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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 vertus que je ne suppose à celui que aime à parler et à faire des jardins. Pères de famille, inspirez a jardinomanie a vos enfans.”—*Prince de Ligne.*

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EDITED BY C. M. HOVEY.
AUTHOR OF THE “FRUITS OF AMERICA.”

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THE MAGAZINE OF HORTICULTURE.

THE PROGRESS OF HORTICULTURE.

THE horticultural progress of the year, though not presenting any prominent or marked improvements, has, notwithstanding, been such as to gratify all who are the least interested in a science so eminently conducive to the luxuries, the enjoyment, and even the comfort of so large a class of the community. Our pages have chronicled everything worthy of especial note, and to them we must refer our readers for a detail of what has been accomplished. Some general hints and incidental information, as well as random suggestions in regard to the future, we now embrace the opportunity to present in our brief summary of the year.

First, in regard to the season, we give a condensed account, which, as compared with previous ones, may not be without its value.

Perhaps, in the whole history of Horticulture in our own country, no year has been so disastrous over so large a space of our widely extended domain as the last. It will be a year of sad recollections to the cultivators of the West, sweeping off as it did the labor of years spent in planting fine orchards and beautiful gardens, and requiring a long time to place them in the same thriving condition they exhibited in the autumn of 1855, promising the most liberal crops. But a winter of unprecedented severity neither spared crops nor trees, and in many localities the latter were destroyed to an extent unexpected, and altogether beyond the supposition of the most experienced cultivator. Fruit trees which, in the coldest parts of New England, rarely sustain any injury in a temperature 30° to 40° below zero, were killed outright, or

lost a great portion of their younger growth. To us, judging only from our own experience, with no opportunity to examine these injured trees, it seems that the subject should receive the most careful attention of intelligent cultivators, and the causes assigned for such wholesale destruction of the same kinds of trees, which for centuries have withstood unharmed a more intense cold than that experienced in the West last season. We are likely, at some future time, to experience the same severity, and now is the time to ascertain, if possible, the cause of so much injury, that it may be guarded against hereafter.

Throughout New England the winter of 1855 and 1856, though of long duration, was not so intense as we have often experienced. The peach, which is the first tree to indicate a severe winter, produced a more than average crop in the eastern portion of Massachusetts. Of other fruit trees we hear of no injury whatever.

January was a cold, dreary and severe month, with the temperature below the freezing point every morning but one, below zero four times, the lowest 8° below, and the average temperature lower than any January for several years. More than twenty inches of snow fell, covering the ground at the close of the month.

February continued exceedingly cold, the highest range of the thermometer being 40° at sunrise, and that but once, on the 12th. The lowest was 4° below. Three inches of snow fell, which, with that of January, formed a thick covering to the earth.

The month of March seemed but a continuation of February. On the 2d the thermometer was 2° below, and the highest range of the month at sunrise was 33° . The last three days were exceedingly cold, with the thermometer from 20 to 25° .

The first week of April was very cool, but on the 9th the temperature became milder, indicating 60° , the first really warm day since the last of November previous. With it the last of the winter snow disappeared. It was then frosty again till the the 17th, when truly April weather set in.

After this, easterly winds prevailed, and the month closed more variable than usual.

May was more seasonable, though still rather cold. A heavy rain set in on the 9th, lasting three days; after this it became warm, with the temperature at 80° , and on the 15th the cherries and pears began to bloom. From this to the close of the month the weather was more favorable, without frost, and accompanied with fine showers.

The early part of June was cooler than usual, and accompanied with heavy rains. But after the middle of the month the weather became more favorable, and the latter part was exceedingly warm and very dry, the temperature ranging from 80 to 99° .

July commenced quite cool, and with light and refreshing rains. On the 17th, however, the temperature suddenly changed, with the thermometer at 98° , and the remainder of the month was clear, dry and hot. The temperature reaching 100° on the 25th and 26th, and 101° on the 27th.

Vegetation began to show the effects of the hot July weather, but fortunately with August came a very great change. The wind veered into the east, with a cool rain, and upwards of four inches fell in less than twelve hours. This was succeeded by warm though still showery weather, and on the 19th another easterly storm of three days' duration saturated the ground. More than twelve inches of rain fell in August.

September was cool in the early part, but became warmer towards the close of the month. It was wet and showery throughout.

October was also cool, with a light frost on the 5th, though not sufficient to do much damage. The first destructive frost was on the 15th. After this it was fine to the end.

November was a mild month, with considerable rain, and but few frosty nights, the lowest temperature being 20° . The month closed with a light snow storm, in which about two inches fell.

December was cooler, with dull and cloudy weather, and

two or three inches of frost in the ground. On the 18th the mercury suddenly sunk to 7° below, and the 19th to 4° below, being the lowest range for this month since 1836. As we close our account, (December 22d,) winter appears to have set in in earnest.

A hasty comparison of the past season with that of 1854 and 1855 will show a marked difference in regard to its temperature, moisture, and general characteristics. The seasons of 1854 and 1855 were as remarkable for their dryness as that of 1856 for its moisture, more rain having fallen in the two months of July and August, in 1856, than in the same months in both of the previous years. This variation, however, was local, being confined chiefly to New England and the Atlantic coast, while in Western New York and the Western States generally, the summer of 1856 was attended with a greater drought than either of the preceding years, cutting short crops of all kinds, and especially the fruit crop, small as it was, from the effects of the cold winter. In this neighborhood the pear was the only fruit which produced a fair supply; the apples were almost an entire failure. Grapes, owing to the heavy rains, and cool weather of July and August, did not ripen, only in very warm situations, with the exception of the Concord, which was thoroughly matured by the middle of September, ten days before the first frost.

HORTICULTURE.

In the production of new fruits, and in the superior cultivation of all kinds, more especially the pear, the year has shown a steady advance over preceding ones. The attention of fruit growers is turned to the raising of seedlings, under the conviction, that, as a general rule, they are better adapted to our climate than those of foreign origin. This opinion, which we long ago advanced, and have become convinced is founded in truth, is now generally acquiesced in, and has induced our zealous amateurs to make renewed attempts in the production of new varieties. The grape to which we shall more particularly allude, as well as the pear, have had some valuable accessions the past year.

It is thought by many cultivators that we already have too many varieties of fruits; and that a reduction of sorts rather than an increase is to be desired. But this we think is a mistake. It is true our catalogues may be pruned of many inferior kinds; they are yearly undergoing this operation; and they will eventually contain only those of real merit; but there is ample room for new and improved seedlings, and the production of such as shall comprise all the qualities necessary to constitute a choice fruit must be a slow process, requiring time to fully prove them, and amount in the end to only a fraction of all that must be raised. What we want is a collection of varieties, excellent in quality—vigorous in growth—hardy in constitution—withstanding our summer heat and winter cold—of good size—maturing readily, and keeping well. To combine all these characteristics is the object now in the growth of new varieties.

The Grape, that most delicious of fruits, so abundant in France as to be within the reach of every peasant, has for a long time, owing to the unfavorableness of our climate, been confined chiefly to the gardens of the wealthy, where it could alone be produced by artificial means. But, thanks to our enterprising cultivators, the time is coming when we may have them in as great abundance, and of as fine quality, as the inhabitants of Southern Europe. Our native grape, alone adapted to our variable climate, is, after a while, yielding to the ameliorating influence of cultivation through the seed, and we are no longer compelled to eat the half-matured Isabellas, so long the only variety of any value. The Diana, the Concord, the Delaware, the Rebecca, the Carter, and other varieties of promise, can now be obtained, which produce their fruit with as much certainty as the Baldwin apple; and every individual who possesses a rod of ground throughout New England, may now enjoy the luxury of fully matured grapes. The warm and the cold grape-ry, may, and probably always will be, necessary appendages to every complete garden; but the same advancement made in this fruit that has been made in others, the Strawberry, for example, will render these structures no longer indispen-

sable, as they have hitherto been to all who would possess good grapes. In our opinion it is doubtful whether any of the foreign grapes, unless we except the Muscats, exceed the Rebecca in quality. And even the Concord, in the size of its berries and beauty of its clusters, is to be preferred to an ill-matured Black Hamburg. Mr. J. F. Allen's efforts at hybridization promise well, and if his grape sustains the same reputation under open culture it has received under glass it will quite supersede the growth of the Chasselas and other common grapes.

The American Pomological Society has given to the public the result of its deliberations at its Fourth Session, held in Rochester in September last, as published in our volume for 1856. We have in a previous summary alluded to the labors of this Association, as tending to aid materially in correcting the nomenclature of our fruits, and making known their good qualities. The mere assemblage of so many cultivators from such extreme sections of our country, and the simple exchange of opinions, is in itself a subject of congratulation.

The cultivation of the pear upon the quince is of such ancient date, and has so long been successfully practiced in that great pear-growing country, France, that it appears somewhat absurd to see it attacked at this late day, as it has been by individuals, who, either from want of experience, or other causes, have not succeeded well in its cultivation on this stock; and hence would deny to a great portion of the community for a series of years, so delicious a fruit as the pear, for in no way can it be obtained in any abundance except upon the quince, for nearly half a generation. An intelligent correspondent has shown the fallacy of the arguments made use of to disparage the quince stock, and it would be useless to go over the ground again. As he has truly said, "Let gentlemen botanists have their own way in disputing about it, on we shall go," reaping an abundance of fruit, while they are cavilling in regard to a fact long ago established by the experience of men, not mere tyros in the work, but who had made the question a study of their life.

We have hardly space to allude in a proper manner to the only important scientific experiment of the year, Mr. Simpson's mode of growing grapes, which we gave a full account of in our last volume, (XXII. p. 153.) He is now maturing his fourth crop of eight months each, and without any diminution of vigor of the vines or excellence of the fruit. As we intend soon to visit his grapery, and report upon the progress of his vines, we shall leave the subject, only remarking that Mr. Simpson intends fully to establish his system, or acknowledge it a failure.

It is gratifying to learn that our recent remarks on keeping and ripening fruit, accord with the views of several cultivators who have had some experience upon the subject, and have been observant of the modes generally adopted. That much that has been written is without any value is readily admitted; and so surrounded with difficulties has the ripening of our winter pears generally been pronounced, that some such simple rules are necessary to disperse the mysticism which has been so prominently claimed for the perfection of this fruit.

We ought not to pass over in our review the advancement of gardening in the remote State of California. The Second Annual Fair of the State Society was held in October last, and the display of fruits, considering the recent settlement of the State, now scarcely half a dozen years, was most remarkable. Possessed of a climate as genial as it is even in its temperature, all our fruits appear to flourish with unusual vigor, and reach a bearing state at a period almost incredible to those who have waited years and years for the produce of their trees. According to the short experience of some California cultivators, the apple and pear begin to bear freely at the age of four and five years! How much would one as zealous as Van Mons in raising new fruits accomplish in a lifetime with such results! We may look with interest to this land of golden treasures and exuberant vegetation, for choice acquisitions to our stock of fine fruits.

Our Pomological Gossip for the year has gathered up all that is interesting among new fruits, and a review of the

volume will save the recapitulation of what has already appeared.

FLORICULTURE.

In the general diffusion of a taste for flowering plants there is a marked improvement; but in a love of the rare and beautiful plants of exotic growth which need the protection of the greenhouse or hothouse, there is not so much zeal manifested as it would give us pleasure to note. While we would on no account neglect the cultivation of all those objects which add so much to the ornament of our gardens and parterres in summer, we would not forget the elegant productions which require the artificial temperature of the greenhouse, embracing as they do the Camellia, the Pelargonium, the Cineraria, the Azalea, the Heath, and the multitude of plants from milder regions. In a climate where the frost holds undisputed sway for four or five months of the year, a greenhouse affords one of the most agreeable sources of amusement as well as instruction, gratifying the eye with its blossoms of varied hue, and regaling the sense by their refreshing odor. In summer, when nature arrays herself in robes of beauty, and spreads with lavish hand her landscapes before us, we find abundance for enjoyment without the aid of flowers and plants; but in winter, when these scenes no longer greet us, the greenhouse or conservatory compensates for their loss, and the contemplation of the vegetation of other climes, which our own forbids, only by means of an artificial temperature, becomes a new source of delight. In no department of Floriculture is there so little zeal as in the cultivation of exotic plants. In this we are far behind our transatlantic friends.

We have in two articles in our last volume spoken a few words for the annual and perennial plants, both of which are too much neglected in the prevailing taste for gaudy masses of verbenas and other bedding plants. The latter, as we have already remarked, are indispensable additions to every beautiful garden, but not to the exclusion of everything else. It is the judgment in selection and taste in arrangement which makes the most interesting garden scene.

Specialities may be permitted in the grounds of every cultivator, but the garden which shall please the most and retain its beauty the longest, must include the whole range of flowering plants, and specialities should be the exception and not the rule.

The Rose, that most beautiful of all garden shrubs, has found some excellent advocates in our last volume, whose advice, in regard to its culture and the selection of varieties, is of great value. Our correspondent, Professor Page, who is a zealous cultivator, will continue his remarks in our present volume, to which we, as no doubt our readers do, look with great interest.

The rose is a favorite flower, but the introduction of the finer varieties does not receive enough attention. In too many gardens we still find only the older and inferior kinds. True, we would not discard them with haste, merely to substitute new ones without regard to their merit; but in the immense number of sorts which the French, with a prodigality beyond belief, bring to the notice of fanciers, there are many which are a great improvement over the old kinds, and to add these to their gardens should be the object of all who would possess a fine collection. We would here, also, speak a word for the Annual roses, which are likely to be neglected for the so-called Perpetuals; the latter we fully appreciate, but in the passion for these we should not forget the former, which produce a mass of bloom in June that no other class can equal, and no Perpetuals repay by their scattered autumnal flowers. Let us advise every lover of roses not to neglect the Annual bloomers, however so much he may admire the Perpetuals.

The Rhododendron, the Azalea, the Kalmia, and the Tree Pæony are garden shrubs of the greatest magnificence. We long ago remarked that we could not let a year pass without advocating the extended cultivation of such ornaments to every garden of any pretences to beauty. Some zealous amateurs appreciate their worth; but it is with regret that we add, too many know nothing about them. While in England the merit of a fine residence is appreciated in proportion

to the extent of its American plants, we, in our ignorance of what that beauty consists, pass them by unheeded, and fill our grounds with imported shrubs, to the exclusion of our own natives, or their innumerable hybrids. The greatest attractions of the London exhibitions are the American plants; the most interesting feature of their suburban places is the American garden. How long will it be before our own cultivators will appreciate the real elegance of these shrubs, and make them indispensable to the decoration of their gardens and grounds.

For the variety of new plants introduced to Europe and added to our own collections we must refer to our Floricultural Notes.

ARBORICULTURE.

Laboring to increase the taste for trees and shrubs, we have devoted many articles in our last volume to a complete description of all the principal ornamental trees, with engravings of some of the more rare and less known; and believing that nothing has so much prevented the formation of ornamental plantations as the want of a knowledge of the many trees which are suitable for the purpose, we intend to continue the series of papers by our correspondent, Mr. Flagg, as well as our own articles, in our present volume. The information which they will convey will, we hope, induce our amateur planters to introduce them into their grounds, that they may give that variety which is the charm of every garden landscape, but which they have heretofore rarely possessed. The Magnolia, the Tulip tree, and the Virgilia, all hardy native trees, are as little known as if they were natives of a foreign clime. With such a number of fine trees as our country supplies, in addition to those of exotic growth, there can be no want of variety in the most limited pleasure ground.

The introduction of Evergreen trees into Ornamental plantations is becoming more general, both for purposes of effect and for shelter, and they embrace a greater variety than heretofore. All the known really hardy sorts are more sought after, and there is an eager desire to extend the

list as rapidly as they can be well ascertained. Among the great number of species, coming from the high elevations of warmer climes, that have been recently brought to notice, it is difficult to know which are hardy; for while the native habitats of some would indicate that they are, experience proves the contrary; while others, which from the same cause are supposed to be tender, prove the reverse, and may be classed among our hardy trees. The high mountain ranges of California, it is believed, will yet enrich our gardens with some fine species; so far, however, all that have been received are too scarce and rare to risk a fair trial. The *Washingtonia* it is feared will not prove hardy.

As soon as we conclude our articles on "Our Ornamental Trees," we intend to take up the Evergreens in the same manner.

LANDSCAPE GARDENING.

We are gratified to notice that there is an increasing desire with those who are laying out new residences or improving old ones, to place the work in the hands of those who make some pretensions to landscape art. We are aware that there are very few who are able to undertake this task or carry out the work in a thorough and artist-like manner; this cannot be expected at present; but to have some approach to the true principles of landscape is better than the crude attempts that are made by those who have no correct ideas upon the subject. When a few good examples can be referred to for inspection we have no doubt it will become the general practice of gentlemen of wealth and taste to secure the advice of professional men before planting their grounds.

In order to make our readers acquainted with the history as well as practice of Landscape Gardening in England, where it has attained such perfection as to be designated the English or Natural Style, our correspondent, Wilson Flagg, has given a brief review of all the works of any note that have been written during the last century upon this interesting subject. They contain a great fund of information, and useful suggestions touching the principles and practice of Landscape

Gardening. A careful perusal of these articles, which contain the peculiar views of each author, and the substance of their practice, will materially aid every amateur who is desirous of cultivating a taste for Landscape Art. As some of the works reviewed are not easily to be procured, the abstract of those presented by Mr. Flagg will be the more acceptable.

One thing we must object to, which we have seen in plans of new grounds ; this is the introduction of grotesque or fanciful figures, scattered promiscuously over turf, without any reference either to their own groups, or with surrounding objects. It is in the worst possible taste ; a circle is generally admissible in almost any situation, because it harmonizes with every curved line ; but diamonds, stars, triangles, and other similar forms, make an incongruous mass, impossible to dispose in any harmonious manner with curved or even straight lines.

HORTICULTURAL LITERATURE.

The principal publications of the year have been new editions of previous years. The few new works are the following :—**GARDENING FOR THE SOUTH**, by Wm. N. White of Athens, Ga., which we have noticed. **THE AMERICAN GRAPE GROWER'S GUIDE**, by Wm. Chorlton. **NOXIOUS INSECTS OF NEW YORK**, by Dr. Fitch, published by the authority of the State. **STUDIES IN FIELD AND FOREST**, by Wilson Flagg, which, though not strictly Horticultural, treats upon subjects so immediately connected with rural life that we enumerate it here. The second volume of the **FRUITS OF AMERICA** has been completed, and the first number of the third volume will appear in February. The two volumes contain *ninety-six* beautifully colored plates of the finest pears, apples, peaches, cherries, and plums, cultivated in the United States, with full descriptions of each, and numerous engravings, illustrating the habits of the trees, &c. It is published at great expense, and we hope will receive the support of all who are interested in the growth of fine fruit. Its dissemination among our nurserymen would be the means

of preventing many errors which are now so common. In addition to these we may mention the **TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY FOR 1855**, which contains a large amount of valuable information to the agriculturist. It is a volume alike creditable to the Society and to Col. Johnson, the able corresponding secretary who prepared it. The **PATENT OFFICE REPORT** for 1855 is of a similar character to those which have preceded, containing useful information, but mixed with much that is of no importance whatever. The **GENESEE FARMER** has passed into the hands of Joseph Harris, an able writer on agricultural matters.

OBITUARY.

We have already recorded the death of Dr. T. W. HARRIS, the eminent Entomologist. We have now to announce, among those distinguished for their interest in Agriculture or Horticulture, who have died the past year, the name of the Rev. J. O. CHOULES, of Newport, R. I., who died suddenly in New York. Dr. Choules was deeply interested in agriculture, and all that pertains to its kindred arts. He was for a long time a prominent member of the American Institute, and one of the committee of managers. His circle of friends was large, and his loss will be greatly lamented. Mr. N. J. BECAR of Brooklyn, N. Y., died suddenly at his home in August last. Mr. Becar was widely known to the Floricultural world, as one of the most successful amateur cultivators of the camellia, having produced some very beautiful seedlings. His collection of plants has frequently been noticed in the earlier volumes of our Magazine. Of late years he had turned his attention to the raising of stock on his farm in Smithtown, and at the time of his death, in connection with Mr. L. G. Morris, owned some of the finest Durham cattle in the United States. His loss will be greatly deplored by the friends of agriculture and horticulture throughout the country. Hon. ELIJAH VOSE, of Dorchester: Mr. Vose was for many years President of the Massachusetts Horticultural Society, having succeeded Zebedee Cook, Esq. in 1835. He labored zealously for the interests of the So-

ciety, and aided in placing it in the prominent position it now holds. He was an excellent cultivator, and produced many fine specimens of fruit from his garden. He also contributed to the columns of the old *New England Farmer*, and our *Magazine*. His article upon the Strawberry in our Volume for 1836, (II. p. 89,) is one of the best we have ever published on the growth of this fruit. Of late years he lost all interest in horticultural pursuits, and rarely if ever attended the meetings of the Society. Though absent for so long a period from his old associates and friends, his memory will be cherished and his death lamented.

THE LITERATURE OF GARDENING.

BY WILSON FLAGG.

No. XI. "OBSERVATIONS ON FOREST SCENERY." BY REV. WM. GILPIN.

THIS is one of the most pleasing productions of the English press on the subject of Forest Scenery which is treated by the author, both as it relates to the art of painting, and to the art of planting for ornamental effects. The literary merits of the work are of a high order, and it ranks among the standard productions of English literature. To the student of the art of landscape painting, the perusal of this work may be considered as indispensable, and the lover of nature will always read it with a lively interest, on account of its excellent analysis of the beauty of trees, and its ingenious remarks on the art of grouping and arranging them in landscape.

