorker*, upon two other varieties, viz., the Melon and Early Joe. We therefore embrace the opportunity to give a short account of the discussion upon the several kinds, and the decision of the meeting upon the last two varieties above named.

Hawley.—Mr. L. F. Allen, of Black Rock, said that it appeared to him the object of these meetings should be to determine something for the government of fruit growers in relation to soils as well as the species [varieties] of fruits. His reading on the subject had been extensive, but he had been unable to form definite conclusions as to the soils, localities, &c. best for particular fruits. If, in the discussion of these things, each would state his own experience as to soils, &c., it would better satisfy people who are engaged in cultivating fruit, and be more profitable.

J. W. Bissell moved the Hawley is a first-class apple, but should be grown on heavy soil.

Mr. Barry thought there had not been sufficient evidence on this point. He had seen fine crops of it on light soil. Two trees on different soil might present different results. We need a variety and a good many facts before settling upon the soil required for its growth.

Mr. Frost, of Chemung, said this variety had been grown near Binghampton, upon light gravelly soil, and it was highly esteemed there. The crops were frequently heavy.

The resolution of Mr. Bissell was amended so as to read as we gave in our last number, page 467.

[We are inclined to the belief that Mr. Allen attaches too much importance to the particular composition of soils suited to particular sorts of fruit, and the facts, as stated above, seem to support our view of the subject. Mr. Bissell offered a motion that "it should be grown on a heavy soil." Mr. Barry states that he has seen "very fine crops on a light soil." Both of these gentlemen are nurserymen of experience, and ought to know something about it. The truth is, that locality does have a material influence upon trees, and in most instances, where we hear that they do not thrive or do well, and the fault is laid to the soil, it belongs rather to the locality, which may be exceedingly wet or exceedingly dry, or subject to these two extremes alternately. But let the subsoil be right, neither subject to over-saturation or too great aridity, and it matters little what the surface soil is, provided it is *deep, well trenched or pulverized, and judiciously manured*. We might give abundant evidence of this, but have not the time or space now.]

Northern Spy.—Col. Hodge, of Buffalo, was sorry to hear it remarked that the Northern Spy would prove a failure. In the vicinity of Buffalo, upon a rich soil and with good cultivation, it had succeeded admirably.

Mr. L. F. Allen said he had gone into the raising of the Northern Spy pretty extensively. He put the trees into stiff soil, part clay and gravel. They disappointed him in not bearing early. The other day, however, he was surprised to see the fine growth the Spy had made in comparison with other kinds. He intended to go into their cultivation largely. The tree is apt to get a bushy head. Last spring he thinned them out, and found great benefit from it. If people would cultivate their orchards as well as they do their potatoes they would find the Northern Spy one of the best apples grown.

Mr. Langworthy thought that there was a possibility of our being deceived yet as to the Northern Spy. The experience had been with young trees. In Bloomfield he had seen some quite inferior fruit of this kind. They had no distinctive flavor, and their chief excellence was their fair size, freedom from blotch and warts, and their long keeping.

Mr. Allen asked if the orchards in Bloomfield were well taken care of.

Mr. Bissell replied, that they were old, and overgrown with suckers. The only wonder was, that there should be any fruit on them at all. In Mendon there were trees fifteen years old, that bear uniformly well.

Mr. Hooker said, the test of an apple should be applied in its season. He thought there was no apple that suited more generally in its season.

Mr. Barry concurred in the last remark. He had seen them in high condition on the 4th of July.

Mr. Smith, of Macedon, thought it would suffer in comparison with the Baldwin.

Mr. Allen regarded it as an objection, that the Spy was tardy in bearing. The perfume of this apple was very pungent, a single one sometimes perfuming a large room with its delightful scent.

Mr. Langworthy said the perfume of the Spy was wholly in the skin, and had nothing to do with the flavor of this apple.

Mr. Allen's motion, which we gave in our last, was then agreed to.

[It is no wonder that cultivators are puzzled to learn the merits of this fine apple. Three years ago it was said that "only *seventeen* barrels out of *ninety* were found fit for market." And now Mr. Langworthy states, that the only good qualities of the Spy are its "*fair size, freedom from blotch and warts!*" As to the perfume of the Northern Spy being wholly in the skin, we should like to see any apple which had much perfume after its skin was taken off.]

Wagener.—Mr. Barry said this apple had obtained a high reputation throughout the country. He had been to Penn Yan to see the old tree, to ascertain its qualities, and he found some fine specimens. As compared with the Northern Spy and Esopus Spitzenberg, he regarded it as inferior in some respects. It keeps until May, and the tree bears well.

Mr. Thomas had seen some fine specimens, but wished for further information.

Mr. Frost said the tree grew finely, yielding uniformly good fruit, and was a long keeper. He had tested it with the Spy, and gave the preference to the Wagener, in respect to flavor and fineness of the grain.

Mr. Bissell thought the test not a fair one, because the Spy was not mature at the season of the Wagener.

Mr. Allen gave the history of this apple. He would not, perhaps, call it a first rate apple, but as a good apple of high quality for its season. The knowledge of it was not sufficient yet to admit of a more decided opinion.

After some further discussion, of no particular reference to this apple, the vote was passed which we have already given.

Melon.—Mr. Barry regarded this as the best of all apples. He had taken specimens to Europe, and, on all hands, it had been received with great favor. Many who grew apples extensively, said they did not know that a variety of such tenderness and fine texture, existed. The tree is a poor grower, but a good bearer. It keeps till May, and may be eaten all winter. As to the soil best suited to it he could not say; but he considered a good substantial loam best.

Mr. Smith endorsed all that Mr. Barry said. Its great beauty, and other desirable qualities, should give it a place in every orchard. It is so delicate, however, that it is apt to be injured in gathering, so as to prevent its long keeping.

Mr. Allen thought it might be recommended as a good apple for family use, as far as tested. After some further discussion, it was considered "as a first rate apple, as respects flavor, and general good qualities, and that it is an excellent fruit for family use."

[We do not wish to be hypercritical, but to what other purpose would the meeting put a good apple to but "family use?" We think if the last *ten* words of the above resolve had been omitted it would have, at least, shown a better taste.]

Early Joe.—Mr. Langworthy's opinion of this apple was, that it was one of the first rate September apples. It ripens in the peach season, and was, therefore, not valuable. It is a fine apple in all respects, and a good bearer. For richness and delicacy he regarded it excellent.

Mr. Thomas spoke well of the fruit. In its prime it was excellent, but it must be eaten by a chronometer, from the tree.

Mr. Bissell recommended every one to have one or two trees of this apple.

Col. Hodge regarded it as a *very good* apple, and coincided with what had been said of it.

Mr. Langworthy moved that it be recommended as a good apple for limited cultivation and family use, which was agreed to.

[Our Rochester friends appear to be jealous of our Boston reputation as a city of "notions." For certainly that must be only a *notion*, and a queer one, which denounces an apple as "not valuable," because it ripens in the "peach season." From this are we to infer that no fruit is eaten in Rochester in September but peaches? Taking this as a rule, the Bartlett pear is "not valuable," for it ripens when peaches are in the height of perfection. Yet, in our Boston market, Williams and Porter apples command \$2 to \$3, and Bartlett pears \$5, per bushel; and extra fine specimens much higher prices. The able chairman of the Fruit Committee of the Massachusetts Horticultural Society, in his last annual report, particularly alludes to the paucity of fine September apples, and truly remarks, that "we need, among others, an apple suited to our soil and climate, and general cultivation, and of superior quality, to succeed the Early Harvest." Just the time when it is said apples are "not valuable."—ED.]

Pear Blight.—The further discussion related to the pear blight, and curculio, but nothing new was elicited.

Mr. Thomas believed the disease contagious. His remedy was the knife.

Mr. Hooker supported Mr. Thomas's views. He said he believed some varieties of the apple more subject to the disease than others, and so of the pear.

Mr. Barry's impression, after much experience, was, that it was caused by insects. One strong evidence of this, he said, was, that not only the pear, but the thorn, quince, and med-

lar, were alike attacked by the "blight." The knife he thought was, and is, the best remedy yet known.

Dr. Warder, of Cincinnati, remarked that the disease sometimes attacked the tree below the ground. What avail then will the knife be? The Passe Colmar, and Seckel, are more subject to the blight than other varieties.

Mr. Barry offered a resolution, "that we look with favor upon the theory that the pear blight is the work of an insect." 5 ayes; 16 noes.

Curculio.—Mr. Pardee had tried whitewashing the fruit, and found it a successful preventive against the attacks of this insect.

Mr. Hooker said, jarring the trees, and catching the curculios in a sheet, was a very effectual remedy.

Mr. Thomas said, the best way to jar a tree was to saw off a limb, and strike the end with a hammer.

Mr. Allen regarded the "jarring" as being well established; also, that poultry and pigs were good preventives.

Mr. Barry would plant plums so that pigs and other animals [not *two legged* ones, we presume,] may have access to the trees, so as not to injure them.

No motion was made in regard to the curculio.

ROUGH AND READY OR PRIMATE APPLE.—In our volume for 1850 (XVI, p. 450) we published a full account of this new and fine variety, communicated by Mr. C. P. Cowles, of Syracuse, N. Y., and accompanied the same with an engraving of the fruit. It was the first knowledge we had of such an apple, and we supposed it to be, as Mr. Cowles stated, a new seedling which originated in New York, in the vicinity of Onondaga.

But immediately after the appearance of Mr. Cowles's communication, Mr. A. Fahnestock, now of Syracuse, informed us that it was not a seedling variety, but, on the contrary, a very well known and considerably disseminated apple through Onondaga county, and was called the Primate; and he kindly offered to communicate what he knew in regard to it for publication; but for some cause, at that time, the subject was overlooked, and it was not until a few weeks since that

Mr. Fahnestock fulfilled his promise, sending us, at the same time, three or four dozen of the apples in the finest condition. Mr. Fahnestock's letter is as follows:—

Dear Sir:—As we failed to get the Primate apple at Geneva we procured them at Benton, where the original and first grafting was done by Mr. Lyman Tubbs, the Eastern grafter, who brought the scions from the East with him, and grafted them on a farm which he purchased at Benton. We procured the specimens we now send you from these trees. They are called by him the Harvest apple. They were disseminated afterwards around Benton, Geneva, Brighton, near Rochester, and in Onondaga county, in which last place Mr. Cowles saw the apple and concluded it was a seedling.

The oldest trees near Benton are from thirty to forty years of age, and are the largest of all in the county. Mr. Lyman Tubbs now lives in Michigan, and, as I am informed, in Kalamazoo city.

Mr. Peter York, at Benton Centre, when his trees came into bearing, called it the "Primate apple," as it was about the first and best, as he has so informed us. Mr. Powers, near Geneva, also had his trees grafted, and when they came into bearing and grafts were taken from his trees, they were called the "Powers apple." These apples have been cultivated by Mr. York upwards of thirty years, and by Mr. Parsons upwards of twenty years, and by Deacon Bronson twenty years. These apples commence ripening with the Early Harvest, and last for two or three months; they are more mild and pleasant and of larger size. The tree is stocky, upright, with a broad, deep green, heavy leaf. We hope you will notice this fruit as it deserves, for we consider it one of the best of its season, both in size and quality. Our firm has cultivated this apple for several years, and we now have a large stock of fine saleable trees.

Perhaps, from the above, you may be able to find out what the apple is and the true name. In the mean time I would suggest that it be called the Harvest or Primate apple; perhaps the latter name would be more appropriate, as the former

might be confounded with the 'Early Harvest, and it is generally known by the name of "Pimate." Very respectfully
YOURS, A. FAHNESTOCK. *Syracuse Nursery, Syracuse, N. Y.,
Sept. 2d, 1851.*

We are glad to publish the above, as it not only gives what appears to be a correct history of one of the very best apples, but fully establishes the priority of the name of "Pimate" over that of Rough and Ready, a common-place and objectionable cognomen. Mr. Cowles, undoubtedly, was not aware that the variety had been so long or so extensively cultivated, or he would not probably have suggested a name. But as it was desirable so fine a fruit should be made known to all cultivators, he was justified, in the absence of a full history of the variety and a knowledge of its former name, to give it one of his own. If, however, Mr. Fahnestock is correct in his statement, it must now be set aside for that of "Pimate."

It only remains for us to say that the specimens sent us, came fully up to the character given to it in the description referred to in our magazine. It is, without doubt, one of the richest of our early apples; of good size, fine form and beautiful appearance, and certainly the tenderest fleshed apple we have. The tree bears well, and the fruit ripens in succession for a long time.

THE WALWORTH APPLE.—In our last volume (XVI, p. 541) we gave a brief account of this new variety, which originated in Plattsburg, N. Y. At that time we thought it might prove identical with the Bailey Spice, another apple which originated in the same town. This year, however, we received a quantity of the two varieties, the Bailey Spice, from Mr. Bailey, and the Walworth from Mr. Battey, and we have been enabled from these to make a description of the former, and to satisfy ourselves of the difference of the two sorts. They are certainly quite distinct, and had Mr. Bailey's description been accurate, even without the specimens themselves, we should not have supposed they might be identical. Had he said that the Bailey Spice was ribbed,

as it is quite prominently, it would have, at once, prevented us from falling^s into such an error. In all other respects the two are similar, except in the quality of the fruit, the Walworth being the best.

The Walworth we shall figure in our next volume. In the mean time we would state that it is a superior apple, bearing a great resemblance to the Porter, of nearly the same form and color, but with a deeper red cheek, which renders it even more beautiful than that variety. It is also a little later, and has a softer and more tender flesh and a less acid juice than the Porter. With the Early Harvest, Primate, Porter and Walworth, not to mention other equally as fine apples, a succession may be kept up from the ripening of the first summer sorts until the fall apples become abundant.

FREDERICK OF WURTEMBERG PEAR.—There can be no doubt in our minds, that the pear so long confounded with the Capiaumont, but now known as the Frederick of Wurtemberg, is the true variety raised and so named by Van Mons. The present season, however, we have fruited in our collection another and distinct pear under this name, and, to our taste, a *better* pear than that, in the best condition of that variable variety. It has the same peculiar beauty of the original variety, viz., a rich yellow skin heightened by a deep vermilion cheek; it is also nearly or quite as large. In point of excellence it is much superior, possessing a peculiarly rich, sugary and aromatized flavor, scarcely surpassed by our very best pears. It keeps a long time, and specimens gathered four weeks ripened off finely, showing no appearance of decay outwardly or inwardly. The flesh is firm, yet exceedingly buttery, melting and juicy. Season, September to the middle of October.

Whatever may be its true name, it is a variety deserving of extensive cultivation; and we shall describe and figure it in our next volume. In the mean time we may be able to ascertain its correct name, as a continuation of its present one will be likely to lead to confusion and repeated mistakes.

ART. V. *On the Evils of indiscriminately Watering Plants in Pots immediately after being shifted.* By H. BOCK.

To insert cuttings of plants, particularly those of a soft, woody or succulent nature, into moist materials, before the wounds made in preparing them are healed over, is often attended with fatal consequences, from the moisture finding its way into the pores of the plant, thereby causing putrefaction and decay.

The woody parts of plants being more consolidated and less porous than their roots, are altogether less calculated to imbibe an undue portion of moisture, yet we find that even these do so to a most injurious extent; therefore, we may reasonably conclude that roots mutilated and placed in the same circumstances would have a greater chance, from their peculiar organization, to suffer from such a cause; nor can there remain a doubt that they do so. This points out as most injudicious, the practice of turning plants out of their pots, reducing their balls, as the case may be, thereby lacerating every fibre, and placing every rootlet in a worse position than a cutting, and then finishing the operation by giving a good drenching of water, which, as we have already seen, must make dire havoc among the previously reduced channels by which the plant receives its food.

Such is, in a great measure, the cause of delicate plants suffering so much from shifting, of the check they receive unless the operation be carefully performed, and consequent loss of time in recovering from its effects. Still this is an every-day practice, that has descended to us hallowed by the customs of ages, and sanctioned by the highest authorities. Who ever heard of directions for shifting or potting plants, that did not end thus?—Give the whole a good watering to settle the mould in the pots, and the operation is completed.

After shifting or transplanting plants in hot dry weather, when arid atmosphere causes, by excessive evaporation, an unusual drain upon the roots, the necessity of a supply will soon become apparent; and administering it under such circumstances is less injurious than under any other, from the

activity maintained in every part of the plant rendering stagnation an unlikely occurrence. But even then, when practicable, it is better to confine them in a close moist atmosphere, which, with water over head and shade, will enable them to exist through the medium of the leaves until growing has commenced, and the roots are in a condition to receive, without injury, the necessary supply.

It is, however, when there is a deficiency of heat, vegetation languid, and a corresponding danger from excess of moisture, that such precaution is most required, and the contrary practice most hurtful. Among seedlings of tender sorts the mortality from such maltreatment is truly great; and when the impossibility of transplanting such without, in some shape, hurting their few and almost unformed spongeoles, scarcely more consolidated than the fluid in which they are thoughtlessly immersed, is considered, their certain destruction is not to be wondered at. The advantages these derive from the treatment described, led me first to examine more closely what I deem a matter of much importance.

Before quitting the subject for the present, I may here add, that the injury inflicted by such treatment is not confined to plants alone; the soil, also, is oftentimes irreparably injured. It has been placed between the sides of the pot and the root-bound ball containing the plant, where, being in a comparatively loose state, it receives the whole of the water that is considered sufficient to moisten the whole mass; as, where there is so little resistance, it is as effectually repelled by the hard, and much more by a dry, ball as by the sides of the pot. This reduces what has been added to the condition of a puddle, and in this state it stands a good chance of being baked as hard as a brick. At all events, it has been totally unfitted to afford that nourishment to the plant it otherwise would have done. Such consequences may be avoided by applying moisture gradually; but if some time is allowed to elapse there is not so much to fear, even from the usual soaking, as the old and new material must, in the interim, have become equally dry; a state, let it be remembered, indispensable to the thorough incorporation of such materials.

Cushing's Gardens, Watertown, Mass., Sept. 20, 1851.

REVIEWS.