Our author considers a tree the grandest and most beautiful of all the productions of the earth. In the former of these epithets nothing contends with it, for rocks and mountains are but a part of the earth itself; and though among inferior plants, shrubs, and flowers, there is great beauty, yet they are beautiful as individuals, and are not, like trees,

adapted to composition in landscape, nor to receive the effects of light and shade. In like manner the splendid tints of the insect, however beautiful, must yield, in elegance and proportion, to animals of a higher class. Trees are not to be compared with animals in their spirited attitudes, character, and motion; but, in point of variety, Nature has been kinder to trees than to living forms. Though every animal is distinguished from its fellow, by some little variation of color, character, or shape, yet, in all the larger parts, in the body and limbs, the resemblance is generally exact. In trees it is just the reverse: the smaller parts—the spray, the leaves, the blossom, and the seed—are the same in all trees of the same kind; while the larger parts are wholly different. You never see two oaks with an equal number of limbs, the same kind of head, and twisted in the same form; and it is from these larger parts that the most beautiful varieties result.

There is also as much difference in the beauty of trees of the same kind as there is in human figures. The limbs of some are awkwardly set, their trunks are disproportioned, and their whole form is unpleasing. The same rules which establish elegance in other objects establish it in these. There must be the same harmony of parts, the same sweeping line, the same contrast, the same ease and freedom. All forms that are unnatural displease. A tree lopped into a May-pole is disgusting. Clipped trees and pollards, for the same reason, are disagreeable. Even natural forms, when they bear a resemblance to art, sometimes displease. Hence we are seldom so well pleased with the conical or pyramidal trees as with those whose forms are less constrained: almost everybody prefers the shape of an oak to that of a fir.

Lightness is also a characteristic of beauty in a tree. Its extremities must in some parts be separated, and hang loosely from the fulness of their foliage that occupies the middle of the tree, or the whole will be only a large bush. The horse-chestnut, in this respect, is commonly unpleasing. A tree must also be well balanced to be beautiful. It may have form, and it may have lightness, and yet lose all its effect

by wanting a proper poise. The boll must appear to support the branches, not necessarily with the perpendicular firmness of a column, but it should never lean so much that one side is plainly overbalanced. Yet beauty often arises, under certain circumstances, from an unbalanced tree; but the peculiarity of the situation must give it a local propriety. A tree, for instance, hanging from a rock, though totally unpoised, may be beautiful, or when we see it bending over a road, because it corresponds with its peculiar situation. Without these requisites, therefore, of form, lightness, and proper balance, no tree is beautiful.

Besides these requisites of beauty in a tree, our author enumerates other things, of an adventitious kind, which often add great beauty to it. Many of these are derived from injuries the tree receives, or the diseases to which it is subject. What is more beautiful, for instance, on a rugged foreground, than an old tree, with a hollow trunk, or with a dead arm, a drooping bough, or a dying branch? Our author cannot, however, intend to apply these remarks to trees in real landscape, though they may be very applicable to those employed by the painter. A tree which has those deformities that indicate its great antiquity, it will not be denied, may often add impressiveness to a scene in real nature. As the author remarks, these splendid remnants of decaying grandeur speak to the imagination in a style of eloquence which the stripling cannot reach.

The author considers the mosses, lichens, and other parasitic plants that grow upon the trunks and branches of trees, as adding greatly to their beauty in many cases. In the damp climate of England these appendages to the trees are probably a great deal more luxuriant than in our dry climate. All these parasites, under whatever names distinguished, add, in the author's opinion, a great richness to trees; and when they are blended harmoniously, as is generally the case, the rough and furrowed trunk of an old oak, adorned with these pleasing appendages, is an object which will long detain the picturesque eye. But, besides the appearance of moss upon the trunks of trees, it creeps among the branches, and some-

times takes possession even of the smaller spray. In winter this often has a fine effect, when the whole tree, turned into a beautiful piece of straw-colored coral, appears against a dark wood, or some other background which gives it relief. The author calls these mosses and lichens the ornaments, while the foliage is the dress, of a tree.

Mr. Gilpin's description of the blasted tree is highly poetical, and we shall quote it *verbatim*: "The blasted tree has often a fine effect both in natural and artificial landscape. In some scenes it is almost essential. When the dreary heath is spread before the eye, and ideas of wildness and desolation are required, what more suitable accompaniment can be imagined than the blasted oak, rugged, scathed, and leafless, shooting its peeled, white branches athwart against the gathering blackness of some rising storm? Thus the poet treats it: —

————— 'As when heaven's fire
Hath scathed the forest oak, or mountain pine,
With singed top, its stately growth, though bare,
Stands on the blasted heath.'"

The rooting of trees is also a circumstance on which their beauty greatly depends. Old trees generally heave their roots above the soil, and the appearance is certainly very picturesque. The more they raise the ground around them, and the greater number of radical knobs they heave up, the firmer they seem to establish their footing upon the earth, and the more dignity they assume. An old tree rising tamely from a smooth surface, as we often find it, covered with earth, in artificial ground, loses half its effect. It does not appear as the lord of the soil, but to be stuck into it, and would have a still worse effect on canvas than it has in nature.

To the adventitious beauties of trees we may add their susceptibility of motion. The waving heads of some, and the undulation of others, give a continual variety to their forms. In nature, the motion of trees is certainly a circumstance of great beauty. From the motion of the tree proceeds that pleasing appearance of the *checkered shade* formed under it by the dancing of the sunbeams among its playing leaves.

We shall pass over the remarks of the author concerning individual trees, and proceed to that part of the treatise in which he considers them under their various combinations, among which clumps are the simplest. What number of trees make a *clump* no rules of art prescribe. In scenes brought near the eye, we call three or four trees a clump; but in distant and extensive scenery, we scruple not to use the term for any smaller detached part of a wood, though it may consist of some hundreds. The author distinguishes two kinds of clumps, therefore,—the *smaller* and the larger, confining the former chiefly to the *foreground*, and considering the latter as the ornament of the *distance*.

The chief beauty of the smaller clump arises from contrast in the parts. In single trees, each must have its characteristic beauty. It has nothing else to depend on. But, in combination, the beauty of the individual is not required: the whole clump together must produce the effect. In the first place, the *relative* situation of trees with regard to each other should be considered. Three trees or more, standing in a line, are formal. In the natural wood you rarely see this formality. If three trees do not stand in a line, they must stand in a triangle, which produces a great variety of pleasing forms. If a fourth tree be added, it stands beautifully near the middle of the triangle, of whatever form the triangle may be. As the trees increase, their different modes of growth, the swelling of their roots, the habits they contract from winds, their ramification, their lateral branches, and other accidental circumstances, introduce endless varieties among them; but, after all, the artificial clump will rarely attain the beauty of the natural one.

If the clump consist of still more trees than four, a greater variety among the stems will take place,—double triangles, irregular quincunxes, and other pleasing shapes, which may be seen exemplified in every wood of natural growth. The branches, also, are as much a source of contrast as the stem. To be picturesque they must intermingle with each other without heaviness; they must hang loosely and variously from every side; and if there be one superior apex, there

may be two or three others that are subordinate, according to the size of the clump. If trees of different species are mixed, they ought not to be planted, as they often are, alternately, but each kind together.

Contrasts also arise from the mixture of trees of unequal growth,—from a young tree united with an old one, a stunted tree with a luxuriant one, and sometimes two or three trees which, in themselves, are ill-shaped, but, when combined, are pleasing. Inequalities of all these kinds are what chiefly give Nature's planting a superiority over art. The form of the foliage is another source of contrast. But, whatever beauty these contrasts exhibit, the effect is totally lost unless the group be well balanced. This is as necessary in a combination of trees as in a single tree. The group is considered as one object, and the support of the whole must depend on the several trunks and leading branches of which it is composed. Unless the group have suffered some external injury, it is seldom deficient in balance. Nature always conducts the stems and branches in such easy forms, wherever there is an opening, and fills up all with so much nice contrivance, and, at the same time, with so much picturesque irregularity, that we rarely wish for an amendment in her works. So true, indeed, is this, that nothing is so dangerous as to take away a tree from a group. You are liable to destroy the balance, which can never be restored.

From clumps the author proceeds to *park scenery*, which is generally composed of combinations of clumps, interspersed with lawns. When it consists of large districts of wood, it rather takes the name of forest scenery. The park, which is a species of landscape little known except in England, is one of the noblest appendages of a great house. Nothing gives a mansion so much dignity, nor contributes more to mark its consequence. The beauty of park scenery is best displayed on a varied surface, where the ground swells and falls, where hanging lawns, screened with wood, are connected with valleys, and where one part is continually playing in contrast with another. As the park is an appendage to the house, it follows that it should participate of its neat-

ness and elegance. Nature, in all her great landscapes, observes this accommodating rule. She seldom passes abruptly from one mode of scenery to another, but generally connects different species of landscape by some third species which participates of both. A mountainous country rarely sinks immediately into a level one; the swellings and heavings of the earth grow gradually less. Thus, as the house is connected with the country through the medium of the park, the park should partake of the neatness of the one, and of the wildness of the other.

The most natural inhabitants of parks are fallow deer, and very beautiful they are; but flocks of sheep, and herds of cattle, are more useful, and, in the author's opinion, more beautiful. Sheep, particularly, are very ornamental in a park. Their color is just that dingy hue which contrasts with the verdure of the ground, and the flakiness of their wool is rich and picturesque. They ought, however, to wear their natural livery,—not patched with letters, nor daubed with red ochre. To see the side of a hill spread with groups of sheep, or to see them through openings among the vales of trees, at a little distance, with a gleam of light falling upon them, is very picturesque.

The wild scenes of nature lastly occupy the attention of the author,—the *wood*, the *copse*, the *glen*, and the *open grove*. Under the term *wood*, he includes every extensive combination of forest trees in a state of nature, but defers the description of such scenes for the purpose of examining the smaller combinations. The *copse* is a species of scenery composed usually of forest trees, intermixed with brush-wood, the last of which is periodically cut down once in about fourteen years. In its dismantled state, nothing can be more forlorn than the copse. The area is covered with bare roots and knobs, from which the brush-wood has been cut; while the forest trees, intermingled with them, present their rugged stems, despoiled of all their lateral branches, which the luxuriance of the surrounding thickets had choked. In a very short time, however, all this injury is repaired. The next summer produces luxuriant shoots, and two sum-

mers more restore it almost to perfect beauty. We rarely expect more from the copse, however, than a shady, sequestered path, which it generally furnishes in great perfection. In distant landscape, the copse hath seldom any effect. The beauty of wood in a distant view arises, in some degree, from its tuftings, which break and enrich the lights, but chiefly from its contrast with the plain, and from the ground shapes and forms occasioned by the retiring and advancing parts of the forest, which produce vast masses of light and shade, and give effect to the whole.

From the copse he proceeds to the *glen*. A wide, open space between hills is called a *vale*. If it be of smaller dimensions, we call it a *valley*. But when this space is contracted to a *chasm*, it becomes a *glen*. A glen is, therefore, most commonly, the offspring of a mountainous country. The circumstances which form the glen, it is evident, admit of infinite variety. It may be more or less contracted. It may form one single sweep, or its deviations may be irregular. The most beautiful circumstances that attend the internal parts of a glen are the glades or openings which are found in it. If the whole were a thicket, like the full-grown copse, little beauty would result. An agreeable shade only, in that case, must satisfy our expectations. But the glen, whose furniture is commonly of more fortuitous growth than that of the copse, and not so subject to periodical defalcations, exhibits generally more beautiful scenery. Particularly it abounds with frequent openings. The eye is carried down from the higher grounds to a sweep of the river, or to a little gushing cascade, or to the face of a fractured rock, garnished with hanging wood, or perhaps to a cottage, with its scanty area of lawn falling to the river on one side, and sheltered by a clump of oaks on the other; or, still more beautifully, perhaps, the eye breaks out at some opening into the country, enriched with all the varieties of distant landscape, a winding stream, plains and woods melting together, and blue mountains beyond.

The *open grove* is composed of trees arising from a smooth area, which may consist either of pines or of deciduous trees.

The pine grove will always be dry, on account of the peculiar quality of its leaves; but, in lightness, variety, and general beauty, the deciduous grove excels. The open grove seldom makes a picturesque appearance. In distant scenery, indeed, it may have the effect of other woods; for the trees of which it is formed need not be separated from each other, but, being well massed together, may receive beautiful effects of light. When we enter its recesses, it sometimes wants variety. And yet, a walk upon a velvet turf, winding at pleasure among these natural columns, with their twisting branches, and their spreading canopy of foliage over the head, is pleasing, and, in hot weather, refreshing. Sometimes we find the open grove of natural growth. It is then more various and irregular, and a more pleasing scene. And yet, when woods of this kind continue, as they sometimes do in unpeopled countries, through half a province, they become tiresome, and prove that it is not wood, but variety of landscape, that delights the eye.

The pleasing tranquillity of groves has ever been in high repute among the innocent and refined part of mankind.

———Groves were planted to console at noon
 The pensive wanderer in their shades. At eve
 The moonbeam, sliding softly in between
 The sleeping leaves, is all the light he wants
 For meditation.

Indeed, no species of landscape is so fitted for meditation. The forest attracts the attention by its grandeur, and the park scene by its beauty; while the paths through the copses, dells, and thickets, are too close, devious, interrupted, and often too beautiful, to allow the mind to be at perfect rest. But the uniform sameness of the grove leaves the eye disengaged, and the feet, wandering at pleasure where they are confined to no path, want little direction. The mind, therefore, undisturbed, has only to retire within itself.

In the pristine ages of the world, the groves were the only temples in which the Deity was worshipped, and to this *templum nemorale* one of the earliest forms of the artificial temple seems to have been indebted. Many learned men

have thought the Gothic arch of the cathedral churches was an imitation of the natural grove. It arises from a lofty stem, or from two or three stems, if they be slender, which, being bound together, and spreading in every direction, cover the whole roof with their ramification. In the close recesses of the beechen grove, we find this idea the most complete. The lofty narrow aisle, the pointed arch, the clustered pillars, whose parts, separating without violence, diverge gradually to form the fretted roof, find there, perhaps, their earliest archetype.

The *forest*, which is the subject next considered, is an extensive wood, with all its natural accompaniments. There are few extensive forests that do not contain in them a specimen of every species of woody landscape. The wild forest-view, indeed, differs essentially from the embellished one, though we sometimes find even the forest lawn in a polished state, when browsed by deer into a fine turf, and surrounded by stately woods. Beauty, however, is not the characteristic of the forest. Its peculiar distinction is grandeur and dignity. 'The scenes we have hitherto considered are all within the reach of art, and, in fact, have all been the objects of improvement. But the forest disdains all human culture. On it the hand of Nature only is impressed. The forest, like other beautiful scenes, pleases the eye; but its great effect is to rouse the imagination.

The permanent beauties of a distant woody scene arise, first, from its form. There is as much variety in the form of a distant wood as in that of a single tree. We sometimes see continuous woods stretching along the horizon, without any break. All seems of equal growth; the summit of the wood is contained under one straight line. This, except in very remote distance, is heavy and formal. The shape of distant woods is picturesque only when it is broken by a varied line. This variation is, in some degree, occasioned by the different sizes of trees; but, as the size of trees, where the distance is great, has little effect, it is chiefly, and most essentially, occasioned by the inequalities of the ground. A line regularly varied displeases as much as an unvaried one.

Among the permanent beauties of distant woods may be reckoned, also, the various kinds of trees of which they are often composed. Unless the distance be great, this mixture has its effect in the variety it produces both in form and color. Large bodies of fir, also, and other species of pines, have often a rich appearance, in a distance, among deciduous trees, but they must be of the round-headed species. The spiry-headed race, the spruce fir, the silver fir, and the Weymouth pine (white pine), have a bad effect. Single, they are sometimes beautiful, but the author thinks they are never so in large masses. In general, however, the picturesque eye is little curious with regard to the kind of trees which compose a distant scene, for there are few kinds that do not harmonize together. It matters more, in this bold kind of landscape, that the masses of each different kind should be large. The opposition is then strongly marked, and the contrast striking. If different trees are grouped in small bodies, the effect is totally lost in distance.

POMOLOGICAL GOSSIP.

THE BARBAROSSA GRAPE.—Some time since we noticed the exhibition of two fine clusters of this grape before the Massachusetts Horticultural Society, from R. S. Rogers, Esq. of Salem. At a late meeting of the British Pomological Society, (Nov. 6,) a handsome bunch was exhibited, weighing *five pounds seven ounces*, (5 lb. 7 oz.) It is a popular and valuable late grape.

THE BOWOOD MUSCAT GRAPE.—This is a new variety, raised at Bowood, the seat of the Marquis of Lansdowne, between the Cannon Hall and the Muscat of Alexandria. It differs somewhat from both of its parents; although it is a week or ten days later in breaking in the spring, the fruit ripens rather earlier than the common Muscat. The bunches are broader and shorter; every bloom sets, even in a

temperature comparatively low. This is a marked feature, and the bunches are invariably compact, and regular in consequence, and must be well thinned out to allow the berries to attain their full size. The berries are oval; when grown in a light house we find them pear shaped, more than oval, large, and of a bright amber color when ripe. The habit is scarcely so vigorous as that of the common Muscat. It is very productive, there being frequently three and four bunches on a shoot. Such is the account of this variety as given by Mr. Spencer, the intelligent gardener. To this Mr. R. Thompson of the London Horticultural Society adds the following:—

This is a very fine thing and perfectly distinct. The bunch is very large and well shouldered, with strong footstalks. Berries very large, inclining to obovate, one and a quarter inches long by nine tenths of an inch in diameter; the skin is greenish yellow, or of the same color as that of the White Muscat of Alexandria, but it was evident that the berries had not acquired the color of complete maturity. The flesh is firm, juicy, with a rich sugary Muscat flavor: Seeds, 2—4. This variety, from its being an abundant bearer, and a free setter, forming magnificent well shouldered bunches, appears to be well deserving of cultivation.

The Editor adds: We have never seen a variety of greater promise. The appearance of the bunch and berries is most magnificent. The quality much the same as that of the Cannon Hall.

With such threefold evidence of the Bowood Muscat, it would appear to be a great acquisition, and destined to replace the Cannon Hall, the noblest of the Muscats, but too uncertain for general cultivation.

STOCKWOOD GOLDEN HAMBURGH GRAPE.—This is another new variety, said to have been raised from the Black Hamburg, impregnated with the Chasselas or Sweet Water. The growth of the vines resembles the male parent, but the foliage is similar to the Hamburg, being large, five lobed, with the veins and footstalks tinged with red. The bunch-

es are large, loose, branching and shouldered, varying from six to nine inches long, and the footstalks are short and stout. The berries are large and hang loosely on the bunches, an inch long, seven eighths of an inch in diameter, and of a uniform oval shape. The berry stalks are long, stout, and considerably warted. Skin thin, tender, of a pale yellow color, but, when fully ripened, of a pale amber. Flesh delicate and melting, very juicy, and remarkably rich and vinous.

Though apparently, from this description, a valuable variety, it is not so remarkable a seedling as the Bowood Muscat. It will be well, however, for our grape growers to give it a trial.

SUMMER VIRGALIEU PEAR.—In the summer of 1854, Mr. C. Downing sent us specimens of a pear under the above name, which proved to be a very fine early variety. We immediately inquired of Mr. Downing in regard to its origin. But he could give us no other information, than that it was sent to him from Dutchess Co., and that the name was probably a local one. He thought it a foreign variety, but from what reason he did not state, and he considered it distinct from any kind he had in cultivation. It is of medium size, and in appearance somewhat resembles the Julienne, though more tapering to the stem. We consider it an acquisition to our summer pears. It ripens the last of August.

THE WASHINGTON APPLE.—For three or four years a beautiful apple has been shown at the Exhibitions of the New York State Agricultural Society, called the Washington County Seedling, having originated in that county. It was of large size, remarkably beautiful, of the finest quality, and well worthy of extensive cultivation. Three years ago we made a drawing and description of it, which we intended to have published ere this, but have been waiting to add some account of its origin. Not yet having been able to do so, we briefly notice it now, and shall give a full account of it in our present volume. It is a late autumn or early winter apple, and a valuable addition to any collection.

THE ELM.

BY WILSON FLAGG.

NOTWITHSTANDING the many important defects of the American elm, I must confess that I partake of all the admiration, which it has so generally received in the New England States. To me no other tree seems half so beautiful or so majestic. It does not exhibit the sturdy ruggedness that distinguishes the oak; it is not so evidently defiant of the wind and tempest; it seems indeed to make no outward pretensions of strength and power of resistance; it bends to the breeze which the oak defies, and the resistance it makes against an assault, resembles that of the civilized captain, rather than that of the rude and ignorant soldier. The American elm, indeed, is a fair symbol of a well-bred New England country-gentleman, who has strength without rudeness, politeness without effeminacy, and courage united with a mild and gentle deportment. There are many such men among our intelligent yeomanry: and when I look upon a noble American elm, with its broad arms extended over whole roods of land, exhibiting outwardly the grace and pliability of the willow, while it possesses an inward strength and toughness that surpasses that of the oak, I am reminded of that combination of moral traits which are so pleasingly emblemised by this magnificent tree.

The elm is peculiarly a New England tree. It forms the most remarkable and the most distinguishing arborescent feature of our landscape. If there are in any other section of the country as many elms, they are mingled with the forest and are not conspicuous. In New England the elm has been planted and cherished from the earliest period of our history; and the inhabitants have always looked upon it with delight, and valued it as a landscape ornament above every other tree. Our soil is favorable to its growth, and the latitude of Massachusetts is the region in which it seems to be most abundant. Hence nature has assisted the efforts of the inhabitants in multiplying it over all our New England plains and valleys.

No species exhibits so great a variety of shapes in the manner of growth of different individuals as the white elm. In this respect the trees may be ranged under five different heads. The first, as Emerson has remarked, includes those of the vase form; the base of which is represented by the roots of the tree that project above the ground and join the trunk; the middle of the vase by the lower part of the principal branches, as they swell out with a graceful curve, where they emerge from the shaft, and then gradually diverge until they curve outwardly, and form a top encircled with the drooping spray of the exterior terminal branches.

The second division embraces those of the umbrella form, as represented in those trees which rise up with a single straight shaft to the height of thirty feet or more, and then send out a multitude of slender branches, diverging rapidly, and forming a convex and circular drooping head of branches and foliage.

Under the third head are comprehended the palm-shaped elms, found mostly among those which grew up in the forest, and were left in the clearing by the woodman. The shaft has acquired the length of fifty feet or more before it is subdivided, and the principal branches, instead of diverging at a wide angle, run up in close proximity to one another, until they suddenly spread out into a flat top of foliage and spray, bearing, at a distance, a strong resemblance to a tall palm tree. They are likewise often seen inclining a little from a perpendicular line,—a position which is frequent among palms.

The fourth division consists of the round-headed elms, which send out their branches very near the ground, and extend them forward in a more horizontal direction than is general, causing the head to be very nearly of a globular or hemispherical shape. The largest elms are included in this and the first division.

The most remarkable of all these varieties are those included under the fifth head, which resemble a single or compound plume. The trees of this division, instead of being repeatedly subdivided into branches, increasing in slender-

ness until they terminate in a long and drooping spray, are only once subdivided. The shaft runs upwards to the height of forty feet or more, and then sends forth from three or four, to eight or ten principal branches : but these branches remain single and undivided, and are covered on all sides with a fringe of vine-like branches of only a few feet in length and extremely slender, resembling a parasitic growth, and covering the whole tree with a wreath of vinery. It would seem as if the branches had been pruned of their proper and natural growth, and that afterwards some luxuriant vine had been trained from the root of the tree, upwards and outwards to the extremity of every limb. It may be remarked that elms of this shape have no spray. One of the most remarkable trees of this variety may be seen in the north part of Danvers, near the place where the Essex railroad crosses the Ipswich river. Sometimes the tree consists only of a single tall and slender shaft, without any branches, except two or three small ones at the top, and wreathed from the root to its summit with this peculiar embroidery, and representing one single enormous plume.*

This peculiar growth of vine-like branches may be seen garlanded around the trunks and lower branches of a great proportion of the elms in the interior, where the scraper and the pruning knife have not been applied to them, and early in summer it is highly ornamental in its appearance. But it seldom clothes the branches of a tree, except at the expense of what may be considered its normal growth. I have seen occasionally a pitch-pine tree wreathed in a similar manner. I know of nothing more beautiful in nature than this embroidery of the elm ; and I am at a loss to account for its effect on the mind, but it seems to have the same charms for every beholder. The effect does not arise from its singularity ; for the still more singular habit of those trees which have an inverted growth, like the weeping ash, is apt to strike the beholder with disgust, like all other monstrosities. The

* My attention was first directed to these varieties in the growth of the elm, by Mr. S. P. Fowler of Danversport, to whom the public has been indebted for many ingenious observations on the different branches of Natural History.

effect of this abnormal growth of the elm undoubtedly arises, in part, from our habit of associating the appearance with the idea of a bounteous and luxuriant vegetation, and with the little snug retreats which it affords to the smaller birds, whose nests are often enclosed within this tangled vinery.

It is not uncommon to hear an exclamation of regret that this custom of planting the elm should have been so universal in the New England States, and that other species had not been planted to an equal extent. If besides the elms already in existence we had also as many of every other species, we should have a sufficient cause for rejoicing: but I shall never lament that in the place of an elm we have an oak, a maple, or an ash. With all its defects of foliage it has charms unrivalled by any other tree; a variety in its forms not observed in any other species; a dignity which the oak cannot rival; a grace which the slender birch cannot surpass, uniting the lofty grandeur of the palm with the majesty of the cedar of Lebanon.

The elm, like other American trees, is not celebrated in history and romance. But though it has never been consecrated by the muse, or dignified by making a figure in the paintings of the old masters, the native inhabitant of New England associates its varied forms with all that is delightful in the scenery of his own land, or memorable in its history. He has beheld these trees forming many a noble avenue, when standing in rows in our villages, or by the rustic roadside: he has seen them extending their broad and benevolent arms as a protector over many a spacious old farm-house, and many a humble cottage, adorning alike the most rude and the most cultivated scenes, and equally harmonizing with all. He has seen them on public grounds of the city, with their ample shade and flowing spray, inviting the weary traveller to linger under their cool protection in summer; and in winter he has beheld them among the rude hills and mountains, like spectral figures stalking amidst their wintry desolation; and on the waking of the year suddenly transformed into towers of luxuriant verdure and beauty. Every

year of his life has he seen the beautiful hang-bird weave his pensile habitation upon the long and flexible branches of the elm, where it is secure from the reach of any living creature. From its vast dome of interwoven branches and foliage he has listened to the songs of the earliest and latest birds; and beneath its umbrageous canopy he has witnessed many a merry-making assemblage of village children employed in the sportive games of summer.

A remarkable trait in the character of the elm is, that, unlike other trees, it seldom loses its beauty by growing up in the dense forest. It is simply modified into a peculiarly slender shape, and is caused to assume the lofty attitude and feathery summit of the graceful palm tree. Its habit of putting forth at the termination of its shaft, whether it be long or short, a number of divergent and equal branches, causes it, even when crowded among other trees of the forest, to assume a shape that is always beautiful. Elms, therefore, may be left standing after the remainder of the wood has been cleared away, and still become finely formed and majestic standards in the course of a few years, differing from field-elms only by having a longer shaft. Other trees, as every one has remarked, when they have grown up in a forest, have nothing but a round head of branches at the summit of a very tall and awkward trunk.

The principal defect of the elm is observed in the latter part of summer, in the early fading of its foliage, and in the want of any remarkable beauty of tints in the autumn. Its foliage, early in August, begins to fade into a dingy green, and gradually turns yellow in September before it falls from the tree. But this yellow tint is never very brilliant or attractive. When the tree is completely disrobed of its foliage the elm again appears in all the graceful majesty of its form, surpassing in its denuded state almost every other tree of the forest. This beauty is occasioned by the great length and repeated subdivision of its branches, which run up at very acute angles near their junction, and bend very gradually until they form noble semicircular arches, and terminate in a long sweeping spray.

Very early in April the elm puts out its flowers, of a dark purple or maroon color, in numerous clusters fringing the long, slender terminal branches. They appear simultaneously with the bright crimson flowers of the red maple, and give the tree a highly beautiful, though not a brilliant appearance. As the leaves begin to sprout the flowers fade, and soon ripen their seeds, which are quite mature before the foliage is entirely expanded. The seed, called a *samara*, bears a general resemblance to that of a parsnep, and being exceedingly light is carried to great distances by the wind. During the month of June, soon after the leaves are expanded, the elm appears in its greatest beauty, and exhibits a very brilliant verdure. However defective its foliage may be in the latter part of summer, no tree surpasses it early in the season in the liveliness of its verdure, or in the luxuriant manner in which it is wreathed upon the branches, and falls in graceful drapery around the principal stem.

The slippery, or red elm, (*Ulmus fulva*) is inferior to the other in size, and has not in general its drooping habit; but it is a handsome tree, and remarkable, like the white elm, for the beauty of its spray.

The English elm (*Ulmus campestris*) differs exceedingly in its mode of growth from the American tree. It is never subdivided like the latter, but sends up a single shaft to its very summit, and gives out its branches laterally and horizontally like the oak. This habit gives it an appearance of stateliness which is not so apparent in the white elm. There is only one respect, however, in which the European elm is superior to the American species. Like all other European trees, compared with allied species belonging to the New Continent, it puts out its foliage earlier in the spring, and retains it later in the autumn. Indeed the hard frosts of November often scar the foliage of the English elms on the Boston Common before it is sufficiently mature to drop from the tree.

The Scotch elm (*Ulmus montana*) also differs from the others, with a more compact growth and very large foliage.

OUR ORNAMENTAL TREES.

BY THE EDITOR.

9. THE VIRGINIA FRINGE TREE. (*CHIONANTHUS VIRGINICUS*.)

HAVING in our articles in our last volume given a full account of several of the more rare ornamental trees of large size, we now continue our descriptions of some of the smaller growing species, or scarcely more than shrubs, which attain the height of 10 to 20 feet, but which include some of the most beautiful of which our gardens and pleasure grounds can boast. They are perhaps more generally useful than



I. THE VIRGINIA FRINGE TREE.

the larger trees, as they may become the ornament of every shrubbery, while the others reach so large a size, that they can only be introduced where there is abundance of space, on lawns or avenues, in belts for shelter, or in extensive plantations for picturesque effect.

The Virginia Fringe Tree, (FIG. 1,) is one of the most beautiful of all our larger shrubs or small trees, and deserves a prominent position in the grounds of all who appreciate

rich foliage, and fine flowers and symmetrical growth. In the former respect it almost rivals the Magnolia, having leaves of a very large size, while its long drooping panicles of snow-white, fringe-like flowers, displayed in profusion from its blunt erect shoots, give it an elegance possessed by no other hardy shrub.

It is a native of the Middle and Southern States, its northern limit, according to Nuttall, being the borders of the Brandywine, near Westchester, in the vicinity of Philadelphia. To the south it extends as far as Florida. It attains the height of 10 to 20 feet, with a diameter of 10 to 12 inches. In the Bartram Garden there is a specimen nearly a century old, which is 20 feet high, and 32 inches in circumference. In this neighborhood there is a fine old specimen at Pine Bank, the residence of E. N. Perkins, Esq., and another at Oakley place, Watertown. It is, however, rarely seen in the grounds of our suburban residences. It was introduced into England in 1796, and the largest plant, according to Loudon in 1835, was at Syon, which was only 10 feet high.

The Fringe Tree is of rather slow growth, with stout, blunt, pale colored shoots, and presents, when full grown, a roundish spreading top; the leaves are opposite, oval, pointed at either end, entire, green and smooth above, and, when under good cultivation, a foot long, and about half as broad; ordinarily they are 6 or 7 inches long, and 3 broad. The flowers appear in pendent paniculated racemes; the petals are narrow, and 6 or 8 inches long, which give them their fringe-like appearance. It blooms in June, and at that season nothing can be more singular and elegant. The blossoms are snowy white, and, when they fall, the ground appears covered with a carpet of white shreds. The flowers are often succeeded with the fruits, which are dark purple drupes, in clusters, and form a pleasing contrast with the deep green foliage, which retains its verdure till late in the autumn, when it changes to a yellowish hue.

The Fringe Tree is of easy cultivation, but thrives best in a deep, rich, and somewhat moist soil. Its foliage is then very large, and retained in perfection for a long period. In

light, dry soil it often curls up, and drops earlier in the autumn. It is usually raised from seeds, which are readily obtained, and is the best mode to increase it. It does not grow readily from layers, requiring three or four years before they root. It may also be grafted on the ash, as is practised in Europe, and when worked standard high, the specimens have a fine appearance. The seeds should be sown in light, loamy soil, in boxes, in the autumn, and have the shelter of a frame. They will vegetate in the spring, when they should be carefully tended during the summer, and protected again the next winter. In the spring of the next year they may be planted out in nursery rows, where they will soon make nice young plants.

As an ornamental shrub the Fringe Tree has few or no equals. Perfectly hardy, growing freely, and transplanting safely, with a foliage almost as conspicuous as the Magnolia, and retaining its beauty all the season, it should be introduced into ornamental plantations, and have a prominent situation on the lawn or near the house, where it will at all times be a splendid object.

Massachusetts Horticultural Society.

Saturday, Dec. 27th, 1856.—The adjourned meeting of the Society was held to day,—the President in the chair.

We have only room to give the reports of the Garden and Flower Committees.

REPORT OF THE COMMITTEE ON GARDENS, AWARDING PREMIUMS DURING THE YEAR.

The first visit was made April 24th to the grape-house of Mr. M. H. Simpson, Saxonville. Not being able to join the Committee on that day, we copy entire the notes kindly furnished us by another member:—

“The visit was made on a genial day for the season, and, in-doors, we found all as neat and well cared for as might be expected under the eye of so diligent a cultivator. Mr. Simpson is fortunate in the selection of so good a gardener as is Mr. Burns, one who is ever ready to carry out the wishes of his employer, however arduous the task allotted of constant watchfulness both day and night, for successfully, under the plan adopted by Mr. Simpson, of growing two crops a year, or three crops in two years.

“The grapery is seventy feet in length, divided by glass in the centre.

In the first house were the vines under our especial visit, having been started December, 1855. The wood, foliage, and grapes, denoted a healthfulness seldom surpassed in houses where only one crop a year is grown.

“Of the quality of the various varieties of grapes we speak from experience, having luxuriated on the product at a well-spread table, with the vines for a canopy, during the interim of a train of cars.

“Mr. Simpson is of opinion that there is no necessity for the customary period of rest for the vines, and that a period of three or four months is quite sufficient; and, acting on the suggestion of a similar period of rest for vines in Syria, he determined to adopt a course somewhat new. That he has successfully attained his object is evident to every visitor. Of its feasibility, from the enhanced cost of growing grapes to ripen in mid-winter, must alone be determined on by those who grow them as a luxury. Your Committee are ready to bear testimony to its having succeeded in the houses of Mr. S., and merely confine themselves to the plan adopted by, and in the houses of, Mr. Simpson, offering no recommendation for others to adopt a like undertaking, if they are disposed to count the cost.”

The second visit (May 30th) was to Salem, by invitation of our President, Hon. J. S. Cabot. Mr. Cabot received us, in his usual free and social manner, at the depot, from which we were conducted to his family mansion, a goodly structure of the olden times, with its gable roof and spacious hall, wearing the air of comfort and cheerful hospitality. Having partaken of the bounty and abundance of our host, we proceeded to the duties of our visit. Mr. Cabot's garden comprises about two acres, all under the neatest and most finished cultivation. It is, more especially, a *flower* garden, and in it the lovers of flowers and herbaceous plants cannot fail to receive gratification and enjoyment. The bed of tulips (some one hundred and twenty feet long by seven wide), with all the choicest varieties, was a special object of beauty and loveliness; and we could not but regret the absence of our Chairman (Hon. Samuel Walker), whose taste and love for the tulip stands preëminent. The display of pæonies, of various kinds, in large, distinct beds, was not, perhaps, any less attractive; and the pansies were so large and showy as to rivet the attention at once. The collection of shrubbery, plants, and herbaceous peonies, is very extensive, and many of them rare, including the varieties of Mr. Jas. Parmentier. We noticed the Trillium in variety; Phlox divaricata, Caltha palustris, Thalictrum, Anemonies in variety; also Hepaticas, and many others, too numerous to particularize if we could remember their names. The walks were very neat and spacious, edged with box, two years out, free from winter kill, and looking very thrifty and uniform.

The fruit department was not so extensive as we had expected to see, owing in part to the fact that another lot, at some distance (and which we had not time to visit), is appropriated to fruit trees, and also to the presence of large elms in the rear, on the outside of the garden, which extend their greedy roots in all directions, drawing all the moisture within their reach, and effectually paralyzing the healthy growth of fruit trees. It is true the flowers, plants, and shrubbery, did not show any evil effects, and the tulip bed was on the side nearest to the elms; but, at any rate, from some cause,

which neither Mr. Cabot nor ourselves could unravel, the pear tree did not flourish well with him, and many old standards seemed to be dying out. We noticed the same fact in regard to a garden adjoining, which formerly produced unsurpassed fruit, and whose proprietor had been noted for his enormous applications of manure. It is quite probable that the inordinate use of stimulants, at some former period, may in part account for the sickly appearance of the trees now. One of the most gratifying features in Mr. Cabot's garden was the entire absence of patches or straggling rows of seedlings. We like to see a gentleman's private garden unmingled with the nursery business; or, if he has a special fondness this way, for his own benefit and amusement, we like to see a spot by itself, appropriated to this alone, and, if *outside* of the garden, so much the better.

Having lingered long among the flowers, we next, by invitation of Mr. Allen, visited his graperies and lily-house. Mr. Allen's graperies have been so frequently visited and reported upon by former committees, and his fame is so extensive, we will merely remark that his industry and zeal are not one whit abated, as he gave us ample evidence in the rich show, under glass, of peaches, figs, and nectarines, besides his usual variety of the grape. Not an inch of ground is unimproved, and we even noticed tomatoes, to fill chinks. Perhaps the point of economy or profit may be nearest attained in this way; but, if we look to neatness and elegance of cultivation alone, we should say things had a crowded look, and needed more sea-room. We saw the vines which had been treated after Mr. Simpson's plan; but, whether from want of wool-waste, or other cause, the experiment did not work. It seemed to us that the difficulty of supplying sufficient nourishment to such a labyrinth of roots as there must be where vine and trees are so near together, might be one cause of failure. Mr. Allen is much interested in grape seedlings, of which he has quite a number, and we trust some of them will repay his labor. One important quality they certainly, thus far, manifest, viz., hardiness: standing side by side with the *Isabella*, which in some instances has been winter-killed, they remained thrifty and unharmed. Mr. Allen's lily-house having been described by Mr. Walker, in a previous report, the Committee will only remark that there are other objects of interest besides the *Victoria Regia*. Hanging on one side of the apartment, as you enter, is seen what at first sight might be taken for Indian trophies, or curiosities from *Herculaneum*, but which, on a nearer approach, we found to be old pieces of wood, from which grow out, like an excrescence, flowers or plants, drawing their only sustenance, apparently, from wood and air, entirely independent of Mother Earth, and adhering to the wood with as much tenacity as a barnacle to a ship's side. In the same tank with the *Victoria Regia* may be seen the African lily, and, in other parts of the apartment, various rare plants and flowers. The water in the tank looked green and slimy, like a stagnant pond; and the air, though warm, seemed damp and uncongenial. We took our leave of good old Salem in the five o'clock train, well gratified with our visit.

Our next trip was to Fall River, to visit the garden of Mrs. F. B. Durfee. Being the first invitation from a lady, the Committee felt much interest to

see how well a place could be cared for under her guidance and administration, and the result of the examination proved that woman's sphere need not be confined to any one department, but may, when necessary, extend to the soil and pleasure grounds, to which she can do ample honor. The grounds of Mrs. Durfee consist of about two acres, tastefully laid out, and combining most of the leading varieties of fruits and flowers, shrubbery and ornamental trees, grass-plats and banks, walks, hedges, and three graperies. The grounds are undulating and varied, with dense clumps of shade trees and shrubbery, and winding, circuitous walks, giving the appearance of a much larger place, and almost needing a pilot. The greatest point of interest and merit we found to be the graperies, and here it will be but justice to give great credit to Mr. Young, who has been gardener to Mrs. Durfee some nine years, and evidently understands his business thoroughly. The two graperies are forty-eight by twenty-four, span roof, moderate pitch, with twenty-four vines in each, and about twelve different varieties of grape, the Black Hamburgh predominating. In the forcing-house, the fruit was just in perfection, the clusters hanging in rich profusion; and the visitor, on entering, is at once impressed with the perfect order, neatness, and good management. Nothing seems crowded, each vine has space enough, and the eye rests upon no object to mar the beauty of a legitimate graperie. In this house, some five hundred pounds are cut yearly, some of the bunches attaining the great weight of five pounds two ounces, and the average usually weighing about two pounds. In the cold-house, the same master-hand is apparent, and the show of young fruit looked very promising. Besides these two, the old grape-house, of smaller dimensions, is still kept in use, and has in it a variety from Greece, the slips of which were sent home by Dr. King (name not recollected), of enormous size, rather egg-shaped, and resembling, some, the Black Hamburgh in flavor and color. All the vines looked clean and healthy. Mr. Young informed us that he used common house-soap in washing them, and never any other alkali,—that he took the entire care of the graperies himself, and carried the key in his pocket, where he could always find it. Having said thus much for Mr. Young's superior management of the grape, we must next do him equal justice for the neatness and perfection of his grass-plats and banks, showing a knowledge of lawns acquired only in the old country. Mr. Young does the mowing himself, using an English lawn-scythe, short, but broad blade,—cuts often, say every two or three weeks. He prefers the common street-sod, and, by using no manure or top-dressing of any kind (except when absolutely necessary, to arrest drought), he gets a soft, fine grass. The fruit trees were generally thrifty, but did not show (particularly the pear) that evidence of skill, care, and close pruning, so apparent in the grape-house, there being too much wood on many trees. We noticed some plum trees had been cut back, to get rid of the black wart, and new heads were growing, which, thus far, had escaped from it; but the pest will no doubt come again, and we still think the only remedy is to cut the whole tree down.

It would give us much pleasure to speak of the airy location and fine

views of the household, kind hospitality and generous entertainment, but this being no part of our province we must take our leave of our kind hostess, by assuring her, in the words of our Chairman, that "this visit will be among our most pleasing reminiscences." Having a little time to spare we made a friendly call on Dr. Durfee;—he not being at home we made a hasty examination of his garden, attended by his nephews, and found the peach-house sustaining its high reputation. These grounds having been visited last year and reported upon, nothing further need be said here.