ART. I. *The American Pomologist ; containing Finely Colored Drawings, accompanied by letter-press Descriptions of Fruits of American origin.* Edited by W. D. BRINCKLE, A. M., M. D. No. I. Vol. I. Philadelphia : 1851.

THIS is the title of a new work, published by Mr. A. HOFFY, of Philadelphia, in the same style as the *Orchardist's Companion*, which was abandoned after the fifth number, but differs from it in being exclusively devoted to fruits of American origin. It is to be edited by our correspondent, Dr. BRINCKLE, who is abundantly able to do justice to his department of the work. The plates are drawn on stone, by Mr. HOFFY, and are colored under his direction.

We are glad to see that there is an increasing demand for works of this description. Our *Fruits of America* was commenced with a view to supply information of this kind, and to make known all the fruits worth growing, both of foreign and native origin. For we have long thought it important, and indeed absolutely necessary, to have some better guide than mere descriptions, to lead us out of the confusion into which the nomenclature of our fruits has fallen.

A work of the kind of Mr. HOFFY's, though of much less importance than one which embraces the foreign fruits, because our native kinds have not yet become encumbered with synonymes, is, notwithstanding, a pleasant contribution to our Pomological literature. It is interesting to become acquainted with the many choice varieties of native origin, even before we may have seen them in fruit.

The work is published in quarto form, and each number contains ten colored plates, and ten pages of letter press. It is to appear not oftener than once in three months, and four numbers complete a volume.

ART. II. *A Muck Manual for Farmers.* By SAMUEL S. DANA. 1 vol. 12mo., pp. 345. Third edition, revised and enlarged. Lowell: 1851.

THIS is a new and revised edition of Dr. Dana's *Muck Manual*, which we reviewed at some length when first published in 1842. What we said then we may repeat now, that it is a valuable work to the agriculturist and horticulturist.

Of the additions and alterations the author says, in his preface, "That he has in this, presented more fully the results of soil analysis, and hopes that he has substantiated the position, that there is great uniformity in the chemical constitution of the soil. It is a great step. Time will show whether agriculture is to be still further benefited by chemical analysis of soil. Too much has ever been expected from this application of science, and the disappointment which has resulted has led some of the most sagacious and acute agricultural chemists to declare that 'soil analysis is more curious than useful.'"

It is gratifying to hear of such an admission by so eminent a chemist as Dr. Dana. For one would judge, to see the notices in some of our agricultural papers, that every man's garden was made of an entirely different soil, so different, indeed, that nothing will grow in one, which will produce the most abundant crop in another. "Too much has ever been expected from this application of science," says Mr. Dana, and we trust this will be borne in mind.

We commend the volume to the attention of all who are in any way concerned in the cultivation of the soil. It will be found a valuable aid to the better improvement of soils, and the application of manures.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

ON AGRICULTURAL CHEMISTRY, ESPECIALLY IN RELATION TO THE MINERAL THEORY OF BARON LIEBIG.—In a recent article in the *Agricultural Journal*, Mr. Pusey had quoted the experiments of Mr. Lawes and Dr. Gilbert as being conclusive against the “Mineral Theory” of Baron Liebig, which asserts that the crops on the farm rise and fall according to the supply within the soil of the mineral constituents indicated by an analysis of the ashes of the plant. To these observations of Mr. Pusey, Baron Liebig has replied at some length in the new edition of his “*Letters on Chemistry*,” just published, and in doing so, has asserted that the experiments alluded to are without value, and that the statements of the authors could only be made in ignorance of the *rationale* of agricultural practices on the large scale. The authors have therefore given in the present paper an outline of their investigations in agricultural chemistry; comprising an extensive series of experiments in the field on the growth of the principal crops entering into a rotation, as well as on the chemistry of the feeding of animals, and that of the functional actions of plants generally, in relation to the soil and atmosphere: in connection with all of which branches much laboratory labor has constantly been in progress since the commencement of the experiments themselves in 1843. The results selected by Mr. Lawes and Dr. Gilbert, in justification and illustration of their views, were those of the field experiments on wheat, grown continuously on a previously exhausted soil for the last eight years, and in each season, by means of many chemical manures by the side always of one or more plots unmanured, and one manured continuously by farm-yard manure. Some of the results thus obtained were illustrated by a diagram, from which it appeared that mineral manures had scarcely increased the produce at all when used alone, whilst the effects of ammoniacal salts were very marked, even when repeated year after year on the same space of ground from which the entire crop—corn and straw—had been removed. Indeed, in this way, a produce had been attained even in the sixth and seventh succeeding years of the experiment, exceeding by nearly two-thirds that from the unmanured plot. It was then shown that the mineral constituents of the soil continued to be in excess, relatively to the nitrogen available for them from natural sources. The history of several plots was then traced down to the last harvest (1850,) and it was argued that the statements assailed by Liebig, viz., that ammonia was specially adapted as a manure for wheat, was fully borne out when speaking of agriculture as generally practised in Great Britain. In other words, that in practice it was the defect of nitrogen rather than of the mineral constituents that fixed the limit to our produce of corn. The authors next called attention to the fact of the exhalation of nitrogen by growing plants, as proved by the experiments of De Saussure, Daubeny, and Draper, and they referred to some experiments of their own, with the view of showing the probability that there is more of the nitrogen derived from manure

given off during the growth of cereal grains than by leguminous and other crops; and hence might be explained the great demand upon nitrogeous manures observed in the growth of grain. The authors suggested that here was an important field of study, and that we have in the facts alluded to much that should lead us to suppose that the success of a rotation of crops depends on the degree in which the restoration of the balance of the organic constituents of crops was attained by its means, rather than on that of their mineral constituents, according to the theory of Liebig; whilst the means adopted to secure the former were always attended with a sufficient supply of the latter. Again, Prof. Liebig has quoted the processes of fallowing and liming, as being in their known results inconsistent with the views of Mr. Lawes and Dr. Gilbert; but these gentlemen considered that the experiments of Mulder and of Mr. Way on the properties of soils justified them in supposing that the processes of fallowing and liming owed their efficacy more to the accumulation of nitrogen in the soil from natural sources, than to that of available mineral constituents; the latter did, however, undoubtedly thus accumulate by those processes, and this fact should give us more confidence in views which, on independent evidence, supposed that they were not so easily liable to be found in defect in relation to other necessary supplies. It was next shown, by reference to what happens in actual practice as generally followed in Great Britain, where corn and meat constitute almost the exclusive exports of the farm, that the mineral constituents of the crops, taken collectively,—that is, as shown by the analysis of their ashes, could not be considered as exhausted: of these, however, phosphoric acid was lost to the farm, in much larger proportion than the alkalis; whilst the latter would generally, by the combined agencies of disintegration of the native soil, and import in cattle food, be liable to diminution in but a very insignificant degree, if not in some cases to accumulation. Practical agriculture had, indeed, decided that phosphoric acid must be returned to the land from sources external to the farm itself,—viz., by bones, guano, or other means. But, on the other hand, artificial alkaline manures had generally been found to fail in effect. Indeed, taking into careful consideration the tendency of all experience in practical agriculture, as well as the collective results of a most laborious experimental investigation of the subject, both in the field and in the laboratory, it was the authors' deliberate opinion that the analysis of the crop is no direct guide whatever as to the nature of the manure required to be provided in the ordinary course of agriculture, from sources extraneous to the home manures of the farm,—that is to say, by artificial manures. Reviewing, then, the actual facts of practical agriculture, the authors could not agree with Baron Liebig when he asserted that our grand object should be to attain an artificial mixture to substitute for farm-yard manure, which he admitted to be the universal food of plants. The very practice of agriculture itself, as followed in this country, necessitates the production of farm-yard manure, and all our calculations should be made on the supposition of its use.—(Mr. J. B. Lawes and Dr. J. H. Gilbert, in a paper read before the British Association for the advancement of Science.) (*Gard. Chron.* p. 564, 1851.)

CULTIVATION OF THE STRAWBERRY.—Mr. Beach, a market gardener at Isleworth, having surprised every one this year with his British Queen Strawberries, both in Covent Garden, at Chiswick, and the great exhibition, they having been not only extremely large, but fine in flavor, I got an introduction to him in London, and he at once asked me to go down with him to Isleworth, and see his place. He is one of those John Bull ready-witted class of men, dark, and sun-burnt, somewhere about 55 years of age, and looking altogether as if he had spent a month on the south side of the Rocky Mountains. We took the train at the Waterloo station, and turned off by what is called the loop line, at Mortlake, through a large tract of market gardening ground. Mr. B.'s garden lies near the bottom of a gentle declivity, about a mile from Hounslow; there is a large pond at the east end of his land, with about twenty springs continually flowing into it, and this pond affords the means of irrigating the whole of his ground. His strawberry land, which consists of about ten acres, forms a parallelogram, whose longest side runs south and north, the south end being about six feet below that on the north, while there is also a declivity from west to east; making it altogether peculiarly suitable for irrigation. When Mr. Beach took this osier ground, for so it was, about five years ago (and there is part in willows now,) he saw that owing to the springs and the two falls of the ground, as well as the texture of the soil being a sandy, dark, loamy, soapy, vegetable material, that it would answer the purpose to which he has applied it well. He took a lease of it, and the first thing he did was to make a cart-way on the west upper side, throwing up the earth some two feet above the general ground, so that the path where the horse goes is from ten inches to a foot deeper than where the wheels pass along, thus forming water-courses all along. The next thing he did was to form his ground into ridges, about 40 feet wide, running the short way of the square; the centres of these ridges are planted with pears and apples, and between with black currants, with crops, such as never were seen before. About three feet from the trees on either side are water-courses, leading to the bottom of the ground, where there is a mill stream, and on the two declivities between the rows of trees are his strawberries, some five or six rows of which are planted along the sides of the two feet broad ditches, between the ridges. These ditches receive the irrigating water, which percolates under the plants down into them. It is unnecessary to describe the size and strength of the plants, as well as the enormous crops they produce. His heaviest queens weighed three ounces; all his plants stand two feet apart each way.—(*Gard. Chron.* 1851, p. 485.)

FLOWER GARDEN PLANTS.—There are few things connected with gardening which require more, or receive less thoughtful attention than the management of flower garden plants, during the winter and spring months. The well known fact of verbenas and many other bedding plants being half hardy, has encouraged the idea of a slight protection, only, being necessary for their preservation from frost; and the only provision made to secure this has, in many places, been the erection of ranges of brick pits with glass lights; and as any means of applying artificial heat was considered unnecessary, none have been employed. As I have for several

years watched the effect of this treatment, I will just describe what I have seen. About this time, or a little earlier, the cuttings are struck; after a while they are potted singly in small pots, and then placed in the pit, where they enjoy plenty of air and light. For a time they grow most vigorously, but then comes short days and frosty nights; a thick covering is now indispensable. Sometimes a day or two, occasionally a week, passes without this covering being removed; when it is, the damp is found to be making sad havoc; a little air is given, which, with the feeble heat of the sun, causes the plants to flag; and well they may, for the soil in the pots is very dry, but no water can be given, it would so fearfully increase the dampness of the pit. The month of February is reached, mildew is spreading in all directions, and continues to do so, in spite of sulphur or any appliance whatever, until at last a third of the plants are found to be dead, and the remainder so much diseased, that half of them at bedding-out time are valueless; in consequence of this, the flower beds are so thinly planted that it is late in the summer before they are covered, and hence arises one of the principal objections to this mode of flower gardening. Now, considering the expense of building these pits, the space of ground they occupy, the cost of mats, the frequent breakage of glass, and the amount of labor involved in their management, with the unsatisfactory result of their use, it must, I think, be admitted that the contrivance is anything but a good one. This being my opinion, I have for the last three years ceased to store flower garden plants of any kind in pits, using in preference a small greenhouse. In this house (the dimensions of which I am unable to furnish, having now left the place,) I had a trellis made nearly on a level with the bottom of the front lights; these being hung on hinges were capable of being raised by wedges to admit air, as circumstances might require; this trellis was filled with 5-inch pots, in each of which about 20 cuttings had previously been struck. Now, as 49 of these pots, containing together 980 plants, would stand upon each square yard of trellis, ample means were thus afforded of keeping an immense stock of verbenas and plants of similar habits, independently of the stage, which was kept for geraniums and calceolarias. Under the stage I made a mushroom bed, and under the trellis I placed, for rooting, the potted bulbs intended for winter forcing. My mode of treatment with the plants thus preserved, was to make the cuttings a little earlier in the season than this, choosing the points of short jointed healthy shoots; to strike them in a close frame without heat, gradually harden and stop them, then fully expose them to the weather, when at all fine, till the middle of October, the time of housing. After this, I regularly dusted a little sulphur over them once a fortnight, brushing it well about the leaves, and attended very particularly to the watering; for I am convinced that nothing tends more to the increase of mildew and the injury of all plants in pots than dryness at the roots. By strict attention to these points, and by keeping the house both cool and airy, the plants made but little growth, and were always healthy and hardy. About the middle of February the points of all the shoots were taken off and struck in an early vinery. Early in April all the verbenas I had wintered were

turned out of their pots, carefully separated, and planted deeply in the newly-dug flower beds at once; here, for about six weeks, they made no growth; I did not expect they would. Then why, it may be asked, were they planted so early? Because at that time they were very hardy, and I considered that the longer they remained in-doors the more tender they would become; besides, it made room on the trellis for the newly-struck cuttings, then in small pots, to grow and acquire strength, before they were planted out between the old ones, about the middle of May. By this method the beds were always well filled, and the house (the like of which any builder could erect and heat for 50*l.*) was available for the cultivation of fuchsias, and other plants for the conservatory, during the summer and autumn months.—(*Gard. Chron.*, 1851, p. 645.)

ART. II. *Massachusetts Horticultural Society.*

[We complete the reports of the meetings omitted in our last.]

Saturday, September 6.—An adjourned meeting of the Society was held to-day,—the President in the chair.

Voted, that three or more delegates be appointed to attend the New York State Fair, the Exhibition of the American Institute, Pennsylvania Horticultural Society, and Rhode Island Horticultural Society, and the following members were chosen:—To the Rhode Island Horticultural Society, Messrs. Newhall, Hovey, and French; to the New York State Fair, Messrs. Cabot, Weld, and Breck; to the American Institute, Messrs. S. Walker, D. Leach, W. R. Austin; to the American Institute, C. M. Hovey, Wilder, and Lovett.

Adjourned one week to September 13th.

Exhibited.—FRUIT: From A. D. Webber, melons—Christiana. From E. Wight, pears—Valleé Franche; plums—Caledonia, and Egg; apples—Red, and Green Sweet. From P. Barnes, pears—Washington. From J. Gordon, plums—Jefferson; pears—unnamed. From J. Mann, Jr., pears—Bartlett; Peaches—Thorp's Seedling; plums—Imperial Gage, Green Gage, Yellow Gage, Diamond, Coe's Golden Drop, Wilmot's Orleans, and one unnamed. From J. M. Lord, apples—English Codlin. From Isaac Fowle, apples—Fall River. From Mrs. E. Wolcott, nectarines—Roman. From C. E. Grant, peaches—Coolidge's Favorite; superior Improved High blackberries. From E. H. Wakefield, plums—unnamed, probably Diamond. From J. Lovett, 2d, melons—Christiana, very fine; pears—Bartlett; plums—Green Gage, very fine; Improved High blackberries. From E. M. Richards, peaches—Coolidge's Favorite, and other varieties; melons—Christiana; apples—unnamed. From C. A. Hewins, plums—Prince's Imperial Gage. From Francis Dana, apples—Orange Sweet, very fine. From A. D. Webber, Christiana melons.

From Breck & Son, grapes—Frankindale and White Frontignan. From

G. Merriam, pears—Bartlett, very fine ; peaches—Morris White. From M. H. Simpson, plums—Washington and Green Gage, both superior. From O. Johnson, plums—Smith's Orleans, very fine : Prince's Imperial Gage, and Green Gage. From J. F. Allen, pears—Cushing, very fine ; Belle Lucrative, superior ; Dearborn's Seedling, Passans du Portugal, and Bartlett ; nectarines—Elruge ; grapes—Bowker, a new seedling ; Black Hamburg, very fine ; Golden Chasselas, superior ; Grizzly Frontignan, fine ; White Frontignan, fine ; figs—St. Michaels and Black Brunswick ; plums—Green Gage, fine ; peaches—Coolidge's Favorite, superior.

From Hovey & Co., grapes—Black Hamburg, White Frontignan, and Muscat of Alexandria ; melons—Bromham Hall ; pears—Poire d'Ambre, and Vallecé Franche. From W. C. Strong, nectarines—Roman, Golden, and Elruge ; grapes—White Frontignan, very fine ; Black Frontignan, very fine ; Black Hamburg, fine ; St. Peters, superior ; Blanch Vyrose, (?) and White Chasselas ; peaches—Coolidge's Favorite, very fine. From C. Stone, apples—Williams's. From W. R. Austin, pears—Bartlett. From S. G. Perkins, nectarines—Boston, very fine. From A. D. Williams & Son, pears—unnamed. From H. Vandine, pears—Chelmsford, Flemish Beauty, and Julienne, (?) and two sorts unnamed ; plums—Red Gage, Huling's Superb, Aspinwall, Columbia, Scarlet Gage, Yellow Gage, and Lombard. From Dr. McKinstry, plums—two varieties, unnamed. From G. Walsh, plums—Green Gage, very fine.

Fruits tested.—J. Lovett, 2d, melons—Christiana, very fine. This, on account of its earliness, flavor and fine quality, maintains its character as the best melon for general cultivation.

J. F. Allen, grapes—Bowker, a new Seedling White grape, of an obovate form, largest at the stem end, of medium size, and sweet, pleasant flavor, and Flame-colored Tokay ; pears—Cushing.

September 13.—An adjourned meeting of the Society was held to-day,—the President in the chair.

Messrs. Brock, Richards, and Wight, were appointed delegates to attend the meeting of the New Haven Horticultural Society.

A letter was received from Mrs. General Dearborn, and it was voted to enter it upon the records of the Society.

The following persons were appointed a committee to nominate officers for the ensuing year :—Messrs. Wight, Richards, and Lovett, to report one week previous to the election.

The following members were elected :—Joseph Nickerson, West Roxbury ; George W. Reed, Charlestown ; J. C. Pratt, West Roxbury ; William Young, Fall River.

Adjourned one week to September 20th.

September 20.—An adjourned meeting of the Society was held to-day,—but there being no business of importance, it was adjourned one week, to September 27th.

September 27.—An adjourned meeting of the Society was held to-day,—the President in the chair.

C. M. Hovey appointed Secretary *pro tem*.

The committee to nominate a list of officers for the ensuing year, made a

report, and submitted a printed list of the nominations, but at the request of the chairman, it was recommitted for alteration.

On motion of W. S. King, it was *voted*, that the thanks of the Society be presented to the Committee of Arrangements for the last annual Exhibition, for the able and satisfactory manner in which they discharged their arduous duties.

Meeting dissolved.

Exhibited.—FRUITS: From C. H. Hutchings, Diana grapes, bunches well clustered and fine. From A. Bowditch, Diana grapes, of good color and well ripened. From J. Livermore, Cambridgeport, White Doyenné, and Louise Bonne of Jersey pears, all fine specimens. From Hovey & Co., Rogers's Blue plums, and Wheeler's Clingstone and Oldmixon Free peaches, both fine specimens. From R. F. Burgess, quinces. From H. Humphreys, peaches, without name, fine.

October 4.—The annual meeting of the Society, for the election of officers, was held to-day,—the President in the chair.

The Secretary being absent, C. M. Hovey was appointed Secretary *pro tem*.

The committee to nominate officers for the ensuing year, submitted their amended list, which was laid on the table, and the meeting proceeded to the choice of officers for 1852. W. R. Austin and E. M. Richards were appointed a committee to sort and count the votes. The polls remained open thirty minutes. The committee reported the whole number of ballots to be 34, and the following officers were elected:—The term of office commencing on the first Saturday of January, 1852, and terminating on the first Saturday of January, 1853.

President—Joseph S. Cabot.

Vice Presidents—Benj. V. French, Cheever Newhall, Edward M. Richards, Josiah Stickney.

Treasurer—William R. Austin.

Corresponding Secretary—Eben. Wight.

Recording Secretary—W. C. Strong.

Professor of Botany and Vegetable Physiology—John Lewis Russell.

Professor of Entomology—T. W. Harris.

Professor of Horticultural Chemistry—E. N. Horsford.

STANDING COMMITTEES.

On Fruits—Eben. Wight, Chairman; Josiah Lovett, Joseph Breck, C. M. Hovey, W. R. Austin, F. Lyman Winship, J. S. Sleeper.

On Flowers—D. Haggerston, Chairman; Alex. McLellan, E. A. Story, P. Barnes, L. Davenport, J. Nugent.

On Vegetables—Henry Bradlee, Chairman; A. D. Williams, J. Mann, Jr., A. C. Bowditch.

On Library—C. M. Hovey, H. W. Dutton, R. M. Copeland, Daniel T. Curtis, W. S. King.

On Synonymes of Fruit—M. P. Wilder, Chairman; P. B. Hovey, Jr., R. Manning, E. M. Richards, E. Wight.

Executive Committee—J. S. Cabot, Chairman; W. R. Austin, M. P. Wilder, S. Walker, O. Johnson.

For establishing Premiums—E. Wight, Chairman; D. Haggerston, H. Bradlee, Josiah Lovett, P. B. Hovey, Jr.

On Finance—M. P. Wilder, Chairman; J. Stickney, O. Johnson.

Of Publication—Eben. Wight, Chairman; Josiah Lovett, Joseph Breck, W. C. Strong, E. Wight, D. Haggerston, H. Bradlee.

On Gardens—J. S. Cabot, Chairman; J. Breck, A. D. Weld, J. Lovett, W. R. Austin.

A few pamphlets were presented to the Society, by L. A. H. Latour, M. P., of Montreal, Canada, and the thanks of the Society were voted for the same.

A collection of catalogues was received from A. Vattermare, Paris.

A vote of thanks was presented to H. B. Stanwood, for the loan of a beautiful Lepergne, at the annual exhibition.

The following gentlemen were elected honorary members:—Hon. A. N. Morin and Rev. N. Villeneuve, Montreal; and corresponding member, L. A. H. Latour, M. P.

Adjourned four weeks to November 1st.

Exhibited.—FLOWERS: From Hovey & Co., 4 varieties of Seedling verbenas, one of them their New White, the finest yet raised; also, a superb velvety purple variety. Cut flowers were exhibited by J. Mann, Jr., P. Barnes, and W. Kenrick.

FRUIT: From E. Bemis, pears—Louise Bonne of Jersey, superior; Beurré Diel, Glout Morceau, both very fine; Duchess of Angouleme and Bartlett. From J. Washburn, quinces; seedling apples. From E. Cleaves, grapes—Black Hamburgh and White Frontignan, fine; pears—Beurré Bosc, Flemish Beauty, fine; Beurré Diel, fine; Marie Louise, superior. From S. Downer, Jr., pears—Louise Bonne of Jersey, St. Ghislain, Washington, very fine; Bartlett, and Flemish Beauty. From J. Lovett, 2d, quinces; plums—Coe's Golden Drop, very fine. From J. V. Collins, by J. Hyde & Son, pears—Collins. From C. Ricker, apples—Hubbardston Nonsuch; pears—Louise Bonne of Jersey, Duchesse of Angouleme, and Beurré Diel.

From G. Merriam, peaches—Warren's Seedling. From Hovey & Co., pears—New Frederick of Wurtemberg, Beurré Beaumont, and Doyenné Boussock. From W. C. Strong, grapes—Black Muscat, (?) superior; Muscat of Alexandria, superior; Grizzly Frontignan, very fine; Black St. Peters, very fine; Syrian, very fine; Chasselas Musqué, Rose Chasselas, White Chasselas, all fine; Black Hamburgh. From S. Downer, Jr., pears—Bartlett, Louise Bonne of Jersey, very fine. From A. W. Stetson, nectarines; pears—Louise Bonne of Jersey; grapes—Seedling No. 1 and 2, Catawba; melons—green fleshed. From Mrs. Crehore, grapes—Diana. From J. S. Ballard, quinces, superior. From J. A. Bates, by I. Bradley, pears—Seckel, very fine; Gansel's Bergamot, and Passe Colmar. From J. Mann, Jr., plums—Coe's Golden Drop, very fine; grapes—Isabella. From P. Barnes, apples—Fameuse, Minister, Rox. Russet, and one unnamed. From S. W. Dudley, plums—Thomas. (?)

From J. F. Allen, grapes—Black Hamburgh, Wilmot's New Black Hamburgh, Golden Chasselas, superior; Bishop, White Frontignan, De Can-

dolle, and Josling's St. Albans; pears—Beurré Diel, very fine; Belle Lucrative, superior; Seckel, superior; and Flemish Beauty. From H. Vandine, pears—Flemish Beauty, Marie Louise, superior; Buffum, Bartlett, Seckel, and St. Ghislain; plums—Huling's Superb, Autumn Gage, Coe's Golden Drop, Shurtleff's Lilac Seedling, Yellow Egg, Red Gage, Lombardy; grapes—Black Tokay, Catawba, Miller's Burgundy, Isabella, Black Missouri. From J. Hill, peaches—Crawford's Late, superior; pears—seedling. From J. Longley, pears—St. Michael, small, but very fair. From J. S. Sleeper, pears—Buffum. From F. Tudor, Nahant, pears—Beurré Diel, Duchesse of Angouleme, Louise Bonne of Jersey, Columbia, Glout Morceau, all fine; Napoleon, from tree 70 years old, transplanted 1845; Beurré d'Angleterre, and seedling. From A. D. Webber, apples, unnamed; melons—Beechwood.

Fruits tested.—From J. Lovett, 2d, pears—Beurré de Rhine, new, a green pear, of pyramidal shape, large, melting and juicy, good; Beurré Sprin, a yellow and red pear, pyramidal, large and excellent. From J. Hyde & Son, pears—Collins, very fine, juicy and brisk. From J. S. Sleeper, pears—Buffum, excellent. From Hovey & Co., Jersey Gratioli, large, obovate in form, with a yellow skin, dotted with russet, of a fine vinous flavor; Frederick of Wurtemberg, new, large, obtuse pyramidal, yellow, with deep vermilion cheek, sprightly, and excellent; Beurré Beaumont, very fine; Bonne de Zees, large, oblong, yellow skin, melting, sweet, and fine. From A. W. Stetson, grapes—seedlings, of two varieties, resembling the Isabella.

VEGETABLES: From J. Crosby, fine celery and cauliflowers. From J. Lovett, 2d, fine cauliflowers.

October 11. *Exhibited.*—FRUITS: From J. Mann, grapes—Isabella; quinces, superior. From C. E. Grant, grapes—Isabella, very fine; Catawba, very fine; pears—Duchesse of Angouleme, and Seckel, both very highly colored and very handsome. From T. Dowse, pears—Urbaniste, fine; and Andrews. From C. Kimball, pears—Louise Bonne of Jersey. From Rev. J. Means, by A. Lawrence, apples—Cathead; pears—Seckel. From W. C. Strong, pears—Louise Bonne of Jersey, very fine; Duchesse of Angouleme, and Flemish Beauty; grapes—Syrian, very fine; Muscat of Alexandria, superior; Rose Chasselas, very fine; Josling's St. Albans, or Chasselas Musque, Grizzly Frontignan, do.; Black Hamburgh, very fine; White Chasselas, Black Muscat, (?) very fine; Black Prince, very fine. From C. F. Chaplain, pears—Seckel, very highly colored.

From J. Dane, pears—Van Mons Leon le Clerc, superior; Sieulle, very fine; and Louise Bonne of Jersey, superior. From W. Maynard, quinces—Orange, very fine. From J. S. Sleeper, pears—Ananas, and Louise Bonne of Jersey, very highly colored; apples—Hubbardston Nonsuch. From S. Driver, pears—Marie Louise, very fine; Seckel, handsome; Dix, superior; and Beurré Bosc, very fine. From C. Brigham, quinces, extra large. From P. H. Kimball, pears—Chelmsford (?). From E. Brown, pears—Angleterre, McLaughlin, Frederick of Wurtemberg, Pitt's Prolific, Surpasse Virgalieu, Bleeker's Meadow, Beurré d'Aremberg, Winter Nelis, Iron Pear,

Platt's Bergamot, Oswego Beurré, Fulton, fine; Seckel, fine; Pound Pear, and Flemish Beauty, very handsome. From J. Wheeler, President of Champlain Valley Horticultural Society, an exhibition of 28 varieties of pears, 53 of apples, and 3 of quinces.

From Hovey & Co., pears—Passe Colmar, Van Mons Leon le Clerc, Sieulle, Beurré St. Quentin, Swan's Orange, very fine; St. Michael Archangel, Plombgastel, Adele St. Denis, Las Canas, Compte de Lamy, very fine; Louise Bonne of Jersey, very fine; St. Michael's, very fine; Beurré Beaumont, new; Swan's Egg, very handsome, and highly colored; Fig. of Naples, Belle Epine Dumas. From J. P. Wyman, peaches—Late Crawford, very fine. From J. A. Kenrick, Orange quinces. From H. Vandine, plums—Semiana, very fine; and Coe's Golden Drop; pears—Napoleon, Lawrence, Stevens's Genesee, Heathcot, Paradise of Automne, Beurré Diel, Louise Bonne of Jersey, Marie Louise, Seckel; grapes—Miller's Burgundy; apples—Porter. From J. Lovett, 2d, pears—McLaughlin, superior; Cranston's Seedling, Beurré Sprin, Heathcot, very fine. From J. F. Allen, pears—Seckel, superior; nectarines—Golden. From N. Dana, pears—Duchesse of Angouleme, very fine; Seckel, and Belle et Bonne. From G. Walsh, grapes—Red Chasselas, open culture; Isabella, and Sweet Water. From J. Haines, grapes—Isabella, and Catawba, from a graft of 2½ years old, inserted in a native stock. From J. Fowler, pears—Louise Bonne of Jersey, Colmar d'Aremberg; apples—Beef Steak.

Fruits tested.—From the President, plums—Reine Claude de Bavay; pears—Beurré Triquer, Benoist, melting, juicy, and fine; Bonne de Zees, Delices d'Hardenpont, Urbaniste, Capiaumont, Paradise of Automne, Figue, Duchesse of Orleans, Oliver's Russet, Dana, Sullivan. From Hovey & Co., pears—Poire d'Albret, Adele St. Denis, St. Michael Archangel, Knight's Monarch, Bergamot Verte d'Automne, Beurré Beaumont, Swan's Orange, Van Mons Leon le Clerc. From W. C. Strong, grapes—Black Muscat, (?) large and handsome. From J. Battey, Keeseville, apples—Walworth, a new apple, large, handsome, yellow, deeply tinged with blush, tender, pleasant, and of fine quality; and the Northern Sweet, a very handsome sweet apple, of fine quality.

VEGETABLES.—From J. Crosby, celery and cauliflowers, fine. From J. Lovett, 2d, broccoli, very fine; cauliflowers, fine. From J. A. Kenrick, six heads cauliflowers, very fine.

October 18. Exhibited.—**FRUITS:** From Hovey & Co., Diana and Isabella grapes, fine. From J. Stickney, Napoleon, Urbaniste, and Louise Bonne of Jersey pears, all very fine. From W. Everett, Pound, (weighing 22 ounces) and Catillac pears, and Baldwin apples. From J. Whitney, Shirley, Porter apples, fine. From M. P. Wilder, Urbaniste and Duchesse of Angouleme pears, very fine. From S. Leeds, fine Duchesse of Angouleme pears. From J. F. Allen, Wilmot's Black Hamburgh, (fine large berries,) Syrian, Muscat of Alexandria, and Black Hamburgh grapes; and Long Green of Autumn, Seckel, Beurré Bosc, and Beurré Diel pears, very fine. From Capt. Lovett, Isabella grapes, fine; and Seckel pears, fine. From W. C. Strong, 14 var. of grapes, same kinds as last week; all fine.

From S. Downer, Jr., Urbaniste, Duchesse of Angouleme, Beurré Diel, Colmar d'Arenberg, Marie Louise, Fulton, and Van Mons Leon le Clerc pears, all very fine. From J. Mann, Jr., fine Glout Morcean and Beurré Diel pears. From Miss A. C. Sanborn, Sherburne, fine Lemon. From D. S. Smalley, Glout Morceau and Beurré Diel pears, fine. From C. E. Grant, fine Isabella grapes. From J. Cass, fine Isabella grapes. From T. Dowse, fine Seckel pears. From J. H. Morrison, Milton, fine Winter Nelis pears. From H. Vandine, Marie Louise and Beurré Diel, fine, and Seckel pears; Orange quinces, fine; Semiana plums, and one kind unnamed. From J. Burnett, fine Lyscom, Baldwin, Hubbardston Nonsuch, and one kind of apples without name; all fine. From F. & M. Burr, Iron pear, from a tree planted in 1650. From Dr. J. V. C. Smith, yellow fleshed watermelons, raised from seeds sent to the Society, by Dr. Smith, from Lower Egypt. The seeds were sown since July. From J. P. Wyman, Late Crawford peaches. From J. Arnold, Milton, Black Hamburg and Zinfindal grapes, extra fine. From A. W. Stetson, Isabella grapes, fine. From E. Cleaves, Black Hamburg grapes, fine. From B. D. Emerson, Black Hamburg grapes.

Fruits tested.—From J. W. Bailey, Plattsburg, N. Y., Bailey Spice, handsome, and of fine quality. From S. Downer, Jr., Colmar d'Arenberg, good; Van Mons Leon le Clerc, fine. From M. P. Wilder, Urbaniste, fine. From Hovey & Co., Swan's Orange, fine; Serrurier, promises well. Merriam pear, presented by the President, good; also, the Delices d'Hardenpont, good; Doyenné Dore, (?) good; Charlotte de Brower, new. From A. McLellan, seedling pear, small, but sweet and good. From A. W. Stetson, Isabella, and a seedling, very much resembling the Isabella, but said to be two weeks earlier. From Hovey & Co., Isabella grapes, sweet and fine; and the Diana, which continues to sustain its high reputation. From C. E. Grant, Isabella grapes, sweet and fine.

VEGETABLES.—From M. Davis, very fine Seedling potatoes, raised from seed planted from the Nova Scotia vars., since 1846. This variety the committee would be gratified to have a more particular statement than was given, in regard to the yield since that time. From J. Crosby, celery and cauliflowers, very fine. From J. Mann, Jr., two varieties of turnips, carrots, and celery, fine. From A. R. Pope, Old Colony Sweet corn, 18 and 20 rows to the ear. From the farm of B. B. Tottingham, Shoreham, Vt., by Capt. L. Hunt, Dog's Foot potatoes, very curious.

October 25. Exhibited.—**FRUITS:** From H. Vandine, apples—Porter; pears—Marie Louise, very fine; Beurré Diel, Lawrence. From K. Bailey, grapes—Isabella, very fine. From J. Cass, grapes—Isabella, very fine. From A. W. Stetson, grapes—Isabella, very fine; peaches—gathered September 30th, preserved on the method of Mr. Curtis. From J. Richardson, grapes—Isabella, fine. From C. E. Grant, grapes—Isabella and Catawba, both very fine. From E. C. Hitchings, grapes—Diana, fine. From S. Downer, Jr., quinces—extra large and fine; pears—Fulton, very fine; Duchesse of Angouleme, superior; Van Mons Leon le Clerc, extra fine;

Beurré Diel, superior; Long Green of Autumn, Louise Bonne of Jersey, Napoleon, superior; two for a name. From W. C. Strong, grapes—Black Prince, Black St. Peters, White Frontignan, Grizzly Frontignan, Rose Chasselas, Muscat of Alexandria, Black Muscat, (?) Black Hamburg, Josling's St. Albans, White Gascoigne, Syrian; all the specimens were very fine, berries and bunches of good size, finely colored and well grown.