July 24th. the Committee visited the residence of Mr. Charles Copeland, at Wyoming;—this lovely spot borders on, and overlooks on the west, the beautiful little lake called "Spot Pond," giving to the place that peculiar enchantment afforded by a near water view. The grounds contain between five and six acres artistically laid out, and under neat cultivation,—about half an acre, sloping to the north-west, and closed in with an Arborvitæ hedge, is devoted to a fruit and vegetable garden;—we noticed the pear trees were of the tall, slim kind, requiring stakes, and illy calculated for our high winds, besides the exposure of a long stem to winter frosts, and the heat of a scorching sun in summer;—the smaller fruits were abundant, and the fruit trees generally thrifty, and another year or two of growth with care and attention will add to the interest of this portion of the estate. At the lower end of the grounds stands a large hot-house with octagon ends; one of which is devoted to the Camellia, and contains several large and costly plants. We like this way of having things by themselves, and we noticed the flowers were planted out, each prominent variety in a bed by itself, where its beauty could be best seen;—on the borders, and some parts of the ground a greater licence prevailed, and fancy trees and shrubbery were intermingled with plants and flowers, and wanting only time and growth to give increased attraction. Mr. Copeland has a windmill on his barn, which operates a pump that forces water from the pond into a reservoir in the barn loft;—this water supplies a very pretty fountain near the hot-house, and also several jets about the grounds, and is very convenient for watering with a hose. The walks and driveway were neatly kept, and the lawns, grass plats, and flower beds, all in fine order; with so much natural beauty and variety of scenery, and a large amount of artificial and expensive aid, it was gratifying to see that the main chance was not lost sight of, and that economy and thrift was equally combined with a laudable ambition for taste and display. Mr. Copeland owns a farm of about seventy acres, a short ride distant, which he invited us to visit, but the day being very hot, and our business not being with farms, we merely rode to it, and under the shade of a large tree unanimously conceded that all was right on the farm, and expressed our willingness to return to the cool shade and comfortable seats we had just left.

Having some lovers and connoisseurs of stock among us we took a walk after dinner to the pasturage to see the cows;—they were fine specimens of natives and cross breeds, and good milkers;—the skim milk goes to the pigs, in the raising of which Mr. Copeland has been very successful, having sold about one thousand young pigs within the last two or three years of

the Suffolk breed, most of them for ten dollars a piece. We cannot close this brief notice without expressing the satisfaction and pleasure we experienced from the visit, and which we trust was mutual.

July 31st, the Committee visited two of the oldest and most famed seats in Massachusetts, viz., the Governor Gore estate in Waltham, and the "Oakley Place," or Pratt estate in Watertown. On entering these grounds the visitor is impressed with the vast space and grandeur of all around him;—the spacious lawns and noble forest trees of a century's growth, and the large and airy dwellings bespeak the olden times when land was sold by the foot only on the sea board, near the large cities. Our visit was more especially to the Governor Gore estate, now owned by Mr Walker, who had given timely notice (within our rules) for an official visit. Mr. Pratt had also expressed his desire to see the Committee, and we accordingly made him an incidental call on our way, and had time served should have been pleased to have made a more extended examination. It will be enough, perhaps, to say of this well known place, that it maintains, if it does not surpass, its long established reputation. We found the garden, the lawn, the conservatory, and the graperies, all in the finest order, and if there was any one thing more than another worthy of especial notice, it was the graperies and flower department;—the grapes hung in thick clusters equally dispensed, and the quality or flavor of the berries surpassed any we had this year eaten, owing partly, no doubt, to the high and favorable location of the houses, and the root borders being high above the level of the ground. A rich profusion of flowers ornamented the garden, and met the eye in all directions, and in the conservatory were many rich and fine specimens. It was very apparent that Mr. Pratt possessed a natural taste for flowers, and had gratified it to a liberal extent;—leaving to an editorial gentleman with us to do justice to the extensive views and natural beauties of this old and noted residence, we must proceed on with our notice to Waltham.

The Governor Gore estate, now owned and occupied by T. W. Walker, Esq., consists of some one hundred and forty acres;—about thirty-five acres of this, called "the manor," pertains to the mansion, and the rest is devoted to farming; a large portion of it is under tillage, and the rest in grass, grain and woodland. We must speak first of the manor lot, which comes under the head of Horticulture. This is divided into shade grounds, an extensive lawn, a large fruit and flower garden, greenhouses, vegetable department, with the usual walks, drive-ways, out-buildings, &c. The garden being large and roomy, the tastefully arranged flower beds and fancy walks showed to good advantage, and in better taste than when attempted on a smaller scale. In the centre of the garden stands a lovely little gem of an arbor or bower, of unique and most perfect construction, at once rural, artistic and appropriate. The flower beds were neat, rich and varied, and the grass plats in the garden short, fine, and well kept. The extensive lawn, sloping from the mansion to the road, Mr. Walker designs to bring into fine grass another year, and intends importing from England a newly invented machine for close cutting, gathering in, and rolling, all at the same

time. At the lower end of the garden is a hot-house, in which are some well trained fig trees, with a good show of fruit on them. On a high brick wall, and also on a circular trellis, were a number of trained pear trees; although neatly trained they did not (with one or two exceptions) look thrifty, nor were the varieties generally of the best;—they had evidently been sometime out, and probably had been allowed to bear too much in former years. In passing on to the vegetable department, the evidence of skill, care, and thorough knowledge, was strikingly apparent;—all the most choice vegetables were seen in high perfection, and the egg plants were especial objects of comment;—we ought, perhaps, to state here that Mr. Walker has been fortunate in retaining the service of Mr. Robert Murray, who has been Superintendent, and had the general care of the place for twenty-one years, and is a very industrious, intelligent, and zealous cultivator, as well as a capable and most worthy man. Did it come within our rules we could speak in detail of the good management and good order of the farm, and especially of Mr. Murray's system of accounts, but deferring this to the agricultural committee, we must leave it again to our editorial friend to speak of the many objects of interest about this rich old mansion, and of the social and happy hour, after our examination, passed with its generous owner.

The last visit (August 28th) was to the grounds and nurseries of the Messrs. Hovey, Cambridge. A pleasant ride on the horse-railroad took us near the residence of Mr. Hovey, and we at once commenced our examination. We first looked into the principal conservatory, a building 84 by 22, span roof, and devoted to pot plants, and also containing some thirty grape vines, which have produced this season from four to five hundred pounds of grapes. There are also three or four large conservatories used for flowers, pot plants, &c., all showing much care and attention;—some members of the flower committee present with us expressed much gratification with the flower and ornamental department generally. The healthy appearance of a fine collection of Camellias was especially noticed, as also the great beauty of the large beds of Japan lily, Verbenas, Phlox, &c., all of which were in fine order. We next proceeded, under the lead of Mr. Hovey, to an examination of the nursery (some forty acres in extent) with all things pertaining thereto, spacious walks, or avenues, and the borders lined with some twenty-five hundred specimens of pear trees, (about half of them on the Quince root) nearly all in a bearing state, and some of them handsomely loaded with fruit. The trees were mostly vigorous and thrifty, and many of them quite out of reach of the pruning shears or knife. We noticed many of the newer varieties in bearing, affording a fine opportunity for comparing notes, and forming a judgment which the pear growers among us seemed fully to appreciate. Having spent over two hours in making the rounds, we returned to the cottage well pleased with our examination, and satisfied that Mr. Hovey could not have much leisure time, superintending, as he does, personally, every department of his profession. At a table of refreshments, which Mr. Hovey saw fit to provide, we had the pleasure of tasting some twenty of the best varieties of the summer pear,

besides grapes, figs, &c. An hour soon passed in mutual improvement and social chat, and we took our leave. The invitation for this visit being late and informal, it will be considered unofficial, and without reference to a prize.

The Committee cannot close this report without expressing their high approval of this portion of the Society's labors. A spur and new life has been given to Horticulture, and a laudable ambition and emulation encouraged. The rich specimens of fruit which adorn our tables, and compete for the prizes, are now, in most instances, but fair and true representatives of the gardens from which they come, and need not be ashamed of the place where they grew. We are happy to believe that the pleasure and satisfaction of these visits have been mutual. Few persons are without the desire for praise or approval, which it is always a satisfaction to receive from those considered best competent to judge and having official position; the awarding of liberal premiums, and a careful inspection, when invited, of the numerous and increasing gardens dotted over this Commonwealth, may be justly considered a good substitute for an "Experimental garden," (one of the early objects of this Society) and perhaps is the best method of expending our funds for the promotion of Horticulture and improved gardening. The Committee respectfully ask for the ensuing year the further sum of fifty dollars to be added to the customary appropriation for gardens.

Respectfully submitted,

WM. R. AUSTIN, *for the Committee.*

The Committee make the following awards :

For the neatest kept, most attractive, and showy Flower garden, to Hon. Joseph S. Cabot,	\$20 00
For the second best, to T. W. Walker, Esq.,	10 00
For the best managed, most economically conducted, and well kept graperies, to Mrs. Durfee,	20 00
For the best cultivated and most luxuriant vegetable department, T. W. Walker, Esq.,	20 00
For the most economically managed, best cultivated, and most neatly kept pleasure grounds, to Chas. Copeland,	20 00
GRATUITIES.	
For the fine condition of his grounds generally, and especially for the graperies and flower department, to Geo. W. Pratt, Esq.,	20 00
To Mr. Young, Mrs. Durfee's gardener, for the fine and neat con- dition of his grass plats, lawns and banks,	10 00
To Hovey & Co., for their fine specimens of pears and strawber- ries, and splendid bed of Japan lilies,	20 00

REPORT OF THE COMMITTEE ON FLOWERS,

AWARDING PREMIUMS DURING THE YEAR.

CAMELLIAS.—For the best twelve varieties of cut flowers, to Galvin & Hogan,	\$8 00
For the second best, to M. P. Wilder,	6 00

OPENING OF THE HALL.

PELARGONIUMS.—For the best six varieties, grown in pots, to Thos.	
D. Halley,	\$10 00
FUCHSIAS.—For the best six varieties, in pots, to W. C. Strong,	
	8 00
CALCEOLARIAS.—For the best six varieties, to T. D. Halley,	
	5 00
For the second best, to Hovey & Co.,	3 00
For the third best, to A. Bowditch & Son,	2 00
CINERARIAS.—For the best six varieties, to Hovey & Co.,	
	5 00
HEATHS.—For the best varieties, to T. D. Halley,	
	6 00
GREENHOUSE PLANTS.—For the best display of not less than ten	
pots, to Hovey & Co.,	15 00
For the second best, to M. P. Wilder,	12 00
For the third best, to E. S. Rand, Jr.,	10 00
CUT FLOWERS.—For the best display, to E. S. Rand, Jr.,	
	6 00
For the second best, to J. Nugent,	5 00
For the third best, to T. Page,	4 00
For the fourth best, to M. B. Williams,	3 00
For the fifth best, to T. S. Whytall,	2 00
HYACINTHS.—For the best display, not less than ten varieties, to R.	
M. Copeland,	4 00
TULIPS.—For the best twenty distinct varieties, to Breck &	
Son,	5 00
PANSIES.—For the best twelve distinct varieties, in pots, to P.	
Barnes,	4 00
For the second best, to E. S. Rand, Jr.,	3 00
HAWTHORNS.—For the best display, to E. A. Story,	
	3 00
For the second best, to J. A. Kenrick,	2 00
HARDY AZALEAS.—For the best display, to Hovey & Co.,	
	6 00
For the second best, to E. A. Story,	4 00
For the third best, to J. A. Kenrick,	3 00
SHRUBBY PEONIES.—For the best six varieties, to M. P. Wilder,	
	5 00
For the second best, to J. S. Cabot,	4 00
For the third best, to J. Breck & Son,	3 00
HERBACEOUS PEONIES.—For the best ten varieties, to Hovey & Co.,	
	5 00
For the second best, to J. Breck & Son,	4 00
For the third best, to M. P. Wilder,	3 00
AQUILEGIAS.—For the best display, to E. S. Rand, Jr.,	
	5 00
For the second best, to P. Barnes,	3 00
For the third best, to J. Breck & Son,	2 00
PINKS.—For the best six distinct varieties, to J. Breck & Son,	
	5 00
For the second best, to P. Barnes,	3 00
HARDY ROSES.—Class I.—For the best thirty distinct varieties, to	
M. P. Wilder,	8 00
For the second best, to Evers and Bock,	6 00
For the third best, to J. Breck & Son,	4 00
For the fourth best, to Galvin & Hogan,	3 00

Class II.—For the best twelve distinct varieties, to W. C. Strong,	\$5 00
For the second best, to J. Breck & Son,	3 00
For the third best, to E. S. Rand, Jr.,	2 00
Class III.— <i>Hardy Perpetual Roses</i> .—For the best ten varieties, to J. Nugent,	5 00
For the second best, to Wm. J. Underwood,	4 00
For the third best, to Galvin & Hogan,	3 00
<i>Climbing Roses</i> .—For the best display, not less than six varieties, to J. Nugent,	5 00
For the second best, not less than four, to E. S. Rand, Jr.,	4 00
SUMMER PHLOXES.—For the best ten distinct varieties, to Hovey & Co.,	5 00
For the second best, to J. Breck & Son,	4 00
CARNATIONS AND PICOTEE PINKS.—For the best ten varieties, to A. Bowditch & Son,	5 00
For the second best, to Dr. C. F. Chaplin,	4 00
For the third best, to J. Nugent,	3 00
HARDY RHODODENDRONS.—For the best display of the season, to E. S. Rand, Jr.,	6 00
For the second best, to Hovey & Co.,	4 00
DOUBLE HOLLYHOCKS.—For the best twelve varieties in spikes, to Hovey & Co.,	5 00
For the second best, to P. Barnes,	4 00
For the third best, to J. Breck & Son,	2 00
DOUBLE BALSAMS.—For the best eight varieties, in spikes, to W. J. Underwood,	3 00
For the second best, to J. Nugent,	2 00
For the third best, to E. S. Rand, Jr.,	1 00
PHLOXES.—For the best ten distinct varieties, to Hovey & Co.,	5 00
For the second best, to J. Breck & Son,	4 00
For the third best, to J. Nugent,	3 00
GERMAN ASTERS.—For the best thirty flowers, not less than ten varieties, to Evers & Bock,	5 00
For the second best, to Hovey & Co.,	4 00
For the third best, to J. Nugent,	3 00
For the fourth best, to A. Bowditch & Son,	2 00
DAHLIAS.—Division A, Premier Prize.	
For the best twelve dissimilar blooms, to P. Barnes,	8 00
<i>Specimen Bloom</i> .—For the best flower, to H. K. Oliver,	3 00
<i>Various Colors</i> .—For the best yellow rose, tipped and striped, to H. K. Oliver,	4 00
For the best crimson; very dark; and scarlet, to Hovey & Co.,	3 00
Division B.—Class I.—For the best twenty-four dissimilar blooms, to P. Barnes,	7 00
For the second best, to H. K. Oliver,	5 00
Class II.—For the best eighteen dissimilar blooms, to P. Barnes,	6 00
For the second best, to H. K. Oliver,	4 00

HERBACEOUS PERENNIALS. —For the best display through the season, to P. Barnes,		\$8 00
For the second best, to E. S. Rand, Jr.,		6 00
For the third best, to J. Breck & Son,		4 00
For the fourth best, to F. Winship,		3 00
ANNUALS. —For the best display through the season, to P. Barnes,		8 00
For the second best, to E. S. Rand, Jr.,		6 00
For the third best, to J. Breck & Son,		4 00
For the fourth best, to W. J. Underwood,		3 00
FLOWERING SHRUBS. —For the best display through the season, to P. Barnes,		8 00
For the second best, to E. S. Rand, Jr.,		6 00
For the third best, to J. Breck & Son,		5 00
For the fourth best, to Galvin & Hogan,		4 00
BOUQUETS. —For the best display through the season, to J. Nugent,		6 00
For the second best, to Galvin & Hogan,		5 00
For the third best, to J. Winship,		4 00

* * The awards at the Annual Exhibition have been reported in our last volume (XXII.,) p. 480.

GRATUITIES FOR DISPLAYS AT THE WEEKLY EXHIBITIONS.

To Galvin & Hogan,	\$22 00
To Evers & Bock,	9 00
To James Nugent,	19 00
To Parker Barnes,	23 00
To Hovey & Co.,	14 00
To M. B. Williams,	7 00
To E. S. Rand, Jr.,	33 00
To Bonnard Dennis,	3 00
To Mary R. Richards,	3 00
To W. J. Underwood,	14 00
To R. M. Copeland,	4 00
To Curtis & Cobb,	1 00
To J. F. Allen,	10 00
To W. E. Carter,	6 00
To T. Smallwood,	2 00
To E. A. Story,	14 00
To J. Breck & Son,	15 00
To Thomas Page,	12 00
To C. F. Jones,	11 00
To Mrs. W. J. Underwood,	5 00
To George Dodge,	1 00
To J. S. Cabot,	2 00
To Mrs. Ashby,	3 00
To W. C. Strong,	7 00
To Annie C. Kenrick,	4 00
To Messrs. Burr,	3 00

To J. A. Kenrick,	.	.	.	.	.	3 00
To J. C. Chaffee,	.	.	.	.	.	1 00
To Miss Russell,	.	.	.	.	.	5 00
To E. G. Kelley,	.	.	.	.	.	1 00
To J. Hyde & Son,	.	.	.	.	.	3 00
To A. Bowditch & Son,	.	.	.	.	.	9 00
To H. Vandine,	.	.	.	.	.	2 00
To E. Stone,	.	.	.	.	.	4 00
To M. P. Wilder,	.	.	.	.	.	2 00
To Mrs. E. B. Grant,	.	.	.	.	.	5 00
To Mrs. Holman,	.	.	.	.	.	4 00
To Miss Sarah D. Fiske,	.	.	.	.	.	1 00
To F. Winship,	.	.	.	.	.	10 00
To J. McTear,	.	.	.	.	.	4 00
To Mrs. Chaplin,	.	.	.	.	.	2 00
To Public Garden,	.	.	.	.	.	1 00
To Miss Bird,	.	.	.	.	.	2 00
To Robert Murray,	.	.	.	.	.	2 00
To ——— Spooner,	.	.	.	.	.	2 00
To E. S. Holbrook,	.	.	.	.	.	1 00
To Bowen Harrington,	.	.	.	.	.	2 00

The floral displays of the season have been all that a successful commencement indicated. From the time of the opening of the hall to the annual exhibition no weekly display has failed to be such as not only to attract and gratify visitors, but also to reflect credit upon contributors and the Society. From season to season the marks of improvement are visible, and the production of seedlings, and the introduction of new plants, give evidence of a constantly growing interest and continued progress on the part of cultivators.

The displays of Roses, Phloxes, Asters, Dahlias, and especially of seedling Japan Lilies have been fine, and deserve commendatory notice. The change, which a few years has wrought in some of these flowers, has been both striking and gratifying. The extent of this change may be in some degree appreciated by contrasting the prize asters of only half a decade since, with the perfect and very beautiful specimens that this season filled the prize stands of the society.

Gratifying as the marks of progress may be, candor compels us to admit, that no inconsiderable portion of the merit is due to the skill of foreign cultivators. While we are availing ourselves of everything foreign, both of production and discovery, it is well to be watchful, lest we become too greatly dependant upon others, and forget our ability to accomplish something for ourselves. With every variety of climate, with taste combined with the ample wealth at our command, no reason exists why our own productions should not only bear a favorable comparison with, but even rival the best results of, foreign skill and experience.

Should the same liberal encouragement given by the Society for the production of new seedling fruits, be also given to our florists for the production of new seedling flowers, there can hardly be a doubt that it would be attended by equally gratifying results.

For the Flower Committee,

FEARING BURR, Jr., *Chairman.*

Horticultural Operations

FOR JANUARY.

FRUIT DEPARTMENT.

DECEMBER has been a cold and rather disagreeable month, with much cloudy and unfavorable weather for forcing. The latter part of the month was very severe. All out-door operations were closed early, and those who had not finished their autumn work have had no opportunity to do so. Fortunately a pleasant November left little to be done.

GRAPE VINES in the early houses will now be in bloom, and at this, the most critical season of the year, should have particular attention. The temperature should be as regular as possible, not too high, especially at night, and air should be admitted in good weather. Syringing should be dispensed with as soon as the flowers begin to open, but damping the floors and walks should be continued. Grape vines in the greenhouse now at perfect rest, should be cleaned, if not already done, and washed with oil-soap to destroy insects; they will then be in readiness to grow in February. See that the borders are well protected by a covering of manure.

PEACH TREES in pots may now be brought into the greenhouse or grapery, for early bearing. If they need larger tubs let them be shifted at once.

GRAPE VINES in pots may be introduced into the grapery, or greenhouse, for an early crop. Keep them freely syringed till all the buds are well broken.

SEEDS of strawberries, grapes, or other fruits, may now be planted in pots or boxes in the greenhouse.

SCIONS may be cut now whenever the opportunity offers, and packed away in earth or moss in a cool cellar.

PRUNING fruit trees may be commenced with the new year, and continued as leisure permits till the work is done. Where there are large collections of trees it saves valuable time.

FLOWER DEPARTMENT.

With the month of January the greenhouse assumes a gayer aspect, and by the close of the month many of the finest plants are in full bloom. The acacias, camellias, lauristinus, azaleas, and abutilons, among the more conspicuous, and the monthly pinks, primulas, verbenas, cinerarias, &c., among

those of lesser growth. The season brings with it an abundance of work. Seeds are to be sown, plants shifted and young stock propagated. Nothing should be neglected, and the careful gardener will forward everything as rapidly as possible.

CAMELLIAS will now be coming into full bloom. Keep them well watered at the root and freely syringed. Young plants may be repotted this month, and, if straggling or ill-shaped, may be headed in. Seeds may be planted now.

AZALEAS will begin to bloom: water more liberally, and syringe occasionally.

PELARGONIUMS now begin to push their young shoots; keep them near the glass in an airy situation, and water carefully at this season. Top the rapid-growing shoots for the last time, unless on late blooming plants.