From H. Humphries, by Pettes & McMullen, pears—Duchesse of Angouleme, fine. From J. F. Allen, pears—Duchesse of Angouleme, superior; Cross, Seckel, very fine, and Moccas; grapes—Syrian, West's St. Peter's. (?) From J. Mann, pears—Seckel, Glout Morceau, very fine; Chelmsford; (?) quinces, fine. From J. Stickney, pears—Dix, superior; Colmar d'Aremberg, do. From J. H. Sweet, apples. From S. Stevens, quinces, very fine. From J. Merritt, grapes—Black Hamburg, raised in open air. From M. P. Wilder, pears—Beurré Diel, Beurré d'Anjou, Soldat Laboureur d'Esperin, Nouveau Poiteau, Bezi des Veterans. From G. W. Wilson, pears—three varieties for a name.

Fruits tested.—From the President, pears—Beurré Spence, probably Beurré d'Hardenpont, McLaughlin, (?) Doyenné Doré, same as Bezi de Montigny, Eyewood, good. From S. Downer, Jr., pears—Long Green of Autumn and Napoleon, both fine. From M. P. Wilder, pears—Nouveau Poiteau, large, promises well; Soldat Laboureur, good. From Hovey & Co., pears—Rondelet, a medium sized pear, of obtuse form, yellow color, sweet, and fine; Dumortier, small, of a russety green color, rich, sugary, and fine; Vesouviere, a greenish yellow pear, melting, sugary, and good. From W. C. Strong, grapes—Black Damascus, fine, very large berries, of fine dark color, and very pleasant flavor. From J. F. Allen, grapes—Whortly Hall Seedling, have been hanging in the house since last December, yet the berries were perfectly sound; and Red Tokay, and Black Frontignan, gathered from the same house, hanging for the same length of time, that had become perfect raisins.

PREMIUMS AWARDED FOR FRUIT.

GRAPES.—For the best Isabella, to C. E. Grant, \$5.

For the second best, to Hovey & Co., \$3.

For the best Diana, to Hovey & Co., \$5.

For the second best, to E. C. Hutchings, \$3.

To J. Lovett and K. Bailey, a gratuity of the bronze medal, for fine specimens of Isabella.

NECTARINES.—For the best specimens, to S. H. Perkins, for the Lewis, \$6.

For the second best, to J. F. Allen, for the Lewis, \$4.

FIGS.—For the best, to J. F. Allen, \$5.

For the second best, to Hovey & Co., \$3.

PLUMS.—For the best, to J. Lovett, for the Green Gage, \$6.

For the second best, to H. Vandine, for the Peach, \$3.

To O. Johnson, J. F. Allen, and J. Mann, Jr., a gratuity of the bronze medal, for fine specimens.

MELONS.—For the best, to J. Lovett, for the Christiana, \$5.

For the second best, to Hovey & Co., for the Beechwood, \$3.

NOTE.—In our award of premiums, at the annual exhibition, we inadvertently omitted the name of Capt. Lovett, who was awarded a gratuity of \$8, for a fine collection of pears.

HORTICULTURAL OPERATIONS

FOR NOVEMBER.

FRUIT DEPARTMENT.

THE month of October has been unusually fine. Fine rains, without much wind, have been frequent, and vegetation now wears the aspect which it ordinarily does in the latter part of September. With the exception of the Dahlias, and a few other tender things, the frosts have as yet been so light as to do no great injury.

If advantage has been taken of the fine weather, much of the work to be done in the autumn will have been completed; but the more open and fine the weather, the more there is to do, and as long as severe frosts hold off, everything which can be completed this autumn should be attended to. Continue, therefore, to trench and prepare ground for spring. Protect Raspberry plantations and Strawberries with a light covering of leaves, straw, or coarse manure; and finish up the transplanting of all kinds of fruit trees. November is the best time to apply guano, or other manure, to fruit trees.

GRAPE VINES in cold houses will now have their fruit fully ripe. Keep the houses as dry and airy as possible. As soon as the fruit is cut, open the house day and night, in order to ripen off and harden the wood. Vines in greenhouses may be pruned this month. Vines intended for early forcing should be pruned immediately. Dig and manure all the grape borders, and protect with a good coat of manure such as it is intended to start before February.

STRAWBERRY BEDS should not be allowed to get the least weedy; a little attention now will save a deal of labor next year. Cover the vines on the approach of severe cold.

RASPBERRIES, GOOSEBERRIES, and CURRANTS, can be transplanted safely all the month.

PEACH TREES in pots, for forcing next year, should stand exposed to the weather as long as possible.

FRUIT TREES of all kinds should be transplanted this month; it is by far the best period of the year.

FLOWER DEPARTMENT.

From the continued open and fine weather the garden, in rather sheltered situations, is as gay as June. But in most places around Boston, the frosts

have already despoiled all tender plants of their beauty. Roses, &c., continue to bloom freely, after the welcome rains of September.

It is unnecessary to repeat the hints which we gave last month. Keep the greenhouses as cool as possible, as nothing is more injurious than a high temperature so early in the season. Water sparingly, and kindle no fires only on very frosty nights. Attend to the repotting of all plants that require it. Take up and protect all choice plants which have been turned out of the pots. Get up all summer flowering bulbs, before the ground is frosty.

CAMELLIAS will now require to be kept well watered, occasionally using weak liquid manure. Thin out the buds, not leaving more than two on each shoot, and syringe every mild night, to invigorate and clean the plants.

CHRYSANTHEMUMS in pots should now be liberally watered, giving liquid manure, or guano, once a week. Tie the plants up neatly, to one or more stakes, and, whether placed in the conservatory or in the parlor window, turn round the plants once a week, to prevent their growing one sided. If very large flowers are desired, thin out the small and weak buds.

IXIAS, SPARAXIS, GLADIOLI, and other Cape bulbs, should now be potted. Unless the pots are already crowded with bulbs, it will be as well merely to shake out some of the dry soil, and top dress with fresh compost. They often flourish better in this way than when divided. They should, however, not be grown more than two years without separation.

NAPOLITAN VIOLETS may yet be potted, if not already done.

JAPAN LILIES for early flowering in pots in the conservatory, may now be repotted, as we have directed in an article in a former volume. By doing so at this early season, the plants are much stronger, and flower better than when left till February. All the lily tribe make strong fleshy roots, which often get injured when the bulbs are placed away under the stage, and get too dry; but if potted now, these roots at once begin to grow, and thus are better prepared to start with vigor when removed to the greenhouse in March. They may be kept in a cold frame, or cool cellar, as they are perfectly hardy.

PANSIES now taken up out of the border, and potted, flower finely all the spring.

VERBENAS propagated last month should now be potted off singly, or several plants may be put round the outside of a four inch pot. Keep them on a dry shelf, near the light.

SCHIZANTHUSES and other annuals, for winter blooming, will need another shift into larger pots.

MONTHLY PINKS and CARNATIONS in pots, raised from early layers, may now be shifted into larger pots. Keep the flowering stems tied up as they advance.

ROSES of the Tea and Chinese kinds, taken up last month, may now be pruned in, and taken into the greenhouse, where they will flower finely in February and March.

AZALEAS should now be sparingly watered.

ERICAS will need attention. Repot if they require it, and keep the plants well pinched in if dwarf bushy specimens are wanted. Water ju-

diciously, and syringe occasionally, overhead. Top dress any that may be benefited by it.

DAHLIAS, in the immediate vicinity of Boston, have never done more poorly than this year. The dry summer and early frosts have quite used them up. Dig and store the roots carefully, and hope for better things next season.

CINERARIAS growing vigorously will need another shift into their blooming pots.

STEPHANOTUS FLORIBUNDA. Large plants of this fine climber, should now be placed on a light, cool shelf, to ripen its wood.

TORENIA ASIATICA, kept in a warm temperature, will flower freely till late in the season.

PLANTS FOR FORCING should now be taken up and potted. Where there is plenty of room, the Deutzia, Persian Lilac, Azaleas, Kalmias, &c., make a fine show during all the spring.

Attend carefully to watering, which at this season should be carefully done, not spilling any more than is absolutely necessary. Keep a rather low night temperature, and give abundance of air in the day; by so doing the plants will be hardened off, and stand the winter much better.

FLOWER GARDEN AND SHRUBBERY.

The month of November closes the operations of this department for the season. Proceed rapidly to clean off all the decaying tops of plants, and give the shrubs a little manure; it is better now than in the spring. Fill up any vacant spaces, whether of shrubs or trees, and let everything have the air of neatness and order.

Look to the flower garden. See that the carnations, picotees, daisies, polyanthuses, and similar half-hardy plants, are protected, either in frames or where they stand. Set out tulips, hyacinths, narcissus, crocuses, &c., and prepare the ground for ranunculuses, which should be set out in February next.

LILIES. Give a covering of three or four inches of leaves, strawy manure, or litter of any-kind, to the Japan sorts.

HERBACEOUS PLANTS of all kinds should be slightly protected, on the approach of severe frost.

ROSES of the hybrid perpetual, and Bengal kinds, flower much better next year, if they have a little protection. Pegging down the plants to the ground, alone, is even a very good plan, as the snow then serves the purpose of straw or leaves.

The new and rare evergreen trees and shrubs should have a little protection, especially if they have just been set out. A good covering at the root will answer very well; but if a few pine boughs are put up round the plants to keep off the hot sun they will do much better; when they get once well rooted they will not require it. Rhododendrons and kalmias, planted this year, may have the same care, and the brightness of their foliage in the spring will repay all the labor.

THE MAGAZINE
OF
HORTICULTURE.

DECEMBER, 1851.

ORIGINAL COMMUNICATIONS.

ART. I. *The Mineral Theory of Manures.* By the EDITOR.

To any one familiar with the agricultural press in England, it is unnecessary to say that quite a reaction has taken place in regard to the views of Baron Liebig and his mineral theory of manures. While some of our agricultural and horticultural periodicals have been filling their columns with analyses of the ashes of various plants and fruits, and propounding "recipes" for the successful cultivation of both, founded on their analysis, the better informed and less credulous readers of our British contemporaries have set to work systematically to test the truth of the theories in question. It is emphatically a case of "Theory *versus* Practice," and has resulted, as many intelligent cultivators believed it would, viz., that the verdict has been rendered in favor of the defendant.

We need not say to our readers, that we have been no advocate of the mineral theory; they will have known this from our remarks from time to time, when incidentally the subject has been alluded to in our pages; and it is with no little degree of satisfaction that we now find our views corroborated by such eminent practical men as Mr. Pusey and Mr. Lawes. In taking this ground, however, we have studiously avoided the opposite extreme; for while we will go as far as any one in admitting the importance of modern chemistry to agricultural science, we will not acknowledge that to be chemistry which is only the wild speculations of some of its professors. This remark is perhaps unnecessary, but when opinions, briefly expressed,

are caught up, twisted, and misrepresented, as may please the views of some writers, we deem it of more consequence to reiterate the assertion that we do not undervalue chemistry and its importance to agricultural improvement, but the deductions which are drawn from it, and the crude theories which are based upon it, which have no practical value.

The ash theory has been a particular hobby with some of our horticultural writers, and if we were to judge by what we read, it is little less than gross absurdity to call that an art, which can be at once effected by a recipe from some musty Encyclopedia. Fifty years hence, should the progress of gardening ever arrive at that point in this country as to require such a work, all the information necessary for cultivating fruits to perfection, according to the ash theorists, would be half a dozen recipes founded on the analysis of the ashes of each sort. Thus, suppose we wish to grow the finest pears; we turn to that fruit, and find the following:—

“To every cart-load of peat and ashes, (in the proportion of twenty-five bushels of the former to ten of the latter) add half a bushel of ground or dissolved bones, and two bushels of leached ashes, (or five pounds of potash dissolved in water.)” This compound contains “the mineral manures so absolutely essential to the production of fine fruit.”

Now it is against such crude, speculative, and visionary theories, that we deem it necessary to warn all cultivators, assured that they will as utterly fail when put to the test of practice, as have the patent manures of Liebig.

The subject is one of great interest and importance; and in the haste of our people to farm and garden well, they eagerly seize upon those methods which are said to accomplish the best results, founded upon chemical theory, and in the cheapest manner, without waiting to ascertain how far such methods are justified by well known practical facts. Their failure, which eventually takes place, only adds one more illustration of the fallacy of book-farming or gardening, and straightway the whole fraternity of book-farmers are denounced, because they failed in achieving valuable results

from a false theory, promulgated by teachers of "doubtful chemistry."

The cultivators of England have been slow to believe all that has been advanced by Baron Liebig, as laid down in his works on agricultural chemistry. And among those, standing high in the agricultural community, and justly acknowledged to be thoroughly acquainted with the subject, who have taken this stand, is Mr. Pusey, who has recently assailed the mineral theory of Liebig, and so successfully that he has called forth quite a sharp reply from the great chemist. We cannot better occupy a page or two, than in quoting some remarks in relation to this controversy, by Dr. Lindley, which we find in the *Gardeners' Chronicle*:—

A smart skirmish has lately taken place between Mr. Pusey, on the one hand, as the champion of practical cultivators, and Baron Liebig on the other, as the representative of theoretical men of science. As is usually the case, both parties place themselves a little in the wrong; but as is not always the case, the dispute is instructive and useful to the spectators. Setting aside the mere question of profit and loss, we must say a few words on the subject, treating it as a broad question of vegetable physiology, and the nourishment of plants, for the purpose of placing before our readers what we believe to be the true state of the case.

It appears, then, that the English country gentlemen complain that they have been misled and deceived by the crude chemical speculations of the celebrated German chemist; that they have been taught visionary theories in the place of sound facts, and that, trusting to the weight of a great name, and a high scientific reputation, they have been led astray, even further from the real truth than they previously were, when he first undertook to instruct and enlighten them. It is stated that "the mineral theory of Liebig has broken down, and no other has taken its place;" and following out this observation, Mr. Pusey goes on to say "it is a great mistake to suppose that men can be made farmers by teaching them doubtful chemistry;" and, in conclusion, he remarks,

“I should not have said so much, but that the public are sometimes led, by a false estimate of chemistry, to undervalue our real progress in other sciences.” At the same time, however, whilst thus condemning the views of Liebig, and very properly objecting to the teaching of false science, Mr. Pusey does not wish to condemn chemistry altogether, but is desirous of drawing a marked distinction between crude speculations or scientific errors, and sound practical facts and well established knowledge.

When Liebig's “*Chemistry of Agriculture*” was published, a dozen years since, it naturally excited a great deal of interest; the reputation of the author commanded attention and respect, and the decided and plausible manner in which his book was written, soon gained for it plenty of believers and admirers. The agricultural world was divided into two classes, those who obstinately refused to listen at all to such new-fangled doctrines, and, on the other hand, those who, blindly adopting as true all the views put forth, even without attempting to weigh the evidence by which they were supported, received every theory of the great German chemist as an established fact, and believed in the most extravagant results as likely to spring from the application of chemistry to farming. There were some few, too, who neither ridiculed the idea of applying science to practice, nor yet blindly adopted whatever was asserted, but, suspending their judgment for a while, set seriously to work to investigate for themselves; but certainly the loudest voices raised were those of the country gentlemen and rich landlords, who, without much knowledge of science, and certainly without attempting to ascertain the truth of the views put before them, eagerly seized on Liebig's theories as the true key to farming, and lauded his book as the dawn of a new reformation. If the landlords have been misled, it is hardly fair to blame the unfortunate chemist alone, for the fact is, that having let their wishes and hopes far outrun the facts, or their own convictions, they have necessarily fallen into a wrong path, and now, having found out their error, they seek to put all the blame on the man who tried to help them, for-

getting altogether how much was caused by their own want of consideration and caution.

It has all along been a matter of regret, that the new chemical theory of agriculture was so very warmly taken up, and so highly praised by some of its supporters; and we must take some credit to ourselves for having from the first objected to such blind hero-worship. At the same time practical men are so slow to receive what is new, and so little inclined to receive favorably a more theoretical probability, that had not Liebig's views been put forth with the utmost decision, and in the most positive manner, they would probably never have excited one-tenth part as much attention as they really did; and, therefore, even though his conclusions were ultimately found to be wholly incorrect, he would nevertheless have done good service, by the impetus which they could not fail to give to farming, and by the effects which must necessarily result from the desire for knowledge which they would produce in practical men.

The fault, then, of Liebig in the first instance was, that when he ought to have said, "I think it is probable," he said, "it is an undoubted fact;" and the error of the landlords was, that forgetting for once their usual caution and fear of being misled, they blindly adopted all he taught them, and, not even satisfied with that, imagined a great deal more. That Liebig, though in error, was perfectly honest and sincere, is proved by the fact, that he even went so far as to connect himself with a trading speculation, endeavoring to make money by a patent manure, and thus risked his scientific reputation on the pecuniary success of a doubtful, though plausible scheme. As the mere fact of his taking out a patent for the manufacture of artificial manure, naturally lowered him in the estimation of many, seeming to convert the high and independent lover of science into the petty money-seeking trader, so the subsequent failure of the patent manure still further tended to bring his views and opinions into discredit.

Mr. Pusey remarks, that very little practical service has yet been rendered to agriculture by chemistry, and the manner in which he mentions the failure of Liebig's mineral theory,

produced a somewhat angry and hasty reply, published in the second edition of "*Liebig's Letters on Chemistry*," (p. 479.) He begins by stating, that Mr. Pusey's remarks are quite incorrect, which, however, is not to be wondered at, because he is not a chemist "by profession," a fact which he endeavors to *prove*, by observing that on two occasions Mr. Pusey has made chemical mistakes in his writings. No one imagines that Mr. Pusey is a chemist, but if a writer is to be condemned because he has made two mistakes, we fear Baron Liebig must surrender his own chemical reputation; for it would be easy to show that he too has occasionally made mistakes, perhaps even more serious than those of Mr. Pusey.

In answer to the complaint of the landlord, the chemist replies—"We have in the last ten years given you the most complete explanations of the nutrition of plants, and the sources of their food; we have shown you that plants must obtain from the soil, as well as from the atmosphere, certain elements; we have explained the nature of the soil, the effects of liming, rotation of crops, and fallowing; we have given agriculture a scientific basis, which it did not before possess. Besides all this, chemistry has taught the farmer the importance of phosphoric acid, about which nothing was known ten years ago (!); the true source of nitrogen, the value of ammonia, and the modes of fixing it; these and many other practical facts have been discovered during the last ten years.

All this sounds very well; and if only one half of it were true, it would certainly make out a strong case for the chemists; but we fear the picture is much too highly colored, and that the facts themselves do not warrant such a boast. The scientific basis of agriculture is still but a very crude and imperfect theory; and so far from the nutrition of plants being now thoroughly explained, there is hardly any one part of the subject which is not still, to a great extent, enveloped in doubt and uncertainty. The assertion that the value of phosphoric acid has only been discovered by chemists during the last ten years, is also one we cannot for a moment admit; indeed, Liebig himself, in his "*Chemistry of Agriculture*,"

refers to Saussure, to show that the importance of phosphoric acid to plants had long been known; and quotes from his work, published nearly fifty years ago, the remark, "we have no right to suppose that plants could exist without phosphate of lime." Or to cite a more recent authority, we may refer to Sprengel, who says, in 1832, "there is not a single known plant which contains no phosphorus;" and again, speaking of the application of bone as manure, he observes, "that the phosphate of lime of bones constitutes their chief value as manure, is proved by the well known fact that burnt bones, which contain no organic matter, act very powerfully on vegetation." He also points out the value of mineral phosphates of lime, such as fossil bones, apatite, &c., and states that all marls which contain phosphate of lime are excellent manures. It would in fact, be easy to show, that so far from it being true, that ten years ago "nothing was known in agriculture of phosphorus, or phosphate of lime," or that "no one knew what it was in the bones which really acted," it has been long known and fully recognized that phosphate of lime or phosphoric acid is essential to the healthy growth of plants; this, therefore, cannot be claimed as a new discovery.

The benefits which it is stated agriculture has derived from the progress of chemical science, during the last ten years, are so vague and of so general a nature that it is hardly worth while to discuss them point by point very minutely. As regards the food of plants, very little more has been done than to confirm the experiments of older observers; and as for the explanations respecting rotation and fallowing, we are quite at a loss to discover which part is new—it seems that pretty nearly all this part of the scientific system of agriculture was already known and acknowledged; all that portion which is really new is also, at the same time, theoretical and unconfirmed; and we must confess that Mr. Pusey's remark is not in any way really met or disproved by the reply of Baron Liebig. At the same time, having the greatest possible respect for the labors of chemists, we must say that we still look forward to them for much real assistance in all de-

partments of the arts of cultivation, and that even if no very important practical application of chemical science have been made during the last ten years, that is no reason to despair of the most valuable results hereafter. Such experiments as those of Mr. Way, on the absorptive power of soils, cannot fail in time to lead to improvements in practice, though they may take years to carry out and apply. Mr. Pusey observes very truly, that larger experiments, not conducted merely in the laboratory of a chemist, but carried out in a large scale in the farm itself, and devised and executed by a scientific man, are by far the most valuable contributions which can be made to our knowledge of the phenomena of vegetation; and he quotes the excellent experiments of Mr. Lawes in illustration. As may be supposed, these experiments do not meet with the approbation of Liebig, and in his reply to Mr. Pusey, he characterizes them as being "entirely devoid of value as the foundation for general conclusions." In the last part of the *Journal of the Royal Agricultural Society*, Mr. Lawes has published the details of his experiments, and every one is, therefore, able to judge for himself of their accuracy, and the conclusions which he draws from them. We shall reserve a few observations on those experiments for another week.

Unfortunately, we do not see the *Journal of the Royal Agricultural Society*, and consequently we must rely mainly upon the above article, as a synopsis of the contents of Mr. Pusey's paper. Neither have we seen the article communicated to the same journal by Mr. Lawes and Dr. Gilbert, but we refer to their excellent paper in our last number, (p. 514,) as a brief statement of their views in relation to the mineral theory. It is enough, we think, to offer such good evidence as that of Dr. Lindley, that the attempt of Baron Liebig to refute what Mr. Pusey has stated, and Mr. Lawes confirmed by actual experiment, has been another failure.

In a subsequent paper, Dr. Lindley alludes to the controversy again, and gives the following summary of the facts, as set forth by Mr. Lawes, in opposition to the theory of Liebig:—

We must again invite the attention of our readers to Mr. Lawes' long and laborious series of experiments, on the Chemistry of Vegetation, which, as we recently observed, are characterized by Liebig as being of no practical value for the foundation of general conclusions; a remark probably made in a moment of haste and ill humor, perhaps even without being thoroughly aware of the true nature and aim of the experiments there condemned. In order to explain the matter fully, it will be necessary to advert once more to the so called mineral theory of Liebig, which is in fact the foundation of the whole discussion, and to which its author appears inclined to adhere with a good deal of tenacity, in spite of all that may be urged against it.

It is perhaps hardly to be wondered at, that the small quantity of inorganic matter which plants contain was formerly considered as being accidental, or at least of no real value, and not in any way essential to their growth and prosperity; at all events, such was certainly the case, and even after the minute and laborious investigations of Saussure, it appears that very little attention was paid to the subject, for Davy evidently thought them of little or no importance, when he wrote his celebrated lectures on agricultural chemistry. Isolated writers have now and then drawn attention to the existence of these substances in plants, and have indeed pointed out the necessity of their being present in those plants which serve as the food of animals. Thus, for example, it has been long known and admitted that cattle derive a large portion of phosphate and carbonate of lime, the earthy matter of their bones, from the grass and other plants on which they feed. Liebig was the first to insist on the paramount importance of these inorganic substances to plants, which he asserted were absolutely essential to their growth; and, indeed, he went so far as to say that vegetation was healthy and luxuriant just in proportion to the supply of these substances. In accordance with this view, he put forth his theory of exhaustion and fallowing, asserting that the sole reason why a plant could not be cultivated year after year on the same soil, was, that the supply of soluble inorganic matter, necessary for the plant,

soon became exhausted, and that this loss must be remedied either by leaving the soil for a year or two to recover itself under the agency of atmospheric influence, or by the addition of suitable mineral manures. It is often stated that Liebig discovered the real office performed in the nutrition of plants by these inorganic matters, and hence threw a good deal of light on the subject; but this is not really the case, for of the true use of the inorganic constituents of plants very little indeed is even now understood. We know that they are essential to vegetation, but we do not know why, or in what manner they act; this still remains to be discovered.

The two great facts which Liebig brought forward in a prominent manner, were, the necessity of these substances being present in a fertile soil, and the fact that different tribes of plants require the presence of different inorganic matters; some requiring phosphate of lime, some needing alkali, and some requiring silica. These facts are certainly of the very first importance; but it is obviously impossible to arrive at any very satisfactory conclusion as to the mode in which these substances influence vegetation, until we fully understand the office which they perform, and the effects which they produce. It is quite plain that these inorganic matters cannot in any way serve as food, or at least cannot directly contribute to the supply of carbon, nitrogen, &c.; but at the same time there is no doubt some very simple relation between the absorption of these earthy and saline compounds, and the absorption or assimilation of carbonic acid, ammonia, and water. The practical problem to be solved was, is it most important to supply inorganic matter, or ammonia, to plants? or, in other words, must we give plants ammonia, and will that enable them to absorb enough inorganic matter from an exhausted soil, or must we give them inorganic manures; and will they then be able to absorb from the air and soil all the ammonia which they require?

The answer which Liebig gave to this important question was, that inorganic manures were of far more value than those which merely contained ammonia; an assertion based solely on hypothetical conclusions, and therefore, especially

when we bear in mind how little is really known of the action of these substances, one which ought to be viewed with the greatest caution and circumspection. A great many persons were at once satisfied that Liebig's view of the subject must be correct, but there were some who wished to have proofs before they admitted it, and Mr. Lawes was one of those; he accordingly instituted, in conjunction with Dr. Gilbert, a very careful series of experiments, and the result of these experiments is now published, in the *Journal of the Royal Agricultural Society*. These investigations of Mr. Lawes, as far as they go, are very satisfactory; and whilst we should be the last to admit them for more than they are worth, we feel that the manner in which they have been arranged and conducted is such as to render them wholly trustworthy. They plainly lead to certain conclusions, which we may safely adopt, without fear of being misled.

At an early period in his experiments, Mr. Lawes was led to the conclusion that very little real information can be derived from the analysis of a soil, because our chemical tests are not delicate enough to detect the less abundant constituents, or to render evident those changes in its composition which the growth of one or two crops could possibly produce. The soil of an acre of ground, supposing it to be six inches in depth, would weigh about 1,344,000 lbs., and consequently the subtraction of a hundred weight of any one ingredient would only amount to about one 13,000th part of the whole, a quantity far too minute to be satisfactorily determined by analysis. Mr. Lawes, in his experiments, therefore, proceeded on a plan in which this difficulty was obviated; he took a field, the soil of which was thoroughly exhausted by heavy cropping, so that without manure it would only produce a poor crop, showing, therefore, that something was deficient; and, dividing it into several portions, he manured each separately, giving to some ammoniacal manure, to some inorganic ones, and to others a mixture of the two. These experiments were continued on the same fields, and with the same manures, for seven years; so that the value of each class of manure was fairly tested with different plants; and the whole

of these results are now before us. The paper is well worthy of careful study, and though we shall mention briefly some of the conclusions to be drawn from them, yet we would recommend every one to read the original account of the experiments, and to judge for himself of their value.

Mr. Lawes found that the ashes of farm-yard manure did not increase the yield of wheat on exhausted land at all, whilst a small dressing of sulphate of ammonia increased it five bushels per acre; and when a mixture of inorganic matter and ammoniacal salts was contrasted with the effects of either taken singly, it was evident that the restoring influence of the latter was far higher than that of the former alone. The practical conclusion, therefore, to which Mr. Lawes arrives is, that in this country the soil becomes exhausted of its ammoniacal salts much sooner than of its soluble inorganic components; and, therefore, that ammoniacal manures are more important than mineral or inorganic ones in the cultivation of wheat. In considering these results, one important fact must be borne in mind; the land on which these experiments were made is by no means a poor soil, for, even though exhausted at the commencement, it bore successively for seven years, without any manure, an average crop of seventeen and a half bushels per acre; it is plain, then, that it would not be expedient to deduce from such experiments any general conclusion for all soils. Mr. Lawes denies that inorganic manure is all-important for wheat in all situations, but he does not deny that there may be poor soils and peculiar circumstances in which the supply of ammonia is greater than that of inorganic matter, and which, therefore, the nitrogen being in excess, relatively to the mineral constituents of wheat, would be less easily exhausted. Under such circumstances, a mineral manure would be more useful than an ammoniacal one. We must be careful, in rejecting the assertion of Liebig, that we do not fall into the opposite extreme. After having found that mineral manures are not the best in all cases, we must not conclude that ammoniacal ones are always best; neither would be true, as a generalization.

It will be here seen that Mr. Lawes makes the same admission as Dr. Dana, in his *Muck Manual*, which we reviewed in our last, viz., "that very little real information can be derived from the analysis of a soil," and for a very good reason, that our chemical tests are not delicate enough to detect the less abundant constituents. The great fact that the loss of one hundred pounds of any one substance on an acre, would be only one 13,000th part of the whole, is sufficient to show that the mineral constituents are not so readily exhausted as cultivators have been led to believe.

But, without reference to the statement of Mr. Lawes, Dr. Dana has shown, in his *Manual*, (section 74,) that a *barren pine plain contains potash enough on a single acre to supply a crop of wheat for three thousand years!* and that the lime contained in an acre of the same pine plain is ample for a crop of rye of twenty bushels per acre, for *seven thousand four hundred years!* And more than this, Dr. Dana pronounces it as a FOURTH leading principle of agricultural chemistry, THAT SOILS CONTAIN ENOUGH OF ALL THE MINERAL ELEMENTS TO GROW ANY CROP.

Talk about "the how and the why of the operation of lime and alkali," says Dr. Dana, this is the fact: yet we are told that the reason why the White Doyenné pear does not succeed, even in soils containing far more potash than a pine plain, is because it is exhausted of its mineral contents! Do not the sages who give such advice, teach a somewhat "doubtful chemistry?" We have not room to follow the subject farther at this time, but shall do so hereafter. We have now discussed the so-called mineral theory, more with a reference to its horticultural than its agricultural bearing, desirous that none of our readers should be led astray by the visionary notions of those who would have our fruit growers substitute ashes and peat in the place of good substantial manure, assured that they will regret the day when they listened to such advice.

ART. II. *Descriptions and Engravings of four Pears.*
By B. DESPORTES, Angers, France.

WE are happy to present our readers with another communication from our French correspondent, B. Desportes, of Angers, describing four varieties of pears, three of which, we believe, have not yet fruited in the country. From his account of them, they appear to be exceeding valuable acquisitions, and as we have trees of them already in our collection, we hope soon to see them in fruit. One of the following kinds was among the specimens of fruit sent to the Massachusetts Horticultural Society, by M. Leroy, and it was fully equal to the character given to it by M. Desportes; this was the *Delices d'Hardenpont de Belgique*, which will be found noticed with others in our Pomological Gossip.—ED.

I. BEAU PRESENT D'ARTOIS.

We have cultivated, under the name of Beau Present d'Artois, this variety (*fig. 54,*) for several years, but it came into bearing for the first time the present year. We regret, very much, not to have known this fine sort sooner, because we would have propagated it in large quantities, both on account of its beauty and excellent qualities. We have but very few other kinds which merit a more extensive cultivation.

The tree that produced these fruits, of which the outlines are annexed, is only four years old, and planted in our specimen school of fruit trees at Andre Leroy's nurseries. It is about six feet high, and vigorous; the branches are upright and well pyramidal shaped; it has proved this year to be very productive,—it bore *twenty-five* fruits like the outlines, some of which weighing near a pound, and the others half and three-quarters of a pound each. The pear, of which the largest outline is a copy, weighed one pound, and the smallest ten ounces; the first was one of the largest, and the other one of medium size.

The largest fruit was four and a half inches long and three and a half in diameter about the middle, of pyri-

form shape, surface uneven; *Stem*, large, short, about one-third or one-quarter of an inch long, largest at the two extremities; *Eye*, broad, shallow, segments of the calyx short

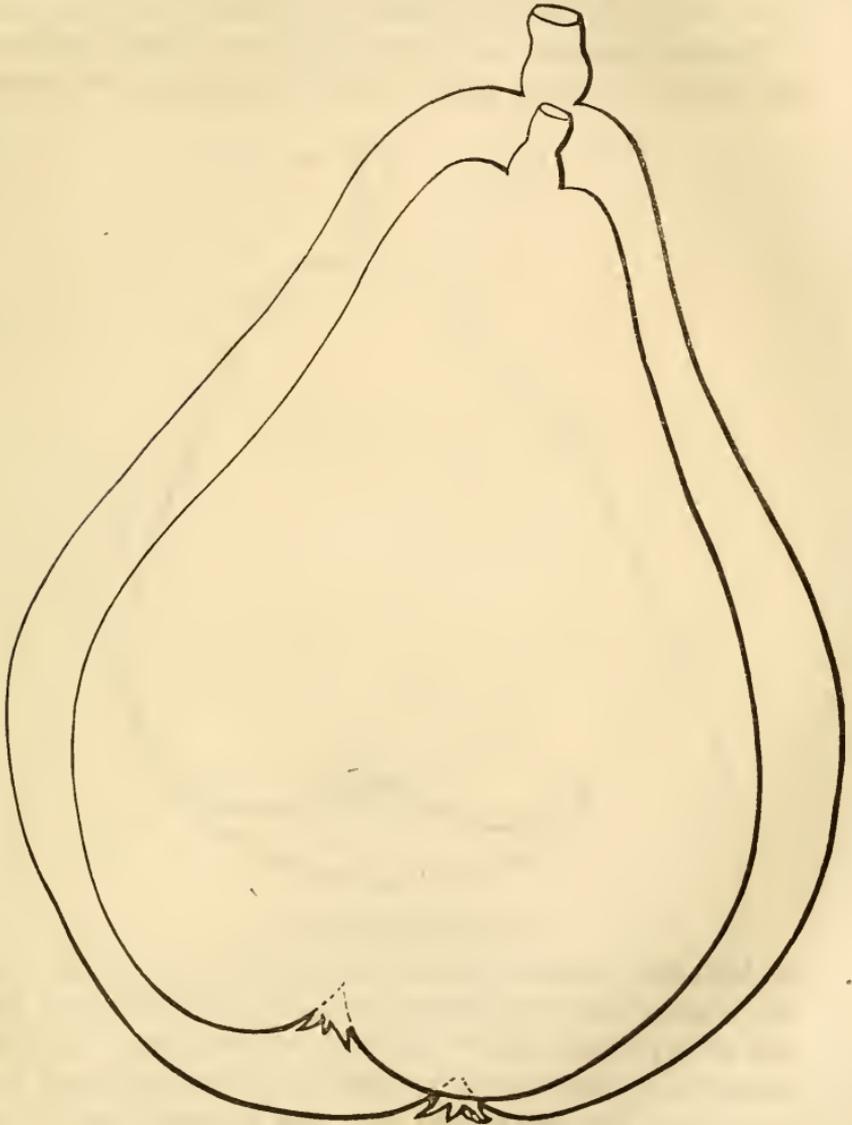


Fig. 54. Beau Present d'Artois.

and rigid; *Skin*, gray and green, spotted about everywhere; *Flesh*, half fine, white, somewhat mixed with green lines, tender, juicy, sugary. It is a first rate pear, ripening in September, and well deserving extensive cultivation.

2. DELICES DE MONS.

A Belgian pear, introduced into André Leroy's nurseries, some years ago, came into bearing this year for the first time.