CINERARIAS will need attention. Fumigate often to keep down the green fly which infests this plant more than any other. Repot as soon as the plants show that they need it.

CALCEOLARIAS will need another shift this month: keep them in a cool airy place near the glass, or they will run up too rapidly.

MONTHLY CARNATIONS will now be in bloom: such as need it should have a shift into the next size. Keep them liberally watered.

FUCSIAS may now be turned out of the pots, the earth shaken from the roots and repotted in light fresh soil: prune in the tops to make good shaped heads.

ACHIMENES and GLOXINIAS should now be potted, placing them in the warmest part of the house.

JAPAN LILIES will begin to grow soon, and should have a good situation where they will not draw up too fast.

PANSY seeds for early blooming may be planted now.

VERBENAS in pots may have a shift into the next size.

CHINESE PRIMROSES in small pots may be removed into the next size.

ROSES should be freely watered and often syringed. Fumigate for the green fly.

LANTANAS now beginning to grow should have a situation in the warmest part of the house.

SALVIAS, PETUNIAS, and other summer blooming plants may now be propagated for a spring stock.

HEATHS should have attention. Keep them in a cool and airy place. Young stock may be propagated now.

CACTUSES should be rather sparingly watered now, except the Epiphyllum tribe which are in a growing state.

WEIGELIA ROSEA, AZALEAS, and other plants, taken up in the autumn for forcing, may now be brought into the house.

RHODODENDRON seeds may be planted now.

ORANGE TREES beginning to grow, should be liberally watered, occasionally using liquid manure.

MR. SIMPSON'S GRAPE CULTURE.

A RECENT visit to Mr. Simpson's grapery to witness the successful result of two more crops upon his vines, on the plan which he has adopted in their growth, induces us to give some account of his achievements, and a brief review of the progress of grape growing during the present century; that we may be better enabled to judge of his success, and the benefits which similar management will confer upon the cultivation of this delicious fruit.

It is unnecessary for us to say that all we stated in our last article upon the subject, in our volume for 1856, (XXII., p. 153), has been more than accomplished. Then we were witnessing the product of the third crop upon the same vines within the space of two years; now we regaled ourselves upon that of the fifth crop, two having since been grown, one in September, and the other now mature. No diminution of vigor was observed either in the condition of the canes, the amplitude of the foliage and the abundance of the crop in one house, or the breaking of the vines for the sixth crop. All were stout, robust, and as redolent of health as any vines we have ever seen. Our visit was made on the 6th of January; the crop had been ripe for upwards of a month, the first bunches of the earliest sorts having been cut Dec. 3d, and those of the Syrian, the latest, not yet ripe. The Hamburgs and Frontignans were just in perfection, and better flavored grapes we have rarely, if ever tasted. They were plump, fresh, saccharine and rich: not soft and watery, as is too often the case, but with that brittle and crackling flesh indicative of the finest condition of this fruit. What surprised us was the intensity of color, for the black sorts were really black, and not red and green as more than two thirds of the grapes usually are. No summer ripened grapes were ever better and few as good.

The vines on which these ripe clusters were growing are

the same that we saw in fruit in March last, just ten months ago, and which were then scarcely ripe. In April the grapes were mature, and all were cut in May. The vines were then allowed their usual rest of four months, till the 15th of August, when they were started again with the result we have above given. This was in what Mr. Simpson calls the north-house, the range being divided transversely, in the centre, by a glass partition. The other vines were, at that time, just breaking, and the canes had not been tied up to the rafters. The crop was mature in August and September, and the vines allowed to rest; these were started Dec. 15th. At the period of our visit, January 6th, they were nearly in bloom; and the fruit will be ripe in April again. The morning of our visit the thermometer was at zero, and the temperature of the house was 60°. Such is a short account of the progress and present condition of Mr. Simpson's vines. The roots, which owing to the cold day we could not easily look at, Mr. Simpson informed us were in better order than they have ever been, and without this statement from him the vines themselves would be sufficient evidence of its truth. Thus while five crops have been taken from the vines in three and a half years, they have improved under this system, and show none of that decrease of vigor which so many old cultivators fondly anticipated would be the effect of the increased number of crops.

Mr. Simpson has, with great liberality, invited all who are interested in grape culture to examine his vines. Everything is submitted to their inspection, even to the condition of the border. His object is to show that what he has undertaken can be accomplished by skill, close attention and unremitting labor. He does not pretend to do it short of this: expense as well as any other consideration he has not kept in view, the actual demonstration of the system being his main object: its details and the best way of effecting it may afterwards be discussed and the most economical modes of proceeding put in practice. To grow a crop of superior grapes in our cold New England climate EVERY EIGHT MONTHS, on the same vines, is what Mr. Simpson

intends to show can be done with certainty and with success. His whole course of culture he has promised us when he can give the results of his sixth crop.

Passing from these details we proceed to review the modes adopted in England, where grape growing has been carried to such perfection, to procure grapes at all seasons of the year. To do anything like justice to the subject would require an entire number of our Magazine: we only intend to refer to some of the methods pursued to procure extra crops, that they may be compared with the plan adopted by Mr. Simpson; for though we are indebted to him for thoroughly establishing, beyond all doubt, the practicability of his system, it has been successfully accomplished before, though quite unknown to him; thus not only substantiating the feasibility of the plan, but setting at rest the fears of those professional or amateur cultivators who have predicted a failure from a course of culture so apparently contrary to the natural habit of the vine.

Under the older school of grape growers, of which the celebrated Spechly may be said to have been the father, forcing was rarely commenced before December, and the crop was usually mature in May and June. Loudon in his *Encyclopædia*, after summing up the views of the best cultivators says, "Attempts are made by bold speculators to lay forward for a crop in March, by beginning to force in August, and getting the fruit set before November; but such labor and experience is often lost!" The short days and dull weather of the British climate render such early forcing even more hazardous than with us; for though we have excessive cold to counteract, we are aided by brilliant sunshine, on which indeed rests in a great degree the success of the experiment. Consequently grape growers, who were required to have grapes through the winter, accomplished this by keeping one or more houses as backward as possible, allowing the vines to come forward with the natural season; and by selecting the late ripening and good keeping sorts were enabled to have grapes as late as February. As soon as the cool weather of autumn set in, ripening was accele-

rated by fire heat, and an equal and dry temperature kept up by which the fruit was preserved in good condition half of the winter. But later practitioners were not content with this mode of preserving grapes, and, desirous of having them with all the freshness of maturity, adopted various methods to accomplish this, all, however, upon the one crop system, but with different sets of vines for a succession.

One of these modes was to plant a row of vines on the back wall of the house, with a glass partition immediately in front, so as to shut them completely out up to the roof. These vines were the first ones forced. The wall was flued at top and bottom, and the vines were trained immediately under the glass. When forcing was commenced the partition was removed until the crop was ripe in April, when it was put up again and remained till December. The second crop came from vines planted inside of the front wall, and trained up the rafters; the fruit on these ripened in June and July, and as soon as the grapes were gathered the vines were taken out of the house, through moveable sashes for that purpose. The third crop was from vines planted *outside* the house and brought in when the last were taken out; the crop from these ripened in September and October, and the vines were taken out in December, when those growing on the back wall were forced again by removing the glass partition. This was one mode practised for some years at Hungerton Hall, in Lincolnshire. Another similar plan was practised at Essex for ten years with complete success, and three crops produced every year from three sets of vines. It only differed from the last in having the vines for the first crop planted inside of the front wall, which were forced in February. Those for the second crop were planted outside, and introduced in March or April. That for the third crop was from one vine planted at the end of the vinery outside, which was introduced in September, by removing the whole end of the house, as long laterals were trained down each rafter. Three hundred bunches of fine Hamburgs were cut from this vine in February.

Other methods have been given in the various gardening

journals of Great Britain, but they all follow the succession system, and no attempt was made to procure more than one crop a year till 1836, when Mr. James Waldron, gardener to the Archbishop of Armagh, described a plan, similar to that first suggested by Mr. Simpson, of growing two crops in one year. This Mr. Waldron actually did, and even more. We shall give his experiment in his own words, as detailed in *Loudon's Magazine* for 1836 :—

“I now send you a short sketch I promised you of my mode of treating the vines that were under my care at Elm Grove, Roehampton, and which produced two crops in the year. I shall not attempt to give a detailed account of the management of all the houses here, but I shall confine myself to two pits, each 52 feet long. When I went to Elm Grove, on the 15th of April, 1833, I found that my predecessor had been forcing the vines in these pits since November, 1832; and that the grapes in both pits did not exceed 5 lb. In November, 1833, I began to force the west pit, and by the end of March, 1834, I had a pretty good crop of grapes, according to the strength of the vines, fit to cut; and by the end of April all the grapes were gathered. I immediately threw open the west pit, after pruning the vines, and filled the border with night soil. About June the buds began to push, and they appeared strong. I then shut up the pit and gave very little air, and plenty of water, but no fire; and in December, 1834, I had a fine crop of grapes, fit to cut, and well colored; besides my vines having made good wood, and the other pit coming in, as before, in succession. In the autumn of 1835, I had another still larger crop of finer fruit, with better wood, and the other pit in succession; and if my employer had not been so very much alarmed at the expense of about £12 (\$60) for coals, I should have had another crop, fit to cut, this last February, which would have been four crops in one year and eleven months, and the vines as strong again as they were when I first had the care of them, and producing double the quantity of fruit.”

This, we should suppose, would be ample proof of the

capacity of the vine to produce at least three crops in two years, and is strongly corroborative of all Mr. Simpson claims for his system, now in the **THIRD YEAR**, with the **SIXTH** crop approaching maturity, without diminution in the quantity of fruit, or loss of vigor to the vines.

But, admitting that Mr. Simpson has shown beyond doubt that the grape may be raised upon his plan, say many cultivators, will not the expense be too great? Expense has nothing to do with the establishment of the important truth, which Mr. Simpson is laboring to prove, viz., that the period of resting the vine may be shortened *four months*. Yet, as the question naturally arises, it may as well be answered by simply stating, that on **NO PLAN** can ripe grapes be produced, in our climate, in the winter season, only at large expense. There must be a warm border, and whether this can be best attained by means of flues, wool waste, or horse manure, is merely a question of comparative cost.

The results, then, of Mr. Simpson's system may be summed up as follows :—

1. That he has proved the capacity of the vine for producing a crop of fruit every eight months.
2. That, in consequence of this, there is a saving of one third the time and expense in producing grapes.
3. That fruit of the very finest quality can be grown in our climate in the coldest winter months.
4. That, in accomplishing this, no other essentials are requisite but what are necessary to raise the grape in winter on the old system of one crop annually.

FRUITS AND FRUIT TREES IN MICHIGAN.

BY T. T. LYON, PLYMOUTH, MICH.

THE climate of central and southern Michigan is very similar, in most respects, to that of the famous fruit region of Western New York ; although, surrounded as we are by numerous and extensive lakes, we are perhaps liable to greater and more sudden vicissitudes. With the exception,

however, of the past two seasons, those variations have never been so great as to produce any serious injury, beyond the occasional loss or thinning of a crop of fruit ; while it is believed that our bright, warm summers are happily adapted to the production and development of a high degree of both color and flavor.

Morello cherries are everywhere cultivated, and with the most perfect success.

Dukes, also, appear perfectly hardy, although they are believed to have been but imperfectly tested.

Heart and Bigarreau cherries are more uncertain ; although trees of these classes, fifteen or twenty years old, are not uncommon. The chief difficulty in their way is, the bursting of the bark, and, frequently, the wood, also ; which is usually followed by the exuding of gum, and, finally, the death of the tree. It is observable, however, that it chiefly affects those that have previously made an inordinate growth, and, in consequence, have ripened their wood less perfectly. In all cases, however, it is observable that a wound, once opened, becomes annually larger, until the tree finally falls a victim.

This may fairly be supposed to result from the collapse occasioned by the severe cold of our winter, acting upon the newly-formed wood of the preceding summer, which, being resisted in the direction of the diameter by the more dense and mature heart-wood, must of necessity shrink in the direction of the circumference ; and, as the firmness of the wood increases toward the heart, the cleft often extends nearly or quite to the centre,—a fact of frequent occurrence among forest trees. It is further obvious that the wound, once opened, will be reopened each successive winter ; thus setting at naught the healing process, if, indeed, the exudation of gum were not, alone, sufficient to produce that effect.

The finer varieties of cherries are so imperfectly tested here, that the disasters of the past two winters, although certainly discouraging, can hardly be allowed to settle the case ; especially in view of the fact, that, prior to 1854, their success was apparently perfect, while so severe a

winter has not before occurred during the occupation of the country.

Past observation would seem to indicate that the probability of success would be increased by attention to the following particulars; viz., an *open, free exposure*, a *dry*, but *heavy*, rather than *light soil, low heads*, and a *moderate, healthy growth*.

The following varieties, with no essential difference in either exposure or soil, have suffered, with me, about in the following order, the first having suffered most, viz., Sweet Montmorency, Black Tartarian, May Bigarreau, Holland Bigarreau, Napoleon, China Heart, Flesh-colored Bigarreau, Elton, Bigarreau, Early Purple Guigne,—the last two having suffered but slightly. Many others have suffered, but the number of trees of each is too few to indicate fairly their relative hardiness.

Independently of the ravages of the curculio, the finer varieties of the plum are very liable to drop their leaves prematurely. Indeed, this often happens at so early a date as to injure, if not ruin, the quality of the fruit, as well as to seriously diminish the vigor of the trees. A limited observation would seem to indicate, that this malady is most troublesome in the wettest seasons; while liberal manuring has been known to secure an entire exemption.

The summer of 1855 having been unusually wet, the plum trees were stripped of their leaves earlier, and more completely than usual; and the present season has developed the fact, that nearly every tree that was so stripped has failed to withstand the severity of the past winter, while those not so denuded have escaped with comparative impunity.

Until within the past two years, peach trees, with us, have been considered entirely hardy; and trees can now be shown that have survived the hazards of nearly thirty years, while they are believed to be generally longer lived than is usual in the famous peach regions of the Middle States.

Our chief difficulty is the winter-killing of the fruit buds. The warm weather which we frequently experience in

autumn, after the trees are denuded of their leaves, is sometimes sufficient to stimulate the fruit buds so far that they fall an easy prey to the cold, or, perhaps, merely to the changes of winter.

During the past two winters, the mercury was repeatedly down to 20° or 25° below zero. The effect of the first of these winters was, to destroy nearly the whole of the previous year's growth, and so far to retard their starting in spring, that the subsequent growth was continued till late in autumn,—a difficulty which was aggravated by the unusual wetness of the season. Upon the heel of all this, came the past winter with redoubled severity; and the effect has been the destruction of probably one third or one half our peach trees, root and branch, while a share of the balance prove hardly worth preserving.

It is worthy of remark, that trees have escaped most perfectly in open situations, and on heavy soils.

Pears, whether upon their own or upon quince stocks, appear perfectly at home with us, and seem to enjoy an almost entire exemption from blight, whether of leaf or tree.

As evidence of the adaptation of our State to the growth of pears, it will be sufficient to point to the old pear trees (mementoes of a departed generation) which still dot the margin of Detroit river, and annually, as in the days of the old *habitans*, contribute their luscious fruits to the markets of our metropolis; and which may, with no great stretch of the imagination, be supposed to link us with the days of Pontiac and Tecumseh.

The old adage, "He who plants pears, plants for his heirs," still lingers upon the minds of many among us, and has doubtless withheld many from planting as freely as they would have done; but, in this respect, a new era appears to be dawning.

The pear has, probably, fewer *insect* enemies to contend with than any other fruit we cultivate. But dwarfs are frequently planted by inconsiderate cultivators upon our light, sandy, opening soils, without a thought that the quince, upon which they are worked, never succeeds without clay,

either naturally or artificially applied. Such experiments, of course, must end in disappointment.

Young pears appear to have suffered, in common with other varieties of trees, from the severity of last winter. Although standards have by no means escaped entirely, the effect is more observable among dwarfs, which, during the past summer, have in many cases put on a sickly appearance, and made very little growth; while some have died outright, and others still, in the course of the season. Trees suffering from this difficulty have generally shown no injury more than others above ground, while the heavy body of snow kept the earth, throughout the winter, entirely free from frost. It is difficult to account for this result, unless we suppose that, on account of the comparative feebleness of the quince stock, the dwarfs were less able to recuperate. In accordance with this hypothesis, it is observable that the difficulty has been more fatal among varieties of the greatest natural vigor. In an orchard of four hundred pear trees, half standards and half dwarfs, about ten per cent. will require replanting. The fruit buds, generally, were much injured; although Swan's Orange and Sterling bore heavy crops, and Le Curé, D'Aremberg, Winter Nelis, and others, more or less specimens.

NEW VARIETIES OF POTATOES.

BY J. F. C. HYDE, NEWTON, MASS.

THE following report upon several new varieties of potatoes, exhibited by Messrs. Hyde & Son, of the Walnut Grove Nursery, Newton, Mass., at the annual show of the Massachusetts Horticultural Society, in September last, was furnished at the request of the chairman of the Vegetable Committee, Mr. D. T. Curtis. It will be read with interest by all who appreciate the importance of cultivating the best varieties of this valuable product of our agriculture.—Ed.

DEAR SIR:—At your request we send you the following, concerning some of the varieties of potatoes shown by us at the late exhibition. We have for a few years been quite interested in the culture and improvement of this vegetable, and have produced many new seedlings, some of which are quite promising, and of which we may speak at some future time. Our remarks must necessarily be brief. First, in regard to the DAVIS SEEDLING, which is one of the most profitable and best for general cultivation. It yields well, and is of good size; does not rot much; requires a full season to mature. Color light red, white flesh; in shape nearly round. Should be grown largely for a winter potato for market, being far superior to most of the potatoes found in the market at this season of the year. The State of Maine is one of the best in quality, equal to the famous Carter; but, unfortunately, somewhat like it in another respect, being rather unproductive, unless in very rich soils. Shaped somewhat like White Chenango; white outside and in; more liable to rot than the Davis. Very dry and mealy, and of good flavor. Early.

JACKSON WHITE.—A comparatively new variety with us, but quite promising; early and fine; seeming almost, if not quite, equal to the Carter in quality, and far superior in productiveness. Thought by some to be identical with that sort. Worthy of trial.

WHITE CHENANGO.—An old and favorite sort with many, especially for early planting. Has rotted badly for several years past. It is a variety that cannot well be spared, though with us quite unprofitable for winter use.

POGIES.—A dark-colored variety, but really of good quality, and by some preferred to all others. Productive, and generally hardy. Color, blue outside and white inside, when cooked. Will not sell as well as a white potato. Late.

ST. HELENA.—We find this variety quite productive, of fair quality, good size, and with us not inclined to rot. Color white. Late.

CHURCHILL.—We do not consider this variety worthy of

cultivation, though productive. Flesh yellow, white outside. Often sold for State of Maine.

RILEY, DOVER OR WORCESTER SEEDLING.—This old and well-known sort is very fine, nearly equal in quality to the Carter, and more productive, though not by any means so productive as the Davis; not more so than the State of Maine. Color red; in shape nearly round; deep-sunk eyes; white meat. Late.

HILL'S EARLY.—An old variety, not much, if any, earlier than the White Chenango, and of ordinary quality. Should not recommend it. White.

STONE HILL.—Seedling of the above, and a better kind. Not so early, but more productive. Color white.

VERMONT WHITES.—A very poor variety, raised to considerable extent in the back country. Rots badly. White outside, yellow within. Not worth growing.

LADY FINGER.—An old sort, but a poor one; fit only for baking, and not worth growing for that. White.

BLACK CHENANGO.—A pretty good potato; keeps remarkably well; seldom rots. Color, outside nearly black, inside purple, which is an objection to it. Yields well. Late.

MEXICAN.—Handsome white variety; rots badly; should never recommend it.

LAPSTONE AND FLUKE KIDNEY.—Both these sorts we consider worthless. Yellow flesh; yield small, and rot badly. Imported from England two years ago.

JENNY LIND.—Large pink and white sort; quite productive; rather coarse, though raised by many for table use. Late and hardy.

RHODE ISLAND SEEDLING.—Resembles, and, we think, is identical with, the last named; same color.

NOVA SCOTIA BLUE.—This old sort is still pretty good, though it is subject to rot. Yields well. Color blue; white meat.

LONG RED.—This variety has somewhat improved, but we do not rank it very high. Has rotted badly.

PEACH BLOW.—This sort is grown in large quantities for Boston and other markets. It is a potato of passable quality.

Red outside and yellow within, when boiled. This sort should be displaced by the Davis, which it resembles somewhat. Yields and keeps well. Late.

PINK EYES, CALICO, ROHAN, IRISH CUPS, TRESMOTT, VETO, AND OLD KIDNEY, should all be classed as poor sorts, and unworthy a place even in large fields.

CALIFORNIA RED, WHITE CUPS, EARLY BLUE, AND CRISTY, are varieties of fair quality, but unprofitable; and therefore we should not recommend them.

We might speak of many other kinds that we cultivate, but it would be of little interest to the public. Of the many seedlings we have, we are in hopes to get at least one that will be superior to sorts now cultivated. In closing, we would recommend the Davis Seedling as one of the best kinds to raise extensively for the market, for a winter and spring potato. Not because it is of the very best quality, but because it is a *good* eating potato, and possesses all the other good qualities, being productive, hardy, of good size, &c. Next, we would recommend, for those who want a first rate potato, let them cost what they will,—the State of Maine, Carter, Riley or Worcester Seedling, and, perhaps, the Jackson White, after further trial. These comprise the best varieties known to us.