Fruit, of medium size, pyriform, uneven surface, narrowing towards the stalk, where it ends in rounding; *Stalk*, half

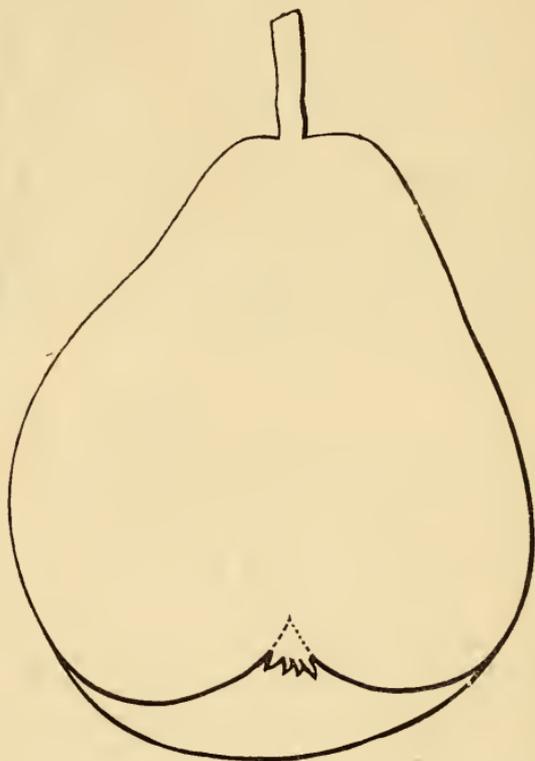


Fig. 55. Delices de Mons.

an inch long, inserted in a shallow cavity; *Eye*, small, set at the surface and in a shallow cavity, on one side more than the other; *Skin*, yellow, greenish on the shaded side, and russet on the sunny side, covered everywhere with gray dots, of different size, and spotted with gray in some parts; *Flesh*, yellowish, very fine, buttery, melting, very juicy, and very agreeably perfumed, delicious. Ripens end of September.

This kind is one of the best pears, and not surpassed in quality by any other.

3. DELICES D'HARDENPONT DU NORD AND BELGIUM.

Fondante Pariselle du comice horticule.

Beurré Curtet, of André Leroy's nurseries, at Angers.

This very handsome pear is known under the three above names.

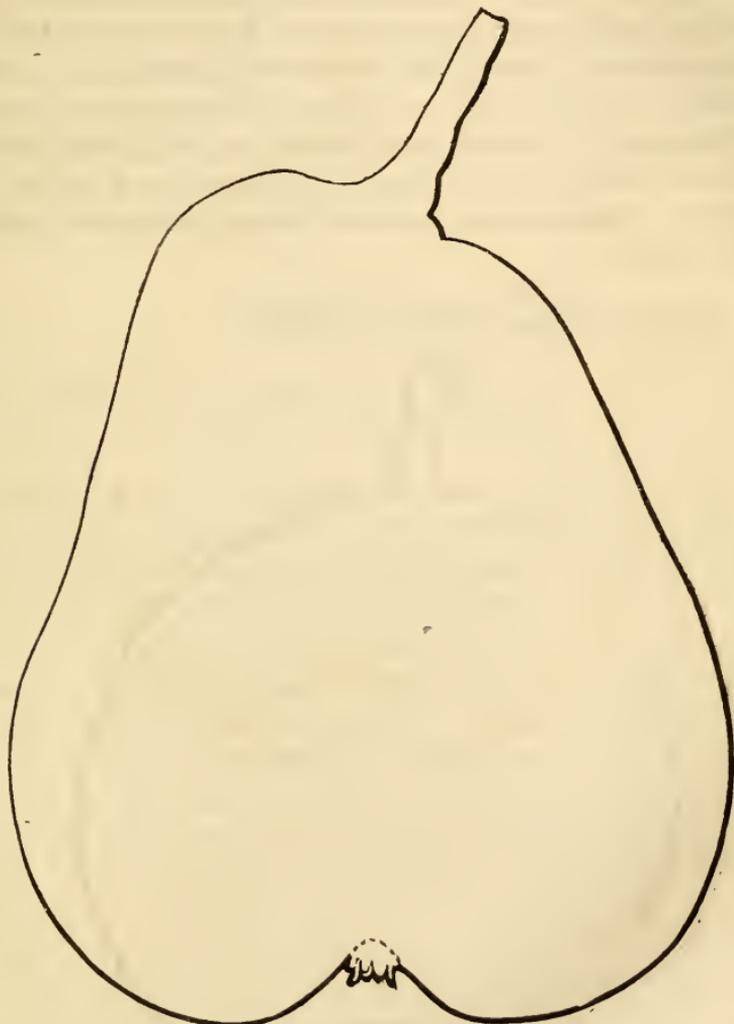


Fig. 56. Delices d'Hardenpont du Nord and Belgium.

The above fruit is one of the largest; generally it is smaller, and the lines about the middle height are not so curved; the fruit is more regularly pyriform, and narrower

near the stem; this stem is short, obliquely inserted at the surface; *Eye*, small, and equally set at the surface; *Skin*, coarse, yellow and gray spotted; *Flesh*, not fine grained, very melting, water abundant, sugary, perfumed, very pleasant and very excellent. Ripens from the beginning to the middle of October.

This kind is the true *Delices d'Hardenpont* of Belgium and the North of France; but we have at Angers another *Delices d'Hardenpont*, of which the outlines and description are very different. We call this last *Delices d'Hardenpont* of Angers, to distinguish it from the first, which we call *Delices d'Hardenpont* of Belgium or North, it having originated in this last country. Vigorous tree, pyramidal shaped, stout wood, rather short jointed.

4. DELICES D'HARDENPONT OF ANGERS.

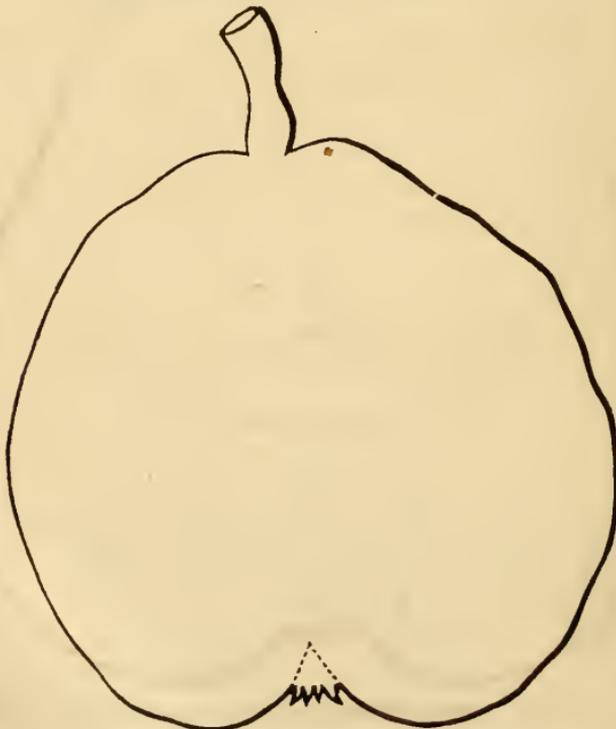


Fig. 57. Delices d'Hardenpont of Angers.

Fruit, of medium size, about two and a half inches high, and two and a half inches diameter; *Form*, about roundish,

at surface uneven, irregular; *Stalk*, short, half inch long, and sometimes less, stout, straight or curved, larger at the upper end, inserted in a small round cavity, and almost at the surface; *Eye*, small, almost closed, set in a small cavity, or at the surface; *Skin*, gray bronze, rather shaded with yellow, rough; *Flesh*, greenish white, fine, melting, buttery, very juicy, vinous, agreeably perfumed.

It is a first rate kind, very productive, and a constant bearer, which well deserves the most extensive cultivation. It ripens in October.

The tree is of medium vigor, well pyramidal shaped; the branches are slender, short jointed.

Leroy's Nurseries, Angers, France, Sept., 1851.

ART. III. *On the Culture of Strawberries.* By GUSTAVUS EVERTS, Watertown, Mass.

DURING the short time since I have resided in this country, I have seen various methods of cultivating the strawberry, but in very few instances to my satisfaction; as I have always found the beds over-crowded with plants.

If cultivators adopt the following plan, they will never have an unfruitful plant in their beds. It is generally acknowledged, that strawberries like a deep, rich, moist soil, in order to make luxuriant plants, but these, however, will not always produce the best fruit. Many persons have the idea that strawberries grow naturally among bushes in the shade; but I have always found those fruits the highest flavored when fully exposed to the sun, and grown in a soil not too rich. My method of treatment is as follows:—Select a spot of middling dry ground, lying, if convenient, to the southeast; trench it in the autumn eighteen inches deep. If such a soil is not at hand, but is of a heavier nature, inclining to clay, I would recommend a compost of leaf mould, stable manure, and charcoal dust, in equal parts, (as charcoal dust and leaf mould will keep the soil loose and porous.) If, on the contrary, the

soil is sandy loam, use only manure and leaf mould, in equal parts. Spread the compost over the surface, and let it be well spaded in. Where strawberries are cultivated to a great extent, I think spring planting is preferable to the autumn, as there will be less necessity of shading or watering the plants in dry weather.

Select a moist day in the early part of May, for setting out the plants. Make the beds six feet wide, and two feet apart. Mark out four rows in each, fifteen inches distant from each other, and they will be ready for planting. Select the strongest runners of the previous year, and take them up with great care, so as to preserve as many of the roots as possible; set them fifteen inches asunder in the rows, and avoid the error of deep planting, which is often attended with the loss of the plants, by covering up the crowns and causing premature decay. Keep the beds clean and free from weeds, until the fruit is set, when the whole surface should be covered with clean straw, or short grass; this will keep the fruit clean, as well as keep up an equal degree of humidity in the soil.

After the fruit is gathered and the plants begin to make runners, the covering of straw or grass is removed, and the runners are all cut off, with the exception of as many as are wanted to place one between each parent plant, because we cannot always depend upon the old ones to produce a good crop. On the approach of cold weather, which is usually the last of November, we cover the beds with sea or rockweed, which we have found to afford the best protection from frost.

The next season the original plants will be in their full bearing, and the runners of the previous year will have sufficient strength to become substitutes for the old ones. The third year the old plants should be removed altogether, the soil freshly manured, and the same routine of laying in one runner between each, followed as above directed.

This is the practice we have adopted in the cultivation of strawberries here, and a great crop has been the result.

Cushing's Gardens, Watertown, Mass., Nov., 1851.

ART. IV. *Pomological Gossip.*

NEW PEARS, FROM ANGERS, FRANCE.—The facilities of steam navigation are beginning to be felt in the diffusion of pomological information. Heretofore we could only import with safety, fruit trees of various kinds, and patiently await their fruiting before we could decide whether we had obtained the correct kinds; and even then, we were not certain as to the results; for the great similarity of many kinds renders a mere description of the fruit of only comparative value. With the rapidity of steam communication, however, we are now enabled to interchange specimens with foreign cultivators, and thus settle all doubts regarding the identity of varieties; and not only this, but we can learn the value of the newer sorts immediately, by the inspection and trial of the fruit, without waiting for the tree to bear.

The first instance of this kind, on anything of an extensive scale, has been the receipt by the Massachusetts Horticultural Society, of upwards of 175 varieties of fruits, sent by A. Leroy, nurseryman of Angers, France. They embraced 116 of pears, 36 of apples, and 19 of other small fruit, including nuts. The package containing them was sent to Liverpool, to be forwarded to Boston, to the care of Messrs. Hovey & Co.; but from some cause, it laid over a week or more, in the former place, and then went to New York, from whence it was forwarded to Boston. But, notwithstanding this delay, many of the pears and apples came to hand in perfect order, and enabled the committee to examine the kinds, and test the quality, of such of the new ones as were in fine condition.

We have not time now to enumerate all these kinds, but we give a brief account of a few of the best of those that are new, or have not yet fruited in our collections. The specimens were, some of them, very fine, but no better than those of the same kinds which have been exhibited by our own amateurs and nurserymen. The Uvedale's St. Germain weighed 24 ounces. To us, the result of the expedition

proves that we can, as Mr. Lowell has said, raise as fine pears "in this state" as the "world produces."

Doyenné du Comice.—*Size*, large; *Skin*, yellow; *Stem*, short; *Eye*, medium size; *Flesh*, yellowish, melting, and very juicy, with a rich, sugary, perfumed and delicious flavor. October and November.

Delices d'Hardenpont de Belgique—quite distinct from the *Delices d'Hardenpont* of our collections. *Size*, very large; *Form*, irregular oblong; *Skin*, yellow; *Stem*, medium length, stout; *Eye*, small, open; *Flesh*, yellowish, half melting, juicy, high flavored, sugary, rich and excellent. November.

Pater Noster—quite unlike the *Pater Noster* of the Salem gardens. *Size*, large; *Form*, oblong; *Skin*, yellowish; *Stem*, medium length; *Eye*, medium size; *Flesh*, yellowish, melting, juicy, rich, sugary, highly aromatized and luscious. November.

Belle Julii.—*Size*, medium; *Form*, ovate oblong; *Skin*, yellow and russet; *Stem*, short; *Eye*, medium size; *Flesh*, greenish white, melting and juicy, with vinous and rich and sprightly juice; perfumed and excellent. November.

Beurré Millet.—*Size*, medium; *Form*, ovate; *Skin*, dull yellow; *Stem*, very short; *Eye*, small; *Flesh*, yellowish white, melting and juicy; *Flavor*, rich, vinous, and deliciously perfumed. November.

Serrurier.—*Size*, medium; *Form*, roundish oval; *Skin*, yellow, russeted; *Stem*, short; *Eye*, medium size; *Flesh*, yellowish, melting and juicy, with a rich saccharine and pleasant perfume. November.

Biemont.—*Size*, medium; *Form*, broad oval; *Skin*, yellow, thickly dotted with russet; *Stem*, short; *Eye*, large, open; *Flesh*, yellowish white, melting and juicy, with a rich, sugary and highly perfumed flavor. Ripe in November.

Beurré Beaumont—quite distinct from the *Beurré Beaumont* of our collections, as described in our Magazine. *Size*, large; *Form*, obtuse pyramidal; *Skin*, cinnamon russet; *Stem*, short; *Eye*, medium size; *Flesh*, yellowish, melting, juicy, sweet, pleasantly perfumed, and good. October and November.

Fondante du Comice.—Similar to the Doyenné du Comice in general appearance and quality.

Beurré Rance.—Though prematurely ripened, was one of the finest pears we have tasted, and almost, or quite, equal to the Winter Nelis. The specimen weighed nearly a pound, and was exceedingly fine. It scarcely seems possible that our Beurré Rance can be the same; though it is hardly possible that it should be otherwise, as it has been received from the London Horticultural Society and other sources, both in England, France, and Belgium. Mr. Thompson has described it as the “best very late pear;” and we may add, so far as this specimen would allow us to judge, that he has not overrated its excellence.

We trust that, another year, the Society may receive specimens from the same source again, making such arrangements previously, as to cause no delay in their transmission to their destination. If put up carefully, we are very certain that not one in ten of the specimens would be in the least injured.

M. Leroy not only deserves the thanks of the Society, which were unanimously voted to him, for the transmission of these specimens, but is entitled to something more than this ordinary mark of courtesy; and we hope one of the Society's Medals will be awarded to him, for the interest which he has manifested in the dissemination of a better knowledge of these fine fruits, by an exhibition of the fruits themselves.

THE FREDERICA BREMER PEAR.—Through the kindness of Mr. J. C. Hastings, of Clinton, New York, we received a small basket full of this new pear, which was described in our last volume, by our correspondent, Dr. Brincklé, of Philadelphia. They came safe to hand, but were quite too ripe when gathered, or at least when forwarded, for every one of them had begun to decay at the core, and imparted the disagreeable taste to the exterior part, so common with pears which exhibit such a characteristic. Mr. Hastings, in his note accompanying them, says, “they are rather too ripe;” and regrets it was not convenient to have sent them somewhat earlier. The specimens were very large (8 to 10 ounces

each,) and very handsome ; and we should not judge of the variety by these specimens, waiting another year for an opportunity to get them in good order. We are fearful, however, that it has a tendency to decay prematurely at the core, which will lessen the value of this, otherwise fine, new pear.

ART. V. *Notes on Climbing Plants for the Greenhouse.*

By HORTUS.

CLIMBING plants are most useful adjuncts in decorating greenhouses ; and, where grape vines are not introduced under the rafters, they add much to the beauty of the house, hanging in graceful festoons from the roof, and are rather beneficial than otherwise, in breaking the direct rays of the sun from the plants on the stage, if kept in due bounds, and not allowed to form a dense mass of foliage under the whole surface of the glass. In span-roofed houses, a series of semi-circular arches, running along the top of the house, covered with flowering climbers, have a fine effect ; and single, long-roofed houses are much improved in appearance by similar arches, springing from upright pillars, placed about the middle of the rafter, stretching to the back wall, adding strength to the structure, and breaking the uniform sameness in houses of this description. These climbers may be planted inside the house, in borders prepared for their reception ; or some of the hardier kinds planted outside, and introduced through openings in the wall.

Should it happen, however, from the internal arrangement and construction of the house, that these methods cannot be adopted, the plants will flourish as well in pots or tubs, proportionate to their size and habit of growth. Indeed, many persons prefer this mode, rather than planting them out permanently, especially with delicate rooting plants, as they can be better attended to, and are more under control, than when allowed unlimited space. Moreover, when they are planted

out permanently, and have filled their allotted space, the house becomes, as it were, stereotyped in appearance, and uninteresting to the frequent visitor, which is not the case when placed in movable pots, as these can be changed, when requisite, and admit of fresh and more ornamental additions and arrangement. Where large pots are objectionable on the stage, they can be placed out of sight under a shelf, or other convenient situation, and the plant trained to the desired location.

In general, they should not be too rigorously tied or trained, as these ramblers of the jungle dislike formality, and show to best advantage when allowed to assume a natural irregularity of growth. On the other hand, it is necessary to guard against confusion, and prevent them from getting into entangled and inseparable masses. In most cases, the leading shoots only require securing and training, allowing the lateral branches to assume their natural position. Whatever position they are intended to occupy, they should be trained to it at once, as it is difficult to alter them afterwards, without injuring the foliage. The less robust growers should be trained to trellises attached to the pots. These may be of any shape to suit fancy. Cylinder and globular forms answer better than flat or shield shapes. The pyramidal outline is more pleasing than either, and admits of better arrangement with other plants on the stage. The following are very brief remarks upon a few good plants, that will suit the temperature of a greenhouse :—

PLANTS ADAPTED FOR TRAINING ON PILLARS, BACK-WALLS, &c.