Care should be used in planting, as most persons are liable to seed too high with the State of Maine, and then complain that the potatoes are small. The Carter is unproductive, but fine. For stock feeding we should recommend the Jenny Lind. It is surprising that so many will raise such worthless sorts as Pink Eyes, Vermont Whites, &c., when there are so many better sorts that will yield as well or better, and bring a third more when they get them to market. May resume the subject at another time.

[The Worcester Seedling, so called, and recently introduced as a new potato, is one of the oldest sorts in cultivation; a gentleman of our acquaintance informs us that his father raised it sixty years ago.—ED.]

THE BIRCHES.

BY WILSON FLAGG.

ON the sandy plains of many parts of New England, some of the most conspicuous objects, in the winter season, are the coppices of slender white birch trees, frequently intermingled with the less graceful yellow pines. These trees are seldom more than three or four inches in diameter. They rise to the height of about twenty-five feet, with a greyish-white trunk, and a dense spray of slender, purple branches. This spray is full of pendulous aments, all ready to expand their flowers with the first warm days of April. The trees thus described are the common white or grey birch (*Betula populifolia*). They are well known to all persons, and may be considered a fair type of the Betulaceous tribe, being possessed of more of the peculiarities of the birches than any other species. This species is confined almost entirely to New England, where it is often called the grey birch, and sometimes the poplar birch. Its Latin name, *populifolia*, is derived from the tremulous habit of its triangular leaves, which closely resemble those of the aspen.

The white birch of this country is supposed to be identical with the European white birch (*B. alba*). It was probably brought from Europe, some centuries ago, by the early settlers of New England, and has not yet had time to spread beyond the limits of this section of the country. Another fact that serves to corroborate this opinion of its foreign origin, is the habit of this species of continuing in leaf some days longer than our indigenous trees in the autumn, and the very imperfect coloring of its foliage at this season. In this respect it bears no comparison with the Canoe birch, which is undoubtedly the true American representative of the European white birch.

The white birch is a tree of rapid growth, and highly worthy of cultivation for fuel, as it is very excellent for this purpose. Though incapable of affording so much heat as the heavier kinds of wood, it makes a firm and solid coal, and burns without any snapping. It also brings its own

kindling substance along with it, in the highly inflammable bark that covers it. But the great advantage of cultivating it for fuel arises from its rapid growth, and its singular thriftiness on the poorest sandy barrens. One who happens to be the unfortunate owner of many acres of such land, could make no more profitable use of it than to sow it with the seeds of the white birch. In ten years the plantation would be in a fit condition to be cut for fuel.

All the birches are graceful trees. Their branches are almost as finely divided as those of the elm, and many of them exhibit a similar drooping habit. They have a beautiful sweep, and a peculiar airiness in their feathery spray that renders them highly attractive. They are mostly northern trees, and are found in the highest latitudes in which any tree will flourish. The only species which are known in this section of the country, are the small white birch (*B. populifolia*), the black birch (*B. lenta*), the yellow birch (*B. excelsa*), the red birch (*B. nigra*), and the canoe birch (*B. papyracea*).

It is difficult, when describing the trees of our forest, to avoid lavishing a peculiar share of admiration upon the individual that forms the present subject of discourse, if it be one of the nobler species. So many of the most delightful scenes of nature are, in my own mind, intimately associated with the different kinds of birch trees, that there is not a single one that does not immediately call up some charming scenery, and impress my mind with the most pleasing poetic fancies. He who has been accustomed to ramble, has always had the slender white birches for his companions; they have been the silent witnesses of all his sylvan researches and his solitary musings; his social walks in quest of flowers, with the sex for whom the flowers were created; or with his male comrades, in pursuit of game. When journeying in a chaise or on foot, these graceful trees, in company with the fragrant yellow pines, breathing all the odors of Araby, have afforded him their benevolent shade; and, along the sandy plain, have defended him from the scorching heat of the sun, and have spread a verdurous canopy over

the rustic roadside. In the sultry heat of a summer noon-day, we have often followed the course of some humble cart-path through their recesses, gathering wild fruits from bush and bramble, or watching the singing birds that nestled in their retreats, and listened to their wild notes, that were blended in harmony with the sound of their green rustling leaves.

The black birch (*Betula lenta*), sometimes called the sweet birch, is known by its dark-colored bark, which has the pleasant taste and odor of the checkerberry, and by its general resemblance to the black cherry tree. This species has less of that leathery quality of the bark which distinguishes the tribe; but it is one of the most noble of the family, and often attains the height of seventy feet. It delights in moist situations, and selects for its location a rich soil on mountain slopes and the banks of rivers. When growing on a plain, or in an open space, it assumes a round-headed shape, with its terminal branches finely drooping, like the elm. This tree is conspicuous on the craggy precipices among the mountains, where it extends its roots into the crevices of the rocks, and spreads its branches over the chasms and hollows. In these situations it assumes many picturesque forms and attitudes, corresponding with the wildness of surrounding scenes. Nature has furnished this tree with a chaffy and winged seed, which is sowed by the winds in deep ravines and on inaccessible rocks, where the soil which has accumulated in the fissures supplies it with sustenance.

The black birch puts forth its blossoms very early in the spring, of a deep yellow and purple, and possessing considerable fragrance. Its foliage, which is of a fine verdure, appears early; the leaves are large, very finely serrated, and of an oval shape, with conspicuous veins. The leaves of this birch, though not so dense as those of some other trees, form, during the whole summer, a beautiful mass of foliage, which assumes a brilliant yellow tint in the autumn. This is the species which is the most extensively used in the arts. Its wood bears a strong resemblance to that of the cherry

tree in its hue and in fineness of grain ; and it is remarkable that these two trees, which have no botanical affinity with each other, should have a common resemblance both in their external and internal character. The geographical limits of this tree are wider than those of the other birches, extending from Nova Scotia to the Middle States and on the Alleghanics, as far as Georgia.

The yellow birch (*B. excelsa*) bears a strong resemblance to the preceding species in its manner of growth and in the character of its foliage and spray. It is distinguished from it chiefly by the glossy yellow hue of the bark that covers its trunk and principal branches. In this respect it is peculiar, and resembles no other tree. The effect of this silken bark is beautiful when the setting sun sends its horizontal rays through the forest pillars, and is reflected with lively, golden lustre from the trunk and branches of the shining yellow birch. As well as I can judge, this is a more slender tree, in every respect, from the boll to the spray, than the black birch, though it may equal or surpass it in height. I am surprised that it has not been more extensively planted by our roadsides. It seems to me, on account of its superior size, the large number of branches into which it is divided, and the flowing gracefulness of its spray, to deserve rank with the first class of ornamental trees.

The red birch (*B. nigra*) is known in Massachusetts only in one particular locality, which is on the banks of the Spicket river, and the neighboring swamps in Methuen. If you would see this tree in all its beauty, you must follow the streams that glide along the level morasses, where its roots are often inundated with water. Here it may be seen, like some pilgrim, bending worshipfully over the stream, from whose beneficent waters it derives its beauty and vigor. It has more picturesque attractions than the willow, which delights in similar places, on account of the greater variety of its forms, and the peculiar wreathing of its foliage around the stem.

The reddish color of the bark has probably given origin to the name of this species. It is a handsome, bushy tree,

of rapid growth, with foliage not strikingly different from that of the black and yellow birches. The lover of beautiful wood scenery would recommend the planting of trees of this species in those wet places which are now covered with alders. They would thrive luxuriantly in such places, and form a beautiful substitute for trees which are destitute of common value or attractions. Neither of the two American alders are worthy of preservation; but there is not a single species among our native birches that is not a beautiful, and, in many respects, a valuable tree. The red birch, especially, has singular properties, which would render it highly ornamental in wet and swampy lands.

The most celebrated of all this tribe is the canoe birch (*B. papyracea*). This tree grows in its perfection north of the latitude of Massachusetts. In this State are few trees above the middling size; but these are sufficiently large to suggest to the imagination an idea of their peculiar beauty and magnificence, when they have attained their full height and size. The foliage of the canoe birch is large, of a bright green, and exceeds that of all the other species in the depth of its golden coloring in the autumn. The leaves deviate a little from the ovate form, and approach to the heart shape, like those of the small white birch. The bark of this species is very nearly a pure white, and constitutes a very beautiful ornament to the trees. Their clean white shafts, like pillars of marble, towering upward among the other trees of the forest, present a scene with which nothing else is comparable. The uses which have been made of the bark of this tree are so numerous and so familiar to all, that it is needless to enumerate them; but it would be difficult to estimate its importance to the aboriginal inhabitants of this continent.

We are glad to see the claims of the birches to more extensive cultivation set forth by Mr. Flagg. Especially would we speak an additional word for the last named species, (*B. papyracea*.) No more beautiful tree grows on our landscape than this. A full grown specimen needs but to be seen, to render it ever after a favorite tree.—Ed.

THE ROSE.—No. 2.

BY PROF. C. G. PAGE, WASHINGTON, D. C.

A FEW remarks* only can be added on the systematic classification of the varieties of the Rose, the subject being deferred until another season shall have afforded more ample opportunities for observation.

Hardiness is an important characteristic, not only distinguishing certain classes of roses, but different varieties of the same class. The Remontants are, as a class, considered perfectly hardy in the northern and eastern states; the Bourbons next in point of hardiness; and the Teas, Bengals, and Noisettes, generally too tender to stand out, without special protection, in those states. But the intense cold of the winter of 1855-6, made some striking and important discrimination among the Remontants and Bourbons in the vicinity of Washington. At least ninety in a hundred of Remontants were *killed-in* to some extent, and many down to the snow level, while a few were not injured. I regret that careful observations had not been made, for roses that could resist such protracted and intense cold would be the safest to recommend for the highest latitudes of rose traffic. A few only were specially noted. Baron Prevost, Reine des Fleurs, Pius Ninth, Earl Talbot, Mrs. Elliot, Lane, Yolande d'Aragon, Lion des Combats, and Madame Laffay.—all good roses,—were all observed as not injured in the least. The favorites, La Reine and Geant des Batailles, suffered considerably. One Madame Laffay, twelve feet high, on a trellis in a bleak exposure, came off sound to the highest terminal buds; while a Princess Marie and Felicite Perpetuelle, both "*hardy*," (?) annual-blooming climbers, in a similar exposure, were cut down nearly to the ground. The Prairies, Boursaults, and Summer roses, generally, were unharmed. The Bourbons, Bengals, Teas, and Noisettes, were all more or less injured, and but for the protection of snow during all of the severest cold, a vast many of

* Continued from Vol. XXII., p. 516.

these latter, as well as many of the Remontants, would have been killed outright. That severe wintry ordeal "made the reputation" of one rose, hitherto but little cultivated,—the rose, *Enfant d'Ajaccio*, or *Souvenir d'Anselme*, classed among the Bourbons for want of a better place. Shoots of this rose, twenty feet long, upon a trellis, were uninjured, even to the terminal buds. Buist commends this rose in high terms, and Paul has well said that "*Gloire de Rosamene* suffers from severe frost, but its *progeny* is hardy." This proof of its endurance of cold will add one to its good qualities, and entitle it to a still higher rank in collections of good roses.

The hardness of Tea roses is quite circumstantial in this climate. They are winter or spring killed at times, when unprotected, chiefly because of their growing so late in the fall, and, in open weather, in the winter. It is generally advised not to transplant Tea roses in the fall, but I have seen it attended with salutary effects. A *Solfaterre* bush, transplanted in the fall, was uninjured by the winter; while another, of the same age and size, not removed, was killed to the ground. The effect of transplanting was to prevent winter growth. It will be seen from the above few observations, that the term "perfectly hardy," so often applied to some of our best roses, must be taken with allowance and caution, and that we need yet many observations, of a closely discriminating character, in respect to the relative endurance of the varieties and classes. *Cloth of Gold*, *Solfaterre*, *Lamarque*, and *Ophire*, and *Tea La Sylphide*, were almost exterminated from this region last winter; *Fortune's Yellow* was sadly mutilated; and *White Microphyllas* furnished cords of dead wood in the spring pruning. The new Tea rose, *Gloire de Dijon*, with its immense shoots of six and eight feet, proved as hardy as *Chinese Daily*; and, from all appearances, this variety will be found to excel all others of its class for wall growth in the greenhouse.

HOW TO TREAT THE OXALIS BOWIEI.

BY Q. Q., NEW YORK.

WHEN you copy from the "Gardener's Chronicle," *prune* him of his errors, as in your December number an extract from that generally very useful paper on the "*Oxalis Bowiei*," (sometimes called *O. speciosa*), where it is advised to pot and plunge them in bottom heat, and in June they will be in flower,—a very unnecessary procedure, and *contrary to their nature*, which is to flower in autumn. There is a great deal of quackery among the florist and gardening profession; but perhaps, in England, they, in order to make a display, employ five men to do one's work.

The method I have adopted for the last ten years, is to prepare in July a mixture of leaf mould,—woody peat, fresh loam, about equal parts, adding a little sand,—and, punctually, the first week in August plant some four or five bulbs in a small pot,—a No. 1, as it is termed hereabouts, and which holds a large pint; place the pots in an empty frame on a *north* exposure, where only the early morning sun reaches them; no sashes, as they enjoy the rain and dew. By the first of September you will find them above ground, and their after-growth is so rapid that in a short time the pots will be completely covered with their broad, luxuriant, clover-like foliage. As soon as the flower buds appear, remove them into the conservatory, or on the piazza, or let them remain out, as you fancy. Before the first of October they will be a mass of bloom; and I agree with your note, "This *Oxalis* is the finest of the whole family," for no description can do justice to their large and brilliant rosy-pink flowers. A large vase full, on a sheltered exposure, is perfectly charming. My lamented friend, the late Mr. Becar, used to prepare a little bed for them *out of doors*, under the window of one of his *Camellia* conservatories, where I have seen them, in September, all glowing in the morning sun, a perfect enchantment. Their growth *out of doors* is all over by the first of November, when take up and place away in dry sand. In pots, in doors, they continue

green longer ; but by Christmas the bulbs creep all away to the bottom of the pots, where they increase tenfold. May be left dry in the pots, on a secure shelf, clear of mice, until wanted again, 1st August, when turn out, divide, clean, and replant. They can be grown to any extent, if above treated ; and what so enlivens the declining year ! *O. versicolor*, *hirta*, *rubella*, *alba*, *caprina*, and other winter-flowering sorts should all be planted by the middle of August, and in soil as above. It is to be hoped more attention will be directed to this pretty class ; and as I have not any for sale, the observations are entirely disinterested.

This is the way we have always treated this beautiful *Oxalis*, and, during a period of twenty years, have never seen it in flower at any other season than that named by our correspondent. It was for this reason that we copied the article alluded to without remark, that it might be tried as a bedding plant. If a "little" forcing will do this, it will amply repay all the labor bestowed upon a gem so well worthy of any "necessary procedure" to obtain its brilliant flowers throughout the summer. Let the experiment be tried ; in the meantime, those who would possess it in perfection may follow the rules laid down for its growth by our correspondent.—Ed.

FLORICULTURAL NOTICES.

AZALEA AMENA.—This beautiful species is now in full flower in our collection, and proves to be one of the finest acquisitions to this showy and invaluable tribe. It is quite different from any of the older kinds in cultivation. In the habit of the plant it resembles *A. Danielsiana*, with slender branches and very small, ovate leaves. The flowers are also small, and of a rich crimson purple. Its peculiarity and dissimilarity is, that the calyx is of the *same color* as the flowers, which give it the appearance of being double (one

inside of the other), or "hose in hose," as is usually termed. The neat habit of the plant, and its delicate foliage, together with the deep crimson, unique flowers, abundantly produced, render it one of the most desirable additions to the greenhouse. It was introduced by Mr. Fortune from the north of China, where it grows at a higher elevation than any other Azalea, and in England it has proved quite hardy.

THE MONTHLY CARNATIONS.—Since the introduction of the new and more beautiful varieties of the Monthly Carnations, which display their blossoms throughout the year, they have become the most popular of greenhouse plants, and no collection can be complete without them. Heretofore we have, as with other new things, been indebted to French collections for our new varieties; and some very brilliant sorts have been received from this source.

We are happy, however, to announce that our cultivators are beginning to give their attention to this flower, and that some most beautiful seedlings have been raised by Mr. Perry, gardener to I. Sargent, Esq., of Brookline. For robustness of habit and freedom of bloom they surpass the imported kinds. Their colors are not so varied and brilliant as some, but their fragrance has no equal among them; partaking, as it does, of the order of the old clove pink, with which they are, undoubtedly, hybridized. Mr. Perry has named some of them as follows:—

Bunker Hill, a deep, rich, purplish flower.

Washington, very large, deep crimson.

Henrietta, blush striped with crimson.

Perry's Seedling, lilac striped with purple.

With these the foreign sorts may be hybridized, and, with a little care, our gardens may possess as fine a collection as can be obtained abroad.

JASMINUM NUDIFLORUM.—I noticed to-day a large climbing plant of this variety, in full bloom out of doors. It had a bleak western exposure, had encountered many nights of 26° to 28° Fahr. this season, and one of 18°, and yet the petals of the flowers are smooth and untouched. It is the most remarkable and enduring flower I have ever met with,

as the flowers were four to six feet from the ground.—
Yours, C. G. P., Washington, Dec. 16th, 1856.

340. ARGYREA HIRSU^TA *Wight & Arn.* VILLOUS ARGYREA.
 (Convolvulacæ.)

A hothouse climber; growing ten feet high; with lilac flowers; appearing in summer; increased by cuttings; grown in light, rich soil. *Bot. Mag.*, 1856, pl. 4940.

A beautiful and striking species of the tropical convolvuluses, with bright green, good sized leaves, peculiarly vil-
 lous stems, branches, petioles, &c., and ample, bright lilac
 corollas. It is a rapid grower, and flowers freely trained
 upon the rafters of the hothouse in the Kew Garden. In
 our climate it would probably flower freely during summer,
 planted out and treated like the *Ipomæa Learii* and other
 species. Its very downy foliage and very large flowers
 render it a desirable addition to our climbing plants.—(*Bot.*
Mag., Oct.)

341. LYSIMA^CHIA NU^TTANS *Duby.* DROOPING-FLOWERED
 LYSIMACHIA. (Primulacæ.) South Africa.

A frame or greenhouse plant; growing one foot high; with reddish-purple flowers; appearing
 in spring; increased by cuttings; grown in light, rich soil. *Bot. Mag.*, 1856, pl. 4941.

A very brilliant, half-hardy species of the well known
Lysimachias, of which we have several hardy garden kinds.
 This one is from South Africa, where it was found on
 marshy mountains, and introduced into England, where it
 blossoms freely in the open air in July, but the root requires
 protection in winter. The flowers are of a very bright red-
 dish purple, and they are produced in rather short, compact
 racemes. The leaves are opposite, lanceolate, entire, bright
 green. The root is perennial. It is a rich acquisition.—
 (*Bot. Mag.*, Oct.)

342. CODON^OPSIS ROTUNDIFLO^RA *Benth.* ROUND-LEAVED
 CODONOPSIS. (Campanulacæ.) Himalaya.

A climbing annual (?); growing six feet high; with yellowish-green flowers; appearing in
 summer; increased by seeds. *Bot. Mag.*, 1856, pl. 4942.

This is one of the beautiful plants figured by Dr. Hooker,
 in his splendid "Illustrations of Himalayan Plants." It is
 supposed to be annual, growing six to ten feet high, with a

small and neat foliage, and with rather large bell-shaped flowers, five lobed on the margin, of a clear yellowish-green tint, quite unique among more showy annuals. It is a most acceptable addition to our climbing plants. It was raised from seeds in the Kew Gardens, received from Dr. Royle, from Himalaya.—(*Bot. Mag.*, Oct.)

343. *ORO'BUS FISCHERI Sweet.* DR. FISCHER'S BITTER-VETCH. (Leguminosæ.) Russia.

A hardy perennial (?); growing six inches high; with purple flowers; appearing in summer; increased by seeds and division of the root; grown in good garden soil. *Bot. Mag.*, 1856, pl. 4943.

A pretty species, introduced from Russia through Dr. Fischer, who sent seeds to the late Robert Barclay, of Bury Hill. It is a plant, Dr. Hooker remarks, that deserves a place in our gardens, is perfectly hardy, and a free flowerer, and the flowers are highly colored. Its growth is erect and twiggy, with four-sided stems, very linear leaves, and axillary peduncles, bearing a raceme of eight, or ten, or more pendent, very bright purple red flowers. Easily cultivated.—(*Bot. Mag.*, Oct.)

OUR ORNAMENTAL TREES.

BY THE EDITOR.

10. THE SIBERIAN PEA TREE. (*CARRAGANA ARBORESCENS Lam.*)

THE *Carragana arborescens* is one of the most ornamental of the smaller growing trees which have found a place in our gardens. With the light and airy foliage of the Locust, it combines the golden tints of the Laburnum, while in the erect and symmetrical habit of its growth it surpasses either of these well-known and handsome trees. Rising with a straight, but short trunk, its branches, which divide near the ground, spread outwards in a slight curve, and give it that appearance peculiar to some elms,—the vase form—the most pleasing of all the shapes which the latter tree assumes. In

winter,—as at the present moment,—its neat yellow spray is the most attractive among many fine trees; in spring the soft glaucous hue of its early vegetating foliage is conspicuous among the naked branches of later growing kinds; in summer its innumerable yellow blossoms, scattered among its delicate pinnate foliage, give it the aspect of some tender exotic; while the profusion of its long and slender seed pods, which line its erect shoots, continues its attractiveness till autumn touches it with a chilly hand, and changes its soft green tints to the yellow hues of surrounding trees.