Mandevilla sauvolens.—This is a fine-foliaged, free-growing plant, bearing beautiful white sweet-scented flowers, and is not grown so generally as it deserves. Potted in good loamy soil, with plenty of pot room, it grows fast, and flowers abundantly. During winter, it will require very little water : propagates easily by cuttings.

Ipomæas.—There are a great many varieties of these, all pretty. *I. Learii* and *I. Horsfallæ* have splendid flowers. The latter is frequently treated as a stove plant, but succeeds

well in the greenhouse. They require a light, rich soil; pots well drained, so that water will pass quickly through the soil. This is necessary, as the roots are very susceptible of damp during winter. Easily raised from seeds, or extended by cuttings.

Stephanòtus floribúnda.—This is a beautiful evergreen, with fine dark green foliage, forming a fine contrast with the clusters of white flowers, of exquisite fragrance. Unfortunately it is a little tender, but has been grown to great perfection in greenhouses, by watering carefully and sparingly in cold weather. In summer it luxuriates in moisture. The soil should be turfy loam, mixed with sand and charcoal, and the pots, of course, particularly well drained. It is propagated by cuttings.

Bignonias.—These are very rampant growers, and do not succeed well unless the roots are allowed plenty of room. *B. venústa* and *B. Lindleyi* are of more moderate growth. They should be planted in good loamy soil, and pruned back annually, when deciduous. Many of the species are hardy, and all easily raised from seeds or cuttings.

Passifloras.—These are common and much admired. *P. alàta* is of strong growth, and will speedily cover a large space, especially if it gets near to the top of the house, where it will receive more warmth. *P. racemòsa*, *P. cærùlea*, *P. Kermesina*, and *P. Loudónii*, are also good sorts. They answer well to plant in a prepared border, in a well-drained loamy soil.

Allamànda cathártica is a beautiful plant, of recent introduction. It should be planted in good open soil, properly drained. It is of vigorous growth, requiring plenty of moisture in summer; but, being a native of South America, requires careful treatment during winter. By keeping it near the warmest part of the house, and watering sparingly, it will succeed well.

Stigmaphyllum ciliàtum.—A slender growing and rather elegant climber, with yellow flowers, formed in clusters, and produced plentifully towards autumn. The roots are somewhat fleshy, and should be kept nearly dry during winter;

but likes plenty of moisture at roots, and syringing overhead, while growing.

Cobæa scandens, *Maurandia Barclayana*, (varieties, purple, white, and rose-colored,) and *Lophospermums*, *scandens*, *Hendersónii*, &c., are all pretty, and of the easiest culture. Raised from seeds sown in spring, they will attain a large size, and flower profusely all summer, in any light, rich soil.

Eccremocarpus scabra also forms a handsome object; it grows very quickly, and flowers all summer. It can be raised annually from seeds; or cuttings, rooted in the fall, will keep during winter.

PLANTS ADAPTED FOR POT TRELLISES.

Manettia bicolor.—This is a fine orange and scarlet flowering climber. Cuttings, rooted in early spring, grown in the greenhouse all summer, and placed in flowering pots about the end of July, will form good sized plants before winter. It must be kept at the warmest part of the house.

Sollyas are pretty blue-flowering plants, of easy culture; cuttings root readily. *S. heterophylla* and *angustifolia* are good species. Light, sandy soil suits them well.

Schubertia graveolens.—A very fine, new plant; flowers white, produced in clusters, deliciously fragrant, and stand a long time in bloom; requires to be kept rather warm, and free from cold draughts. Soil should be well supplied with porous materials, and watered sparingly when done flowering.

Kennedias.—These require a lightish soil, well drained. There are many varieties of color. Some of the more distinct are, *K. inophylla*, purple; *K. prostrata*, red; *K. Marryáttæ*, scarlet; and *K. nigricans*, yellow and purple. They luxuriate in a moist atmosphere. Seeds are plentifully produced, and can be increased by these, or cuttings.

Gompholobiums.—*G. polymorphum*, *vérsicolor*, and *venustum*, are desirable climbers. They should be kept from currents of cold air. Soil, sandy loam.

Hardenbergias.—*H. macrophylla*, and *H. monophylla*. These require a light, sandy soil. After they bloom, they can be placed out of doors, to harden and ripen the young

shoots. When taken into the house, the old soil should be shaken from the roots; both tops and roots should be pruned back, the plant potted in fresh soil, and placed in shaded situation.

Brachysema latifolia, *Buddlea Madagascariensis*, and *Physianthus abus*,—scarlet, yellow, and white. The former should be kept in the warmest part. *Buddlea*, rather coarse growing, but flowers well when the roots are confined in a small pot. The last must be kept short of water in cold weather.

Tropæolums.—This is an extensive and lovely genus, comprising flowers of different colors, and flowering principally in winter and spring. Those that form tuberous roots should be potted as soon as they commence growing, watering sparingly, until they gain strength of foliage. When the flowering season is over, they should be kept dry until the stems decay, then shaken altogether out of the soil, and placed in an airy, dry situation, until they again begin to push fresh shoots. *Lobbiànum* is a handsome species; cuttings of this, struck in spring, will make fine plants for flowering in October and following months. Particular care is requisite in having the soil for these of a fibry nature, and the pots thoroughly drained.

November, 1851.

The above excellent article, on climbing plants, is one of the most interesting we have published from our correspondent. Nothing adds so much to the appearance of a house, as a few climbing plants; and, especially in our sunny climate, where shade is actually essential part of the year, it is surprising that so few of these are generally grown. It is a mistaken idea that they will injure the plants, if they are kept duly pruned and tied up to the trellis. On this head the remarks of Hortus are to the point; and if they are carefully followed, whether the plants are in pots or in the border,—whether trained up the rafter, or to trellises,—they will be the most attractive objects of the conservatory.

REVIEWS.

ART. I. *An Address before the Norfolk Agricultural Society, at Dedham, September 24, 1851.* By G. R. RUSSELL. Pamphlet, 30 pp. Published by the Society.

AMONG the multitude of agricultural addresses annually delivered before various societies, it is refreshing to get hold of one out of the common course,—one abounding in original thought and lofty sentiment,—and such a one is that before us.

Usually we find it no difficult task to mark, here and there, passages well worthy the attention and study of every cultivator, in any address of this kind ; but, in the present instance, we find ourselves at a loss which portion to reject, or which to lay before our readers, so brimful is every page of valuable suggestion and sound advice ; while, running through all, is a vein of humor which must have riveted the attention of every hearer of the address. As, however, we have but a limited space to devote to a review, we must be brief in our extracts.

After alluding to the utilitarian character of the present age, Mr. R. remarks :—

It is not advisable to go back to the early ages, tracing the progress of agriculture from beyond the flood. It may be taken for granted that the antediluvians entertained a due consideration for dinner, and very well comprehended the small chances of procuring it without paying their addresses to the soil. Neither is it expedient to explore what is generally understood by antiquity. It may be a matter of curiosity what the people of that indefinite period did to the earth, but, as for any practical application of the information, we might as well consult a model of one of their war galleys for the purpose of improving a line of battle ship. Whether tillage was first practised in India or China, whether the Egyptians pulverized the Delta of the Nile with a wooden hoe, or the Romans scarified the Campagna with a crooked stick, are matters of no great moment, except to the antiquary. A thorough investigation into the agriculture of the ancients would give no hint for the management of our farms, adding neither to the corn-bin, hay-mow, or market cart. They wrote much, and, not content

with plain prose, gave some, now useless, advice in very excellent verse. Hesiod's poem of "Works and Days" sleeps on the shelf of the library, and the "Georgics" of Virgil serve only to worry school-boys with rather tough Latin. Homer says, that the master farmer was accustomed to meet his ploughmen, at either end of the furrow, with the "crowned goblet," to reward and stimulate them with hearty draughts. He does not describe the quality of the beverage, but it is to be supposed that it was such as would meet the approbation of a temperance society, or that the furrows were very long; the employers of those days doubtless being as anxious as at the present for a good day's work, and, however partial they may have been to "the serpentine line of beauty" in art, it can be presumed they did not fancy an irregular series of them in their ploughed fields.

We give the past ages credit for very good intentions, and, in some things, must acknowledge their superiority. The huge monuments, whose construction is an unsolved problem, puzzling the science and art of modern times even to raise from the ground the fragments which time or the barbarian has laid low, compel us to confess that they beat us in laying stone wall. But, in positive usefulness, we entertain a belief that we have made an advance in the management of the earth. If the Carthaginian general, who wrote twenty-eight books on husbandry, every word of which is now as little known as his military exploits, were present at the exhibition of to-day, his astonishment would be equal to that of his soldiers, should they rise up, to find themselves confronted by a battery of flying artillery. And could Cincinnatus walk through our agricultural warehouses, his wonder would be, not that he left his plough, but that he ever returned to it. In fact, we flatter ourselves that we know something more about farming than did the Egyptians, Greeks, and Romans; and doubt whether the most indefatigable research into their modes of cultivation would increase our knowledge, or induce an imitation of their implements and the manner in which they used them. We respect them for their veneration of the plough, and can excuse them for worshipping the ox that drew it, he being, unquestionably, superior to the average of their deities; but we think we could show them an article calculated to increase their bump of reverence, and stock that would essentially diminish the divine honors of all the cattle of antiquity, from Apis downward.

The following, in reference to the respectability of other professions as compared with that of the farmer, will be acknowledged, unhappily, as too true:—

Another cause, operating against the farm, is the supposed superior respectability and emolument of other pursuits, acting as a continual drain on our agricultural population. The young man, toiling in homespun, sighs for the joys of broadcloth and fine linen; and his visions of earthly bliss bring before him, not the green fields, with trees, and flowers, and the singing of birds, and the murmur of bees, and running brooks, and all the

beautiful sights and sounds of his daily life ; but his imagination dwells on paved streets, and brick walls, and muddy streams of gutters, amid the rattle and din where men herd and jostle one another. His beau ideal of life is to pass it in a dingy office, where the blessed sun never enters ; to “achieve greatness” in the foul air of a court-room ; to feel a consciousness of importance and patronage, where humble greetings, and the lowly reverence of obsequious money dealers tell who is noted on “Change.” He thinks of the opulent city, and numbers up those whose ability or wealth has built them up a name, and originated many a fable for country circulation, stirring up young ambition to shake off, not the dust of the farm only, but the shoes themselves ; to jump from caterpillar to butterfly, without any intervening chrysalis ; to enter into that state of beatitude which erects a standard of gentility on the disdained or forgotten occupations of early life.

* * * * *

The love of rural occupations has probably been lessened by the increased intercourse with more artificial employments. It is sometimes, perhaps ungallantly, intimated, that railroads and omnibusses have diminished that undivided attention to the dairy which was the pride and glory of our grandmothers ; that the ease and rapidity with which country is exchanged for town, cause sudden and frequent transitions from the churn and cheese press to the variety store and confectioner’s shop. Calumny has even gone so far as to insinuate, that the operations of the old homestead are considered unmentionable things ; and that the farmer’s daughter is not presumed to know more about the making of butter, than her exquisite brother, from the counter, does of a potato row ; the one fearing it may not be “genteel” to acknowledge acquaintance with a milk pail, and the other thinking, poor fellow ! that there is more respectability in a yard stick than in a hoe handle.

The shortness of our New England summers are thus al-
luded to, as another obstacle to higher excellence in our
agriculture :—

There are obstacles to excellence in Massachusetts agriculture, independent of any moral agency of the farmer, and against which he can only oppose discretion and continual watchfulness. Our climate barely allows sufficient space between seed time and harvest. Our northern winter lays his cold hand upon the earth, and it is locked in such deep sleep that the vernal sun can scarcely waken it. We bound from snow to scorching heat, having summer upon us while we are yet expecting spring. Work, in all its variety, is crowded into a period so limited, that one thing presses on another with discouraging rapidity. Our rough soil, though requiring to be coaxed by all the appliances our resources can muster, before it can be prevailed upon to start a potato or push up a blade of corn, yet manifests an amazing alacrity in producing weeds ; as though that were its legitimate occupation, and it took pride in doing it well. At last, when, by perpetual

entreaty and unremitted warfare, the right things grow, and the useless are relieved from immediate duty, there "comes a frost, a killing frost," like a straggler from the rear guard of a retreating army, taking a last shot. Then arrive caterpillar, canker and cut-worm, bugs "too numerous to mention,"—every genus and species that can crawl or fly, amateurs of various tastes, but uniform appetite,—hastening to appropriate whatever portion of the banquet may best suit each particular palate, as though the sole object of planting was to set a table for their special accommodation. As regards these numerous families of visitors, which appear yearly to increase, the only alternative left may be suggested by quoting the brief but comprehensive and very intelligible address of a colonel to his regiment, when leading it into action:—"There's the enemy. If you don't kill them, they'll kill you."

Mr. Russell thus hits off those cultivators who prefer to jog along in the old beaten path, rather than experiment for themselves, and endeavor to discover new and superior modes of practice:—

A blind reverence for the past is the great stumbling-block of the present, and flagrant injustice to the future. Do as our fathers did! It is well we should, when we can do no better; but man has been made a progressive creature, is endowed with aspirations after excellence, has implanted in him a restless energy that is continually urging him onward. He could not stop if he would. He partakes of that law of motion which governs all things, from the smallest particle of animated dust, up to the infinite worlds, which, cluster on cluster, system within system, whirl in endless revolution round the throne of God.

The fanatic who threw a stone at the Earl of Rosse's telescope, because it pried into mysteries intended, as he believed, to be concealed from human curiosity, was a type of that conservatism which would have no new farming. It would not encourage the undutiful longings of children, who strive to know more than their parents. It would level the school-house, entertaining Jack Cade's opinion of men, "that usually talk of a noun and a verb, and such abominable words." Of what use is education, but to engender self-conceit and encourage wasteful expenditure? Why buy volume on volume, and cover blackboards with cabalistic characters, when "our forefathers had no other books but the score and the tally?"

Advancement is the destiny of man. He who stops in the race is run over and left behind, crippled and forgotten. Whatever may be the limit to human attainment, it has not yet been discovered. We press forward to an eminence from which we hope to behold all created things, but it is reached only to find heights to be climbed and difficulties to be surmounted.

Mr. Russell commences his address with great misgivings as to his ability to do justice to the subject; but we think

what we have already quoted is abundant evidence that he does. If it did not, we think the following paragraph would :—

It was a saying of Napoleon, that “ battles make soldiers.” It is equally true, that hard work makes farmers. He who would “ thrive by the plough” must leave his gloves with his Sunday coat. He must not expect to walk daintily over the earth, in holiday garb, and have her productions spring up in his footsteps. He who courts her favors must go manfully to the work. She is not to be trifled with, and does not yield to coy wooing. The badges of her successful suitors, are the dust of the ploughed ground, the sweat of the hay-field, the marks of honest industry wrought out in shirt sleeves. She loves the pressure of the cowhide boot, smiles on the tanned countenance and the sinewy limbs, on which the insignia of manhood have been ingrained by the elements. But she does not look less winningly, if the calculating head, which guides the laboring hand, has drawn information from recorded wisdom, gathered hints from the periodical, interchanged opinions with fellow workers, and brought thought to bear on the great mystery of nature. Excellence in agriculture is neither the result of closet study, nor of assiduous labor. It can be effected only by a union of both. May the sagacity of government consult the best interests of this people, by establishing the means of producing that as yet unknown prodigy, a perfect farmer.

Though our review is extended to a greater length than we intended, we cannot omit the following, which so vividly portrays the active spirit of the age in which we live :—

Our lot is cast in an age of extraordinary activity. We dwell amid perpetual change. The wonder of yesterday is forgotten in the novelty of to-day, which to-morrow will be cast aside among the things that have been. We move with such rapidity, that we can hardly get acquainted with our native land. The tourist rushes through it on a railroad, alternating between ditches and sand-banks ; now driving with headlong speed on the ridges of a precipice, and, anon, plunging into the recesses of the earth. Woods, fields, farms, villages, swarm in an indistinct medley before his bewildered vision. He looks on some smiling landscape, but before he can muster up a little sentiment, he is rattling over a bridge or rumbling through a tunnel. Now creation seems a flood of light, when the locomotive, that modern conjuror, yells out its unearthly incantation, and, *presto!* the scene changes, and he is whizzing amid the sepulchral damps of caverns, where sunshine can never come. The magnificence of nature, the wonders of art, the eternal works of God, and the passing marvels of man’s invention and industry, are fused in his memory in one conglomerate mass,—and he calls this, seeing the country.

The man who returns to his own land, after a few years’ absence, can.

scarcely find the places of his boyhood. The plough has passed over glade and woodland, and the wild haunts he loved to frequent are bustling with populous life. On the banks of the lovely stream, in whose peaceful seclusion he once found tranquillity, utility has erected her altars, and marshalled in grim array her abominations of brick and mortar. The placid water, which knew no sound save in murmuring over its pebbly bed, has been turned into flume and raceway, and is doomed to groan on, in never-ending torture; insult being added to injury, in estimating its value by a calculation of horse power. Where the wild flower blossomed, and the vine festooned the trees in beauty, the tavern sign creaks in the wind, the court house and jail have been planted, and the lawyer's office has sprouted up in their shadow. The freshness and grace of nature have departed, and have left behind the long crude street, stifled in dust and glaring with newness.

If there have ever been fairies in this country, their reign is over. They have forsaken a people who love the music of the spindle and loom, and think that the greensward can be used to more advantage than for dancing by moonlight. Verily, this is not their abiding-place; and the sentimental maiden, who watches in the dew for their coming, may find, instead of their tiny figures revelling in magic circle, the unromantic, mundane-looking doctor prescribing at her bedside.