2. THE SIBERIAN PEA TREE.

The Carragana (FIG. 2), is one of a family of small trees, or low shrubs, peculiar to the cold regions of Siberia and Eastern Russia. Loudon in his *Arboretum* enumerates a dozen or more species, all, except two or three, being natives of those countries. Only four or five of them have, as yet, been introduced into our gardens, and these quite recently, with the exception of the Carragana arborescens. The latter is by no means a common tree, though not so rare as the others. The largest specimen we have ever seen is in our own collection, planted fifteen years ago, and now some

fifteen feet high, and otherwise proportionally large and handsome. It was introduced to England in 1752, and the largest specimen around London was at Syon, which in 1838 was eighteen feet high.

The *Carragana arborescens* is found in its native locality in woods and on the banks of rivers, and in the latter place grows to a good size, but in more arid situations it is only a small shrub. Its growth is rather stiff and upright. The leaves are abruptly pinnate, with four to six pairs of oblong villous leaflets. The flowers which are bright yellow and pea shaped, are axillary, one on a pedicel, but usually several in a cluster: the pods oblong taper, containing three or four seeds. The wood is hard, compact, and tough, yellow on the outside. The buds vegetate very early in the spring, and the flowers appear in May and June, succeeded by the seeds which remain in the slender pods till fully mature, when the latter split in halves, twist into fantastic forms, and let them drop upon the ground. Its average growth is less than a foot a year.

The Siberian pea tree is one of the very hardiest of trees, coming as it does from so northern a latitude. It never suffers by our winters, nor fails to give an abundant bloom, and on this account, as well as its highly ornamental character, deserves a place in every shrubbery. It is also of the easiest cultivation, growing anywhere, but only arriving at a good size in a strong and rich garden soil. Its propagation is simple: it may be raised from seeds which ripen in abundance, or it may be increased by cuttings of the roots. The seeds should be planted in autumn, or in spring, in the same manner as the Three-thorned Acacia or Locust, in a light mellow soil. After the second year they may be transplanted into nursery rows, where they may stand till required for planting out to their final situation. Cuttings of the roots, planted in beds of light soil, covered an inch or two, soon make young shoots which may be treated the second year like the seedlings.

The *Carragana arborescens* is not only as we have shown, a most beautiful and desirable tree, but it is also valuable as

a stock upon which to graft the smaller growing sorts, and unique weeping varieties, standard high: the latter are among the most singular and delicate of pendulous trees, and introduced sparingly as single objects, either upon the lawn or in the pleasure ground, add greatly to the interest and effect of every ornamental scene.

General Notices.

GARDENS AND GARDENING AROUND PARIS.—The following account of the Gardens around Paris is by Mr. H. Bailey, gardener at Nuneham, Eng. He will continue his remarks, which we shall copy if as interesting as the present notice:—

Having lately made a journey to the French capital, and had an opportunity (through the kindness of my respected employer) of seeing the Royal and the best market gardens, with the nurseries and seed establishments there, I venture to commit to paper a few notes which I hope may prove interesting to the readers of this periodical.

I had gone to Paris with the idea that we English gardeners were a long way behind our ingenious neighbors, and had much to learn from them, but I now think very differently. The productions which so largely fill our markets, the beautiful Spring Lettuces which come here in the fullest perfection long before ours are ready, these, with many other things, have excited our surprise and made us feel almost ashamed at being so much in arrear; but when we come to know that in the climate of Paris, at M. Vilmorin's, Thunbergias were ripening their seeds in the open air, and also the different kinds of Maurandia, it needs no great stretch of imagination to conclude that they have a far better climate than ours.

They have a great advantage over us in the dryness of their climate, being upon the chalk, and when the sun shines that luminary has much greater power, which must very materially aid them in the management of the cloches, or bell-glasses, under which their fine Lettuces are grown. I give them the greatest credit for their assiduous ingenuity in the management of these; but fully think it impossible to succeed in our constantly moist climate as they do with them.

Judging from the fine fruit which I saw in the shop of M. Joret, in the Rue Marché St. Honoré, and also at Versailles and Fontainebleau, I should say they are very good Pine growers. They cultivate the young plants principally in beds prepared for them, without pots, and fruit them in very small pots considering the size of the fruit produced by them. They seem to feed the plants much by a large supply of ammoniacal gas, fruiting

them over a chamber filled with hot dung, and plunging them in a shallow bed of tan.

In Vines they do not shine at all as we do; no such Grapes as English gardeners produce are to be met with. Here are none of those fine, fleshy, delicious Muscats, or Hamburgs, that were shown at the meeting of the London Horticultural Society the other day. Their only well grown Grape is the Chasselas de Fontainebleau, which, at that place, covers a wall 1300 yards long, and from 12 to 15 feet in height. The vines when I saw them (the 18th of October) were loaded with produce, fully ripe over the whole of this space: they were of the richest amber color, and were in fact delicious in taste, and most inviting to behold. The Chasselas, thus ripened, is one of the very best of grapes, but such as these are not met with in any quantity in the markets; those are smaller and much less ripe; but from such grapes and a piece of bread many a Parisian workman makes his dinner. They are grown for the market at Thoméry.

In French gardens the vines are trained on a low trellis, and when they want to force them a frame is placed over them about 3 feet 6 inches high at back and 1 foot 6 inches in front. It is made of old ship timber, not painted, and a dung lining surrounds this economic structure, which has as well two flat copper pipes along the front for heating. Unlike good English gardeners in the present day, they do not force the same portion of the trellis in successive years; but if this piece is forced this year, another is chosen for the next year's crop. I think they are wrong in pursuing this antiquated notion, as there can be no doubt that all plants which are forced soon acquire a habit of pushing their buds at that particular period of the year at which they have been excited. I could not help smiling, therefore, when gravely assured that this resting was an element of their success.

In Figs they do not seem to shine so much as they ought to do; I saw only some small green ones, not over ripe, in M. Joret's shop.

Their Pears are truly magnificent. I saw Crassane, Passe Colmar, Duchesse d'Angoulême and Beurré Diel prodigiously fine, particularly the Crassane, which was of an exquisite flavor too.

In the way of Vegetables, magnificent Cauliflowers were hawking about the streets, as were also Peas, in the middle of October. Fruit of the purple Egg Plant, called Aubergine, were on sale for culinary purposes, and the seeds of Haricot Beans, about three parts grown, were exposed under the name of Flageolets. I saw the Dioscorea after the second year of cultivation little better than we have it in this country, and they say it is of no use without two years' growth in Paris. If, as experience proves, it is so shy, we may take our leave of it as an article of staple food, and it will only serve to make a dish at the tables of the wealthy portion of society. Magnificent Cardoons were to be seen in all directions, as well as Escarolle, the Batavian Endive, beautifully blanched; but their chief point of excellence is their cultivation of Asparagus. M. Joret had some of the finest Asparagus I ever beheld. Its culture is a specialité into which I felt much interest in making inquiry. It is managed thus:—

The ground is deeply trenched with a most abundant addition of the best

rotten dung from old Melon beds. It is then divided into beds, about 3 feet 6 inches, with alleys 2 feet 6 inches in width. In March they plant their roots 20 inches or 2 feet apart in the row, and the usual routine follows till the next autumn, when the bed is liberally manured and deeply covered by the mould from the adjoining alleys. Thus excavated they form a receptacle for hot dung, with which they are filled as the produce may be required; the beds being covered with their small frames, which are about the width of the bed. These beds produce the *Asperges blanches*, or large white Asparagus.

The beds are not cut previously to being forced, and those who desire to have this excellent vegetable in its full perfection, must give it special culture. The system of forcing old roots from beds which have been long in cutting can only disappoint those who expect fine produce. Indeed this plant seems simply to require a deep and rich soil, an abundant space between the plants, and a three years' course of this before cutting the shoots. In the market gardens around Paris both Celery and Cardoons are blanched by filling up amongst them with long dry stable litter, of which large stacks meet the eye on entering the grounds. The Cardoons are planted about four feet apart on the flat surface, and are entirely filled up with this material. I saw this in the grounds of M. Chevalier, at La Chappelle, whose quarters of Cardoons were wonderful to behold.

Perhaps it is one of the strangest things that they have not a morsel of curled Parsley in their gardens; it is all as perfectly plain as the wild plant, and looking to the fondness which the French evince for decoration, one wonders at this.

It is usual with market gardeners, who are obliged to crop heavily, to manure heavily also. But I have never seen soil so rich in manurial matters as the Paris gardens seem to be.

It being the middle of October I had an opportunity of seeing the very interesting process of planting the Lettuces under the cloches or bell-glasses of which Dr. Lindley gave some account in a former number of the *Gardeners' Chronicle*. A sloping bank is formed for the purpose, the soil for which is almost entirely composed of well-rotted manure from the old Melon beds; nothing could in fact be lighter or richer than it is; each bank is made 6 or 7 feet in width, and the glasses are placed in rows close together. The Lettuce plants which are raised under one or more glasses are now most carefully transplanted, putting 32, to be again thinned to 8, and finally to 1, under each glass. The success with which these are cultivated is very great, and they supply the English markets long before we get them. In severe weather straw mats (made from Rye) are placed over them, and great vigilance is used in giving and taking air. But their sheet anchor is the dryness of their climate, wanting which I do not think the same results could be obtained in this country, however indefatigable we may be.

I had expected to have seen the Chinese Yam producing very fine large tubers in this "land of the sun," but was truly disappointed when I saw that the roots were not bigger (after two years' cultivation in M. Vilmorin's

garden) than those I have at Nuncham. I noticed a pretty pyriform Tomato in that garden, and the Chinese Radish, of which I bought seeds.—(*Gard. Chron.*, 1856, p. 836.)

Gossip of the Month.

THE BLACK GUM TREE, (*Nyssa sylvatica*).—Dear Sir:—When our esteemed friend, Hon. Samuel Walker, was making us a brief visit last fall, he was struck with the beauty of the tree above named. A tree very much neglected, probably from the same *common habit* of looking abroad for ornaments to our grounds instead of our native forest.

In referring to MICHAM, (who I just learn is no more with us, his noble spirit having departed to a higher sphere of labor,) I observe that he ascribes its northern limits to the *Schuylkill*; and by no means does justice to its great beauty, confining his remarks to the inappropriateness of the name. On its location, the peculiar character of the wood and its uses, truthfully enough; but he unfortunately overlooked the *splendor* of its *foliage*, and this especially in the Autumn. He probably made his observations on the foliage from dried specimens, and never saw the tree when decked in its autumnal grandeur, or his enthusiastic spirit could hardly have avoided an exclamation of surprise and admiration.

The tree is of medium growth. In the forest where crowded (apart from the foliage,) its form and outward appearance has no particular attractions, but when grown in the open ground, with room to develop, it branches low in such situations, extending at right angles from the body and finally assumes a drooping position, forming a most beautiful rounding head. The foliage is dark green, thick, and with a shining, glossy upper surface. In the latter part of September and October it assumes varied shades of brown and red to a bright scarlet, presenting at a distance a most animating and grand sight, as that of a tree covered with gorgeous scarlet flowers. The sight is often so grand that the passer-by is involuntarily brought to pause to admire.

Such is the Black Gum tree of our forest. What would an Englishman give could he transfer such a tree to his park, with the assurance of retaining its autumnal grandeur in his more humid climate? Yet we at home neglect its propagation, and that of others of our splendid forest trees, and import from abroad, at great cost, inferior articles to adorn the pleasure grounds and parks of our country.

I thought as this tree is not indigenous so far north, and yet perfectly hardy, and no doubt will flourish with you, a few seeds for distribution among your members would not be unacceptable. I therefore embrace an opportunity to forward to George A. Otis, Esq., No. 1 Boylston Place, a small package, which you will have the goodness to call for and present to the Society in my name, being careful to try some yourself.

The seed, as you will observe, is hard and will require the action of the

winter's freezing, or other means, to prepare them for vegetation. If treated as Peach or Cherry seed are, I doubt not they will readily vegetate.—With great respect, I remain yours, A. H. ERNST, Cor. Sec'y Mass. Hort. Soc. Cincinnati, Ohio, *January 20th, 1857*, in a letter to DR. E. WIGHT, Cor. Sec'y Mass. Hort. Soc.

LARGE CROP OF GRAPES.—At the Convention of the Fruit Growers of Western New York, held at Rochester on the 7th of January, various subjects were discussed, among which was that of hardy grapes. Mr. Barry called upon Mr. Johnson, who resides in the neighborhood of Mr. McKay, of Naples, a successful cultivator of grapes, to give the meeting some information of his mode of culture, profits, &c.

“Mr. Johnson had been interested with Mr. McKay in the culture of the grape. He pruned very close every season, and trained his vines on wire trellises some seven feet high. The lower branches were trained very near the ground. The vines were one rod apart each way, making one hundred and sixty to the acre. He thoroughly manured. The fruit ripened every season perfectly. The soil is gravelly, with a clay subsoil, and a north-western exposure. The product is about \$1,200 per acre. Mostly sold at 15 cents per pound.”

This amount would require 8000 lbs. to the acre, or about 200 bushels—equal to one and a quarter bushels to each vine; certainly a very large crop.

It will be noticed that McKay “thoroughly manures,” as indeed he must do so to sustain such a crop. In this respect his practice is quite unlike that of Mr. Brackett, detailed in another page, who objects to all manure in the culture of the grape.

Much interesting information was given on other subjects, which we shall allude to again.

THE SEASON OF 1856 AT UNION SPRINGS, N. Y.—December 1855 was very mild until the 24th, when the temperature was 26°, and it was down to 32°, or below it, every day until April 3d, being 101 days.

It was below zero, January 5th, 4°; 9th, 4°; 20th, 4°. February 3d, zero; 13th, 6°; 14th, zero. March 9th, 4°; 10th, 2°.

April was cool, with 11 days' rain or snow. May, cool and very wet; 16 days' rain. Temperature average of the month 63°. June warm and very wet until the 20th, with 11 days' rain; then clear until the 30th; then heavy rain, 79°. July very hot, with 11 days' light rain, 46°. 5'. August very warm; light rain 12 days, 80°. 5'. September very warm, 11 days' rain; 7th, at 92° rain; 10th, at 90° heavy rain.

October warm; 11 days' rain, 74°. November warm and pleasant for the season; 4 inches snow, 29th. December has been very severe, with high winds and great and sudden changes. 9th, at 2 o'clock, temperature 30°; at 7, down to 8°, (22° in 5 hours); 11th, 48°, rain; 18th, 6° below zero at sunrise, 6° above at noon, 6° below at sunset; 20th, 42°, rain; 31st, snow storm. Temperature at noon 32°.

Cherries were plenty, very large and fair; other fruit generally scarce, yet we had some trees heavily laden with peaches and plums, of the first quality; the hot weather in September ripening them to perfection. One large tree near the lake, produced the heaviest crop of Apricots that I ever saw. The cold, wet weather, in many cases, was more destructive to the curculio than to the fruit.—*Yours, J. S. ALLEN, January, 1857.*

Societies.

ILLINOIS STATE HORTICULTURAL.

A meeting of the Fruit cultivators of Illinois was held at Decatur, on the 17th of December, when a State Horticultural Society was organized, and the following officers elected:

President.—DR. E. S. HULL, Alton.

Vice Presidents.—R. W. HUNT, Napierville; W. H. MANN, Bloomington; L. SHAW, Tremont; WM. STEWART, Payson; S. Francis, Springfield; DR. KELL, Paris; JOHN P. REYNOLDS, Salem; DR. CONDEN, Jonesboro'.

Corresponding Secretary.—A. B. GALUSHA, Lisbon.

Recording Secretary.—JAMES STARR, Alton.

Assistant Recording Secretary.—F. H. PHENIX, Bloomington.

Treasurer.—DR. B. F. LONG, Alton.

A State with such a soil and climate as Illinois should have a Society like this, and we look to valuable results from its organization, and the energetic gentlemen who compose its officers.

FRUIT GROWERS OF WESTERN NEW YORK.

The annual meeting was held at Rochester, on the 7th of January, when the following officers were elected:—

President.—JOHN J. THOMAS, Union Springs.

Vice Presidents.—ASA ROWE, Sweden; H. R. NORTON, Brockport; E. C. FROST, Catherine.

Secretaries.—J. B. EATON, Buffalo; H. E. HOOKER, Rochester.

Treasurer.—W. P. TOWNSEND, Lockport.

Executive Committee.—P. BARRY, Rochester; T. C. MAXWELL, Geneva; H. E. DICKINSON, Lyons; W. R. SMITH, Syracuse; P. R. FREEOFF, Auburn.

Chairman of County Committee.—P. BARRY, Rochester.

A small, but fine, exhibition of fruits was made, as follows:

From A. Corey, Penfield, 20 varieties of apples and Isabella grapes, From R. H. Brown, Greece, 20 varieties of apples. From John Parks, Yates, 16 varieties of apples. From J. B. Johnson, Naples, 18 varieties of apples, and Isabella and Catawba grapes. From J. Nelson, Brighton, 3 varieties of apples. From L. Barber, East Bloomfield, a seedling apple

callen the Golden Goss. From T. C. Maxwell, a large red apple, supposed to be a seedling.

From Ellwanger & Barry 23 varieties of pears, among which were Josephine de Malines, Doyenné d'Alençon, Winter Nelis, Jean de Witte, Bezi d'Esperin, Bergamotte Cadette, Glout Morceau, Pound, Catillac, &c.

Massachusetts Horticultural Society.

Saturday, December 27th.—The adjourned meeting of the Society was held to-day,—the President in the chair.

During the year the following members have been elected:—Isaac Cary, Boston; J. D. Harvey, Cambridgeport; J. C. Bachi, R. W. Holman, and J. W. Jenks, Boston; F. Winship, Brighton; E. W. Buswell, and Wm. Curtis, Boston; Wm. M. Chase, Fall River; C. F. Curtis, J. V. Wellington, M. P. Kennard, and F. W. Lincoln, Boston; H. G. Peters, Southboro'; J. F. Braldee, Boston.

The several garden, flower, fruit, and vegetable Committees, made their reports for the year, which were accepted and ordered to be published.

The President, M. P. Wilder, and Capt. Austin, were chosen a Committee to settle with Mt. Auburn Cemetery. Meeting dissolved.

REPORT OF THE COMMITTEE ON FRUITS,

AWARDING PREMIUMS DURING THE YEAR.

The Committee on Fruits present to the Society a report of their doings for the past year, feeling that this is not the least of the departments under the supervision of a Society established for the public good. And, as they make record, from week to week, of their doings, it is for the dissemination of good to all, especially for those who cannot be present to witness the rich display of choice specimens of fruits offered, not only from the immediate vicinity, but often from thousands of miles within our outspread country—including Kansas, California and Oregon. In this way, we are enabled to compare specimens and quality, and judge of such varieties as have a local habitation; and it will not be denied but that there are some fruits which do better in the section in which they originated, while it is admitted that others may be improved by a change of location, though this seldom happens; yet the Bartlett (and some few varieties of foreign origin,) a widely disseminated pear, seems to find in this country a more congenial climate than in the place of its origin. The apples grown in Kansas, as presented for exhibition here, were mostly varieties which had originated in this section, such as the Roxbury Russet, Baldwin, Hubbardston Nonsuch, &c., and though somewhat increased in size, they were equal, if not superior, to the same varieties grown with us.

Of the fruits shown as grown in Oregon, we would specially mention the

Gloria Mundi (Monstrous Pippin of Coxe,) as exhibited by Daniel Demy, on account of its monstrous size, viz., 2 lbs. 5½ oz. avoirdupois weight. Specimens of the Sparhawk, weighing 37 oz., grown in Alabama, were shown by Messrs. Hovey, and, notwithstanding the size, (27 oz.), was so much increased over those grown in the locality of its origin; the flavor was not any the less agreeable.

We are constantly receiving accessions of new fruits, particularly of the apple, such varieties as are coming into existence as seedlings, or those which have only been known in the particular vicinity of its origin, and from year to year are being disseminated and brought to notice through some horticulturist. Under the head of Apples, we would mention as promising well, the Washington, a handsome autumn fruit, and the Polish, a late autumn or winter variety.

And were we going into a recommendation of some of the older varieties, we should bespeak a place in the smallest collection for the Fameuse, which is *always* good, from the first dropping to its latest keeping, unsurpassed and admirably adapted for the table or kitchen.

Notwithstanding the scarcity of apples in general the past season, there has been but a slight falling off of contributions either at the weekly or at the annual exhibition, and of specimens nearly equal to any former year. We wish space would allow us to speak of some of the choicest specimens shown during the year, but can only mention the Ladies' Sweeting, as shown by F. & L. Lovett, with the view to speak of it as one of the best known varieties for a sweet apple. It proves a good bearer, with few of under size, keeping well till into May.

The Foster apple, ripe in August, as shown for several years by J. W. Foster, is a superior sweet apple and worthy general cultivation. Not having been able to identify it with any known variety, the Committee have given it this name.

Pears will probably hold a preëminence with the public as well as the amateur, and the time has already arrived when we are not obliged to depend solely on those of foreign origin, for we could name at least a dozen varieties which are in no way inferior to the same number originating in other countries, viz., Sheldon, Lawrence, Brandywine, Boston, Seckel, Tyson, Andrews, Lodge, Kingsessing, Howell, Oswego Beurré and Adams.

In the belief of many, we shall do as well to rely mainly for a certain returnable crop of pears, on varieties originating with us. There are those who, either as a matter of necessity, of business, or as amateurs, will always cultivate varieties which can be counted by hundreds, and it is well for us who can only grow a limited number, that there are persons who can afford and are willing to pass through all this vexation, and it would be as well that we might profit by their failure of a return commensurate with the outlay. A beginner generally makes a mistake in desiring to grow too great a variety—such as he has seen described with high encomiums, instead of relying at the outset on some horticultural neighbor who *has had experience*, perhaps at an outlay of funds and temper for the meagre return of years of toil.