The guardian genius who presides over the New England cradle is a very matter-of-fact, working-day spirit. Should he embody himself to mortal sight, there would appear no ethereal being, wreathed with flowers, hovering between earth and heaven, but a burly, solid actuality; fixed on the firm ground, his hair filled with hay-seed or cotton, his throne a counting-house stool, his wand a shovel or hammer; decked, not in fairy green, but in stout frocking, or factory shirting, rolled up at the elbows. There is nothing green about *him*.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

ENGLAND.

DAHLIAS AND DAHLIA EXHIBITIONS OF 1851.—The dahlia still continues to be one of the most popular of flowers; easily cultivated, requiring no peculiar attention, and blooming for a greater length of time than any other flower, except the pansy, it still holds its own as one of the most splendid of garden plants, and without which the autumnal season would be shorn of half its beauty. It is gratifying to see the interest which is shown in the culture and exhibition of the dahlia, by the English florists, and we only wish a tithé of the same interest was manifested by our own amateur cultivators. The exhibitions of the past season, in England, have been unusually fine, and judging from the long reports of some of the societies, the blooms must have not only been more numerous, but finer than on previous years.

The same success has not, however, been attained by cultivators in this vicinity. The unusually dry summer seriously injured the plants; and the unusually early frost of the 26th of September, touched many of the buds and blossoms, and so marred their beauty that no exhibition of flowers for the premiums of the Massachusetts Horticultural Society, has been made this autumn. In New York they were better, and our correspondent, Mr. Thorburn, gives a favorable account of some of the new ones of this year, which we have copied in another page.

As usual, heretofore, we give the names of the winning flowers in the stands of some of the best growers at the metropolitan and other exhibitions.

SLOUGH DAHLIA SHOW.—Best twenty-four: John Edwards, El Dorado, Mr. Seldon, Leda, Negro, Duke of Wellington, Yellow Superb, Magnificent, Fearless, Black Prince, Queen of Lilacs, Grenadier, Mrs. Seldon, Princess Louise, Richard Cobden, Mr. Palmer, Sir C. Napier, Beauty of Kent, Andromeda, Snowflake, Mrs. Saunders, Princess Radzville, Marchioness of Cornwallis, and Julien,—to Mr. C. Turner.

NORWICH HORTICULTURAL SOCIETY.—Best twenty-four: Queen of Lilacs, Sir F. Bathurst, Marietta, Magnificent, Duke of Wellington, G. Glenny, Negro, Earl of Clarendon, Richard Cobden, Mrs. Seldon, Meteor, Princess Louisa, King, Fearless, Marchioness of Cornwallis, Mr. Seldon, Queen of the West, Grenadier, Gem, Summit of Perfection, Yellow Standard, Queen of England, Essex Triumph, and Andromeda,—to Rev. C. Fellowes.

THE NORTH LONDON DAHLIA EXHIBITION.—Best twenty-four: Mr. Seldon, El Dorado, Fame, G. Glenny, General Fauchier, Essex Triumph, Toison d'Or, Sir R. Peel, Miss Chaplin, Shylock, Queen of Beauties, Privateer, Duke of Wellington, Mrs. Herbert, Admiral, Barmaid, Earl of Clarendon, Queen of the Lilacs, Queen of the West, Sir F. Bathurst, Hon. Mrs. Ashley, Carmina, and Seedling,—to Mr. Bragg.

BATH ROYAL HORTICULTURAL SOCIETY.—Best twenty-four: Snowflake, Imbricata, J. Edwards, Sir R. Peel, Mrs. C. Bacon, Mr. Seldon, Beeswing, Queen of Lilacs, Queen of Beauties, Sir F. Bathurst, Shylock, Seraph, Lady St. Maur, Portia, Queen of Whites, Duke of Wellington, Mrs. Seldon, Essex Triumph, Earl of Clarendon, El Dorado, Miss Chaplin, and Marchioness of Cornwallis,—to Mr. Drummond.

SOUTHAMPTON DAHLIA SHOW.—Best twenty-four: Earl of Clarendon, Richard Cobden, General Fauchier, Mrs. Seldon, Baltic, Thames Bank Hero, Leda, Beeswing, Admiral, Miss Herbert, Sir F. Bathurst, Barmaid, Nil Disperandum, Duke of Cambridge, Essex Triumph, Duke of Wellington, Elizabeth, Model, Fearless, Yellow Standard, Summit of Perfection, Sir C. Napier, Nepaulese Chief, and Mrs. Herbert,—to J. Edwards.

TAUNTON DAHLIA SHOW.—Best twenty-four: Queen of Lilacs, J. Edwards, Fearless, Mr. Seldon, Duke of Cambridge, Model, Thames Bank Hero, Earl of Clarendon, Negro, General Fauchier, Princess Radzville, Shylock, Queen of the East, Lady St. Maur, Miss Vyse, Richard Cobden, Una, Triumphant, Miss Chaplin, Magnificent, Beauty of Kent, Douglas Jerrold, Sir F. Bathurst, and Yellow Standard,—to Mr. Keynes.

FANCY VARIETIES.—The fancy sorts which have been the most successful in the winning stands, are as follows:—Miss Compton, Gasparine, Highland Chief, Mrs. Hansard, Elizabeth, Contribution, Lady Grenville, Queen of the Fairies, Mrs. Labouchere, Jeanette, Lady Callum, Forget-me-Not, Rainbow, Striata Perfecta, Flying Dutchman, Rachel, Elegantissima, Discount, Charles Perry, Madame Wachy, Emperor de Maroc, Floral Beauty, Miss Blackmore, Master Geo. Clayton, Picotee, &c.

SEEDLINGS OF 1851.—Quite a number have been exhibited, and among them the following received first class certificates:—Una, (Keyne's,) a fine, bold white; Morning Star, (Turner) a bright orange; Malvina, (Turner,) a mottled one; Miss Mathews, (Bragg,) fancy color, bright mellow red, with white tip; Triumphant, (Keyne's,) outline first rate, centre fair, splendid, purplish crimson; Dr. Frampton, (Rawling's) outline good, centre first rate, color white and purple; Sir F. Thesiger, (Rawling's,) rosy lilac; Laura Livingstone, (Keyne's,) fancy color, pinkish buff, with folds of rosy purple and light bluish tip; Nancy, (Keyne's,) fancy color, rich pinkish maroon, with white tip; Miss Ward, fancy bright lemon, with white tip; Ariel, (Turner,) a bold white; Comet, (Bushell,) a fancy flower; Bob Drummond (Drummond,) bright scarlet. Many others were exhibited, but were not certificated. Our dahlia fanciers will see by this list, that the rage for new seedlings continues unabated.

ART. II. *Domestic Notices.*

NEW DAHLIAS.—Our new dahlias, except Baltic, which is very uncertain, and not as fine as Seraph, are beautiful; Beauty of Kent is *grand*, so Summit of Perfection; Duke of Cambridge; Forget-me-Not; Nepaulese Chief; Queen of Lilacs; Mrs. Seldon; Primrose Invincible; Miss Pope; and many of last year's ones are superb, and all, *this day*, in prime bloom, Oct. 25th, and no frost yet. Many of the old ones are superb: Magnificent; Mr. Seldon; Beauty of Hastings; Box, *grand*—only decent one Drummond ever sent out; [quite true.—*Ed.*] Grant Thorburn, fine; Sir F. Bathurst—noble—noble; Buffalo Girl, do.; Belle de Paris; Elizabeth—a wonder; Mons. Affree, &c.; all indescribably fine now, and in quantities. *Yours*, G. C. THORBURN, *Astoria, Oct. 25, 1851.*

ART. III. *Massachusetts Horticultural Society.*

Saturday, November 1, 1851.—An adjourned meeting of the Society was held to-day,—the President in the chair.

C. S. Holbrook, Randolph, and Rev. A. R. Pope, Somerville, were elected members.

Adjourned two weeks to November 15th.

Exhibited.—FRUITS: From André Leroy, Angers, France, one hundred and sixteen varieties of pears; thirty-six of apples; twelve of crabs, walnuts, chestnuts, &c.; only about 30 of the pears, and about the same number of apples, arrived in good order. Among them were some fine new kinds, which we have noticed in a previous page.

From F. Tudor, pears—seedling, raised at Nahant. From S. Downer, Jr., pears—Beurré Diel, superior. From F. Marsh, apples—Hubbardston Nonsuch, Marigold, Baldwin, R. I. Greening, Seaver Sweet, Peck's Pleasant, and four varieties unnamed; pears—Lewis, fine; Tomato figs. From W. C. Strong, grapes—Black Hamburgh, very fine; Damascus, (?) Grizzly Frontignan, Muscat of Alexandria, Syrian, Red Chasselas, Black Prince, White Gascoigne, and St. Peters, all fine. From Hovey & Co., pears—Althorpe Crassane, Beurré de St. Quentin, Glout Morceau, Beurré Lange-lier, and Caennais. From J. Cass, grapes—Isabella, very fine. From J. H. Blake, pears—Napoleon, extra large, superior. From H. Vandine, pears—Lawrence, superior; Marie Louise, superior; Seckel, Beurré Diel, Buffum, MacLaughlin; grapes—Catawba, very fine; quinces—Portugal. From J. Hyde & Son, apples—Danvers Winter Sweet, R. I. Greening, Baldwin, very fine; Seaver's Sweet, Nonsuch, and Hubbardston Nonsuch. From J. Fowler, pears—Sieulle, Beurré Diel; apples—Beef Steak. From J. Stickney, pears—Beurré Diel, superior; Coffin's Virgoulouse, very fine; and Dix, superior.

Fruits tested.—From H. Vandine, pears—Lawrence, fine; Marie Louise, very fine; MacLaughlin. From F. Tudor, pears—a seedling, raised at Nahant, of medium size, obovate form, with a yellowish greenish skin, tinged with blush; pleasant, sweet, and good. From J. Stickney, pears—Doyenné d'Hiver, or Coffin's Virgoulouse, handsome, but only of medium quality. From S. Downer, Jr., pears—Beurré Diel, very fine. From Hovey & Co., pears—Glout Morceau, Vicompte de Spoelberch, good; Belle Epine Dumas.

November 8. *Exhibited.*—FRUITS: From J. S. Sleeper, pears—Passe Colmar, Glout Morceau, Winter Nelis. From John E. Lodge, pears—Glout Morceau. From Abel Cushing, pears—Beurré Diel. From M. P. Wilder, pears—Grand Soliel, Soldat Labourer, Fondante de Malines, Nouveau Poiteau, and two kinds without name. From J. Stickney, pears—Thompson's, Coffin's Virgoulouse. From W. Bacon, pears—Beurré Diel. From J. F. Allen, grapes,—Wilmot's new Black Hamburgh, Syrian, Black Hamburgh, Muscat of Alexandria; pears—Emerald, Urbaniste, specimen weighing over one pound. From J. Cass, Isabella grapes. From R. Manning, pears—Sieulle, Emerald, Lawrence.

Fruits tested.—From M. P. Wilder, two specimens of pears without name; Nouveau Poiteau, melting and good; Fondante de Malines, promises well; Grand Soliel, Soldat Labourer. From J. Stickney, Coffin's Virgoulouse,

Thompson's. (?) From R. Manning, Lawrence, excellent; Emerald. From J. S. Sleeper, Winter Nelis. From Hovey & Co., Beurré Langelier, Cross, Bezi d'Esperine; Poire Mallot gives promise of being a good fruit.

November 15.—An adjourned meeting of the Society was held to-day,—but there being no quorum, it was adjourned two weeks to November 29.

November 22. Exhibited.—FRUIT: From F. Dana, fine specimens of Knight's Monarch and Winter Nelis pears. From S. Downer, Jr., beautiful specimens of Glout Morceau pears.

Fruits tested.—Knight's Monarch, from Mr. Dana, rich, melting, high flavored and fine; Belle Epine Dumas, from Hovey & Co., excellent.

November 29.—An adjourned meeting of the Society was held to-day,—the President in the chair.

It was *voted*, that the President, with Messrs. Wilder and Breck, be a committee of three, to propose some mode by which the reports of the several committees awarding premiums, shall be made to the treasurer.

The President, from the executive committee, reported that the same amount of money appropriated last year, for premiums, be appropriated for the year 1852, and to be divided among the several committees in the same manner as the present year.

On motion of Mr. Cabot, a committee of three was appointed to consider the propriety of awarding a premium or gratuity to Capt. Lovett, for the Christiana melon. Messrs. Cabot, Wilder, and Breck were appointed the committee.

Adjourned two weeks to December 13th.

Exhibited.—FRUITS: From J. B. Moore, fine Hubbardston Nonsuch apples. From Capt. Lovett, Drap d'Or. From C. Newhall, fine apples, supposed to be the Calville Blanche d'Hiver; also, Glout Morceau pears.

PREMIUMS AWARDED FOR FRUIT.

GRAPES.—For the best specimens, subsequent to July 1, to W. C. Strong, \$10.

For the second best, to Hovey & Co., \$7.

To M. H. Simpson, a gratuity of the silver medal, for fine specimens, \$5.

PEACHES.—For the best specimens, out-door culture, Coolidge's Favorite, to J. F. Allen, \$6.

For the second best, the same variety, to C. E. Grant, \$4.

PEARS.—For the best autumn pears, the Louise Bonne of Jersey, to E. Bemis, \$6.

For the second best, the Duchesse of Angouleme, to S. Leeds, \$4.

To S. Downer, M. P. Wilder, H. Vandine, and J. F. Allen, each, the silver medal, for fine specimens.

To E. Cleaves, W. R. Austin, J. Dane, S. Driver, and Jos. Stickney, each, the bronze medal, for fine specimens.

APPLES.—For the best autumn apples,—the Hubbardston Nonsuch,—to J. B. Moore, \$6.

For the second best,—the Drap d'Or,—to Jos. Lovett, \$4.

To C. Newhall and Jos. Barrett, for fine specimens, \$4 each.

QUINCES.—For the best, to J. Mann, Jr., \$5.

For the second best, to W. Maynard, \$3.

FIGS.—For the best, to J. F. Allen, \$5.

For the second best, to Hovey & Co., \$3.

TOMATO FIGS.—To F. Marsh, for extra fine samples, the silver medal.

HORTICULTURAL OPERATIONS

FOR DECEMBER.

The early part of November was mild and pleasant, and exceedingly favorable to the forwarding of all fall work; but on the 11th a sudden snap of cold weather caused the thermometer to fall to 15°, and at intervals, since then, cold rains and frost, with snow and ice, have retarded planting, and the usual routine of the preparatory work for the winter.

GRAPE VINES will now be at rest in the greenhouse and coldhouse, and if they are properly pruned and protected in the latter house, they will require no further attention till February. In the stove now will be the time to commence forcing; and the vines, if they have been gradually brought to that point, by proper treatment, will break as regularly, on the application of heat, as two months later. But in early forcing, many things are required to ensure success; the border must be *thickly* covered with manure, to keep out frost; and if protected with boards or sashes to keep out the cold rains, so much the better. Fires must be cautiously applied, so as not to hurry the breaking of the buds; and, finally, constant care in relation to air, syringing, &c., &c.

FRUIT TREES, &c.—Nothing can now be done, unless the weather is open, in this department. If it should turn up mild, any planting, necessarily cut off by the cold, may now be completed.

PROTECT and MANURE all kinds of trees, vines, plants, &c. Now is the best time, unless the cold is very severe.

FLOWER DEPARTMENT.

Referring to our last, for hints regarding the temperature of houses, in the early months of winter, we have now little to say on that head, and if our hints have been acted upon, everything will have a hardy and healthy look, and will be not only better able to stand the winter more safely, and at less expense of fuel, but will come out brighter and healthier after the five months' confinement.

Colder weather having set in, and the out-door work nearly finished, now

will be the time to set everything to rights in-doors. Let all the plants be gone over carefully,—pruned of dead wood, as well as ill-shaped branches,—staked up neatly,—top dressed,—cleaned, and re-arranged on the stage. December is the month for this. With January other work will require attention.

CAMELLIAS will now be blooming freely, and should be kept liberally watered. Attend to the directions already laid down.

CHRYSANTHEMUMS, done blooming, may now be pruned of the old stems, and placed away in a cold frame or cellar.

JAPAN LILIES may now be potted, as advised in our last. Protect beds in the open air, with 3 or 4 inches of old manure or leaves.

PANSIES, in the open ground, should now be protected with a frame and a covering of leaves. Seeds sown now in pans, in the house, will make fine plants for blooming in May.

CINERARIAS will need repotting, if it has not already been done. Keep them in a light situation, near the glass, in order to get a good root action, without endangering the too rapid advance of the shoots.

ROSES, taken up in October, and placed away in frames, may now be pruned, and placed upon the stage, when they will push anew and bloom finely, from February to May.

GARDENIA FLORIDA.—These plants should be kept cool and rather dry, unless it is desired to bloom them early, when they should be placed in the warmest part of the house.

SPARAXIS and IXIAS may yet be potted, if not already done.

ERICAS and EPACRISES need some attention; report if they require it, and be careful to nip off the tops of all rambling shoots, if fine bushy plants are wanted.

CHINESE PRIMROSES.—Repot if they require it, and keep in a cool, light, but not sunny aspect.

NEMOPHILA INSIGNIS may now be repotted.

SCHIZANTHUSES will need another shift into large pots, if the roots are crowded.

ASTROMERIAS may be divided and repotted this month.

PETUNIAS intended for training on trellises, should now be shifted into their blooming pots.

PELARGONIUMS will now require repotting; keep them in an airy situation, *near the glass*, for on this the compactness and beauty of the specimens depend. Nip off the tips of the shoots, in order to have them throw out good laterals. Water sparingly, and fumigate as often as the green fly makes its appearance.

KENNEDIAS, and similar running plants, growing in pots, should be kept neatly trained as the shoots advance; a little neglect at this time will greatly mar the beauty of the specimens.

BEGONIAS, now in a dormant state, should be kept rather dry; the winter flowering sorts should have a warm place, and be moderately watered.

HYACINTHS and EARLY TULIPS, as well as other bulbs for early blooming, should be planted immediately, in pots in the house.