We would, therefore, say to a beginner, calculate the number of trees you design setting out, the proportion for season of ripening, whether as dwarf or standards, then consult one of known judgment, who has had experience and mainly rely on his judgment, which will probably avail much, enabling him to come at once in his outlay to a satisfactory result.

A few of the varieties which promise well and maintain a high character, we would mention: Beurré de Wael, Beurré Sterckman, Beurré Clairgeau, Beurré d'Anjou, Retour de Rome, Charles Van Hooghten, Comte de Flanders, Sterling, Gideon Paridant, Abbot, Beurré Superfin, Doyenné Boussock, Pratt, Beurré Kennes, Nouveau Poiteau, Fondante de Malines, Conseiller Ranwez, Kirtland, Seckel, Beurré Langelier, Emile d'Heyst, Calebasse Delvigne, Pie IX., St. Menin, Philadelphia, &c.

Of seedlings, of recent introduction, which bid fair to hold a conspicuous position, may be named the Shepherd, Dana's No. 16, Dana's No. 12, and Dana's new Seedling, shown this year for the first time.

The contributions of grapes raised under glass have been liberal, and in nearly all cases well grown; coming mainly from houses long established, though many have been offered from houses of recent introduction, but following closely on to those of not so recent a date. The Committee having availed themselves of duties jointly assigned them with the Garden Committee of visiting the various graperies and fruit gardens in this vicinity, are ready to confirm all that has been said in their Garden Committee Report; begging leave to state that the amount appropriated in that department of your Society is well applied in the way of gleanings valuable information for this Committee.

The visit to the grapery of M. H. Simpson, Saxonville, seemed more nearly connected with this department than any other, that we took special cognizance of all matters; to the novel mode adopted as the "*Simpsonian*" plan of cultivating two crops in one year. That Mr. Simpson has been eminently successful we have had ample proof, and he is deserving of all honor which may be attached to so prosperous an issue against the fearful odds attendant thereon. Nearly all his friends predicted a failure of crops, ruination of vines, and a heavy outlay devoid of a return. Even his gardener (Mr. Burns) was of like opinion with the multitude. Yet against all these odds which Mr. S. had to contend with, he persevered, (his gardener against his own convictions was assiduous in carrying out his employer's plan,) and success has attended as Mr. S. *alone* predicted it would. Our visit was made on the 24th of April 1856, at which time we found a luxuriating crop, on vines which were started December, 1855.

And from the same vines which gave the crop in April, Mr. Simpson made a liberal display on the third Saturday in December, 1856.

The Macready's Early White were cut as early as December 3d; the vines had a period of rest from April to August, when bottom heat was applied and a produce of about ten pounds to the vine was the result. Having visited the grapery, we found the vines in the best possible condition.

Under the head of Hothouse Grapes the Committee have the pleasure to incorporate a communication from J. Fisk Allen:

SALEM, December 30th, 1856.

To the Chairman of the Fruit Committee of Mass. Hort. Society.

Dear Sir:—In my reply to your note last year regarding grape culture in this vicinity, mention was made of the Black Barbarossa as having fruited in the graperly of R. S. Rogers, Esq.

This present year this vine has again fruited, and you have had bunches of this crop exhibited upon the tables of your Society. It is proper now to state, that this variety has been fruited two seasons in the neighborhood of New York, and that good judges pronounce the grape identical with the Prince Albert.

There are other vines of the Barbarossa in this vicinity—one small bunch, of a very few berries, was produced upon one vine. The Prince Albert has been extensively planted in forcing houses in this State, and the vines have been removed on account of their unfruitfulness. In my retarding house it has usually yielded well, bearing large, long bunches, of two to four pounds weight. This year, it had not a grape or a blossom, and a vine still retained in the forcing house for experiment, has not shown a fruit cluster for years. The vines of the two, if not identical, have the same uncertainty of crop.

The fruit grown on Mr. Rogers' vine resembles the fruit shown by myself, for many years, under the name of Bishop. This is an uncertain bearer, fruiting on alternate years.

There are three grapes which have a very singular mode of growth, the Prince Albert, the Bishop, and Red Lombardy. If the Barbarossa is a distinct variety from Prince Albert, then there is a fourth. The Queen of Nice occasionally exhibits a tendency to the same growth. All these grapes are late, requiring one to two months longer season than the Black Hamburgh, and great heat to mature them in perfection.

These can be readily distinguished from the hundreds of other kinds, when in growth, by this singularity: the point, or termination, of all the young shoots being *turned down*, as if held in check by a rein. The Prince Albert has this peculiarity to the greatest degree, and the Barbarossa is so entirely like, that I can see no reason for believing them distinct. The vine alluded to as bearing only a few berries had a cane of large size, the whole length of the rafter, in full health, and showing a correct picture of the Prince Albert and of its customary barrenness.

Possibly the vines in New York are not true Barbarossa. If the vines were selected when in growth, this peculiar habit may have led to error.

Probably another season will settle the question. In the meantime, as the vine is an uncertain bearer, it will be well to be cautious in planting or propagating it.

Seedling grape vines multiply so rapidly, that it would require a large space and more leisure than I am possessed of even to name them. The Rebecca is the best that has come under my observation the past year; the fruit superior to the Diana, which is generally esteemed the best flavored native grape yet fairly tested. Should this prove hardy in our climate, it will be received as a great acquisition.

Mr. Edward Rogers, of this city, has a large number of hybrids, which have fruited this past season. The mammoth Globe Grape, fertilized by the pollen of the Chasselas and Black Hamburg, was the method employed in producing them. Black, red and white fruit, in fine formed bunches, is the result, and ripening early. The vines were spotted some with mildew, and another year will test their quality. They are perfectly hardy.

Several of my own hybrids have proved perfectly hardy, and fruited this year in open culture. No. 19, a round, black grape, I thought quite good, others closely resembling the Black Prince, with the sharp, acid flavor of that variety; still others, the fruit of which was eaten by the robins as soon as colored, and before they were fully ripe. The white, known as Allen's Hybrid, has been allowed to bear a full crop this year, under glass. The result was entirely satisfactory; the fruit ripening the first of August and keeping well three months upon the vine. A few bunches cut remained in good condition three months longer. This vine survived the past severe winter in open culture. The purple, No. 8, fully sustains its promise of being valuable as a later fruit, coming into eating some weeks after the white.

The weather in April and May was cold and wet; this caused an unusual bleeding of the vines in open culture. More injury was done the vines from this protracted bleeding, than has ever before been noticed by the writer. The terminal buds on the spurs, and many of those on the long canes, were destroyed—apparently poisoned or corroded by some substance in the sap. On the recurrence of fine, dry weather, the flow of sap would cease, when the shoot or branch would appear as if whitewashed. Notwithstanding this unfavorable spring, the heat of July and the mild weather in October matured a fine crop of grapes where the vines were not injured by the cold of winter. Under glass, a full crop was also matured.

The mildew seems to be the great drawback to the successful culture of the grape in this country. Under glass, where it has been more and more troublesome from year to year, (in my houses,) it has been entirely subdued by constant applications of sulphur applied early to the floor of the house, and repeated as often as it was washed in by water or disappeared by evaporation. In the open garden it has been more than ever troublesome in this vicinity, appearing in June and reappearing on every wet and foggy term even into October, a space of four months. Formerly, its occurrence was confined to July and August. The application of sulphur and lime water to the foliage by the syringe, or garden engine, will destroy it at once. This must be repeated as often as occasion may require. I find the application of dry flour of sulphur *alone* the most satisfactory, spreading this freely upon the ground around the vine and upon the foliage—repeating this on the appearance of mildew, and in foggy weather during the summer. After a few years, the soil will become so saturated as to require but one application for the season, and this in June or July.

Complaints are freely made that the mildew reappears after the wash and sulphur has once destroyed it. To be of any real use the vines must be watched, and the sulphur application renewed, in one form or other, as often as any reappearance of mildew, and this again and again if necessary.

Several individuals, recently writing upon the mildew, speak of it as if caused by change of temperature of heat to cold, or the reverse. My own observation for twenty years past, has led me to think that damp, foggy weather was the cause, and the most favorable for its vegetation is the hot fogs of dog days.

Respectfully yours, JOHN FISK ALLEN.

HARDY NATIVE GRAPES.—The time has arrived, showing clearly that we can now have open cultured grapes, nearly equalling those grown under glass. In addition to the seedlings heretofore shown by Mr. Allen and Mr. Stetson, and fully spoken of in former Reports, we would mention the **REBECCA**, shown by William Brooksbank, Hudson, N. Y. The Rebecca is the best seedling, shown this season for the first time, and promises to be *early, high flavored, a good bearer, and perfectly hardy*, and being a white variety, may prove somewhat more desirable. Of its hardiness we are assured, since it has stood the winter without protection, at Winchester, in the grounds of E. A. Brackett. With Mr. Brackett it ripened earlier than the Diana. Of its earliness, prolificness and hardiness, Mr. Brackett speaks in the highest terms of commendation.

The **UNION** also fruited with Mr. Brackett. He speaks of it as a good grower and bearer, and perfectly hardy. This variety (as shown) was fully ripened about the middle of September. It is a delicious grape, of saccharine flavor, and fully equal in size to the Black Hamburg, which it much resembles in appearance.

The **DELAWARE** was also fruited in the hands of Mr. Brackett. Both the bunch and berry were much increased in size over those shown as grown in Ohio. The Delaware ripened on the 10th of September, and though the grape is undersized, it will always prove desirable for the table.

The **CURTIS**, (Mr. Stetson's seedling, spoken of heretofore as No. 4.) in the hands of Nahum Stetson, Bridgewater, ripened about the 20th of August, and was of superior flavor. Several other seedlings of good promise were shown, but sufficient is not yet known of their earliness and hardiness to warrant the Committee to speak so fully as to recommend their culture. The Allen's Hybrid was of an increased size over those heretofore shown.

Subjoined is a communication from Mr. Brackett on the subject of outdoor grapes. Mr. Brackett's grounds are most favorably located for the growth of the vine and its early ripening. It will be noticed that he dissents strongly from most growers, as to the food required for the vine. We cannot fully agree with Mr. Brackett, and think he may have come to his own conclusions from the fact that he is highly favored with the best of virgin soil, and a fortunate location in all respects.

Neither must the fact enumerated by Mr. Brackett that the London Horticultural Society awarded a prize to grapes, grown under the most ordinary conditions, be taken as an evidence that they can be successfully cultivated in this way for any length of time. The grapes referred to, were the *first crop* of a new vinery, supplied with abundance of heat and moisture, growing in a border which, according to the account, "appeared" to be common

garden soil, and everybody is aware how good the soil of an English garden is.

WINCHESTER, January 1st, 1857.

To the Chairman of the Fruit Committee of the Mass. Hort. Society:

Dear Sir,—Yours of Dec. 27th, was duly received. In a note published in your last year's report, I detailed what I believed to be the best method of training vines in open culture: and also gave a description of my soil. Notwithstanding the coiling of my vines around the stalks, and the severe root pruning given them some two years since, they still continue to make too much growth. I am satisfied that we have no soil in this climate suitable for the vine, that is not already rich enough in those materials necessary to form leaf and wood. Especially is this true of vines grown under glass. The system of making rich borders is derived from English cultivators, and is in direct opposition to the culture of the vine in its *native* soil, and the wine-growing districts of Europe.

This gluttony of the vine has been growing from bad to worse, until in some instances borders have been literally filled with dead horses and offal from slaughter-houses.

Something, however, of a return to first principles was found at the late exhibition in the Regent's Park, where grapes from vines grown in nothing but common garden soil, received the highest premium in competition with nearly one hundred of the best grape growers of England.

Vines, in pots, grown in a soil composed almost entirely of gravel and sand, without any animal manure, treated with silicate of potash and phosphate of lime, have borne large crops and ripened their fruit much sooner than those grown in a rich compost. The fruit of these vines was exhibited on your tables last March.

As the object of nature is to reproduce its species, it follows that the great labor of the vine is in maturing the seed. And just in proportion to the ease with which this is perfected will be the size of the pulp, or fruit, and the time of ripening lessened. Such being the case, all stimulants not tending to *assist* the vine in this direction are *injurious*; inasmuch as they stimulate the vine to an unnatural growth of wood—a condition unfavorable to the production of fruit.

I have fruited, the past season, four new varieties of out-door grapes, the Rebecca, Delaware, Union, and Canadian Chief.

The Canadian Chief is to all appearance a foreign grape. The Delaware is perfectly hardy, a good bearer, and the fruit of an excellent flavor. It is the earliest of all our native grapes worth cultivating. The Rebecca ripens about the same time of the Diana, and stands the climate quite as well as the Isabella. The Delaware and Rebecca are in my estimation a decided improvement over the Diana.

The Union grape is a seedling from the Isabella; perfectly hardy, bunches about the size of the Hamburgh, the berries somewhat larger and of excellent flavor. It has ripened with me during the past three years, and should it continue to maintain its present character it will undoubtedly become our best market grape.

Yours truly,

E. A. BRACKETT.

The **CONCORD** is now widely disseminated, and some are strenuous in its favor; in the course of a year or two it will have become so well tested as to earliness, &c., that growers will be enabled to judge for themselves as to its merits—and will probably decide in favor of its being a valuable addition to other varieties for out-door culture.

Oct. 8th.—Mr. S. Herman showed grapes so closely resembling the **Hamburgh**, as to be taken for that grape. The grower of the grape (a German) says, in answer to a query, "I had the **Black Hamburgh** planted in my grounds, but it would not stand the winter; while the vine from which these grapes were cut, stood the first three winters without any protection, while the last four years they have been covered. It usually ripens about the last of August; this year, in consequence of wet and cold, it was nearly a month later. My vines were received from Germany."

Considering the great value that would accrue from the introduction of new varieties of native grapes, ripening sufficiently early to mature in any part of the New England States, and superior to any we now possess, your Committee urge the necessity of the Society offering a special premium not exceeding \$500, or such amount as they may deem advisable, for the best seedling possessing such qualifications as will entitle it to so liberal a prize.

BLACKBERRIES.—Under the head of premiums awarded for this fruit, it will be seen that the **High-bush** has carried off all the premiums. The **Lawton** is a valuable acquisition, but without detracting at all from its merits your Committee would state that in their opinion, for general cultivation, the **High-bush** is altogether a superior berry, quite as large, of equal flavor, and possessing that all-important requisite for such a fruit, solidity, which enables the grower to take it to market in fine order, which he cannot well do with the **Lawton**. The blackberry, according to Mr. Merriam, who has had great success in growing it, should be trained horizontally; this causes every eye to break, and the shoots are literally loaded with fruit; if trained upright they only break freely at the top.

PEACHES.—Mr. Nahum Stetson exhibited, Sept. 6th, a *very* large peach, of delicious flavor, called "**Shanghai**," taking its name from the fact of its having originated in Shanghai.

RASPBERRIES.—It will be noticed that the *Knevell's Giant* has again taken the lead. For the first time **Brinklé's Orange** was shown (by George Davenport,) commencing his exhibition July 19th and ending in September. This is of an orange color, good size, well flavored, and, as will be noticed by the continuance of the contributions, is a prolific bearer.

NECTARINES.—None worthy of particular mention have been shown, except the **Stanwick**, shown by H. H. Hunnewell, to which was awarded the Society's silver medal. If others are as successful in growing this, as has been Mr. Harris, gardener to Mr. H——, it will probably be grown to the exclusion of most other varieties.

STRAWBERRIES.—The *Jenny Lind*, a seedling raised by Mr. Fay, having proved an early and prolific bearer in the hands of others than the originator, the Committee awarded to Isaac Fay, the *Society's Special Prize* of the *Ly-*

man Plate, valued at \$50, for the *JENNY LIND* as the best seedling after three years' trial.

The past season has been prolific in the introduction of new and valuable varieties from abroad, amongst which may be mentioned *Sir Harry*, *Admiral Dundas*, and *Sir Charles Napier*, shown by Messrs. Hovey, as the leading and most desirable of some twenty-five varieties of recent introduction. The *Admiral Dundas*, the largest of the above named, requiring only about EIGHTEEN TO THE POUND. *Sir Harry* received the first prize, as being superior in flavor to any other variety of the season. The *Admiral Dundas*, on account of size, would have received the second prize, but that the contributor is one of the Fruit Committee, and declined assenting to the award made by all other members.

The Committee would like to speak of some other varieties of strawberries, but they have already extended their report, and close with the following awards:—

PREMIUMS AND GRATUITIES AWARDED.

For the best and most interesting exhibition of Fruits during the season, the Lowell plate, to J. F. Allen,	\$15 00
For the second, to Henry Vandine,	10 00
For the third, to Hovey & Co.	7 00
APPLES.—For the best twelve Summer apples, to F. & M. Burr, for Red Astrachan,	6 00
For the second, to J. W. Foster, for Early Harvest,	4 00
For the best twelve Autumn apples, to James Eustis, for Gravenstein,	6 00
For the second, to J. B. Moore, for Hubbardston,	4 00
For the best twelve Winter apples, to F. & J. Lovett, for Lady Sweet,	6 00
For the second, to Lewis Davenport, for Baldwin,	4 00
BLACKBERRIES.—For the best specimens, to J. Nugent, for Highbush,	5 00
For the second, to G. Merriam, for the same,	4 00
For the third, to J. W. Foster, for the same,	3 00
For the fourth, to G. B. Cutter, for the same,	2 00
CHERRIES.—For the best specimens, to William Bacon, for Black Tartarian,	4 00
For the second, to G. B. Cordwell, for the same,	3 00
For the third, to J. W. Foster, for Black Eagle,	2 00
CURRENTS.—For the best specimens, to J. W. Foster, for Red Dutch,	3 00
For the second, to George Wilson, for White Dutch,	2 00
FIGS.—For the best twelve specimens, to J. Fisk Allen,	3 00
For the second, to E. S. Rand, Jr.	2 00
GOOSEBERRIES.—For the best specimen, to J. W. Foster,	3 00
For the second, to A. D. Webber,	2 00
GRAPES.—For the best specimens grown under glass, before July, to Breck & Son, for Cannon Hall,	8 00

For the second, to J. C. Blaisdell, for B. Hamburgh,	\$6 00
For the third, to Mrs. F. B. Durfee,	4 00
For the best specimen grown under glass, after July, to Wm. P. Perkins,	8 00
For the second, to Mrs. F. B. Durfee,	6 00
For the third, to J. F. Allen,	4 00
For the best Native grapes, to G. B. Cutter, for Isabella,	6 00
For the second, to E. A. Brackett, for Delaware,	5 00
For the third, to C. E. Grant, for Isabella and Catawaba,	4 00
For the fourth, to E. Cleaves, for Diana,	3 00
For the fifth, to G. C. Haynes, for Isabella,	2 00
MELONS. —For the best Musk Melon, open culture, to E. M. Richards, for Christiana,	2 00
For the best Water Melon, to C. S. Holbrook,	2 00
NECTARINES. —For the best twelve specimens, to J. F. Allen,	3 00
For the second, to C. F. Haynes,	2 00
PEACHES. —For the best twelve specimens, grown under glass, before July, to C. S. Holbrook, for Coolidge,	5 00
For the second, to J. F. Allen, for Grosse Mignonne,	3 00
For the best twelve specimens, open culture, to N. Stetson, for Shanghai,	5 00
For the second, to William Brigham, for late Crawford,	4 00
For the third, to C. G. Grant, for the same,	3 00
For the fourth, to F. Dana, for the same,	2 00
PEARS. —For the best twelve Summer Pears, to Samuel Downer, for Tyson,	5 00
For the second, to H. Vandine, for Muskingum,	3 00
For the third, to Hovey & Co., for Boston,	2 00
For the best twelve Autumn Pears, to W. R. Austin, for Duchesse,	5 00
For the second, to W. N. Rider, for Urbaniste,	3 00
For the third, to J. F. Allen, for B. Bosc,	2 00
For the best twelve Winter Pears, to J. B. Loomis, for Easter Beurre,	6 00
For the second, to N. H. Palmer, for Glout Morceau,	5 00
For the third, to W. R. Austin, for Easter Beurre,	4 00
For the fourth, to J. Plympton, for Glout Morceau,	3 00
PLUMS. —For the best specimens, to Henry Vandine,	4 00
For the second, to Evers & Bock,	3 00
For the third, to C. E. Grant,	2 00
QUINCES. —For the best twelve specimens, to J. C. Bachi,	3 00
For the second, to J. A. Stetson,	2 00
RASPBERRIES. —For the best specimens, to J. W. Foster, Knevett's,	4 00
For the second, to W. R. Austin, for the same,	3 00
For the third, to George Davenport, for Brincklé's Orange,	2 00
STRAWBERRIES. —For the best specimens, to Hovey & Co., Sir Harry,	5 00

For the second, to Isaac Fay, Jenny Lind, . . .	\$4 00
For the third, to J. C. Scott, Brighton Pine, . . .	3 00
For the fourth, to George Leland, Hovey, . . .	2 00

GRATUITIES.

- To R. S. Rogers, for Barbarossa grapes, silver medal.
 To H. H. Hunnewell, for Stanwick Nectarine, silver medal.
 To E. A. Brackett, for Union grape, silver medal.
 To Hovey & Co., for Rebecca, silver medal.
 To Isaac Fay, for Seckel, silver medal.
 To S. Kemp, for Seckel, silver medal.
 To W. C. Strong, for grapes, Society's silver medal.
 To W. C. Barton, for Winter Nelis, 1 vol. Hovey's Magazine.
 To Charles Bruce, for B. Diel, 1 vol. Hovey's Magazine.
 To H. M. Chamberlain, for B. Clairgeau, 1 vol. Hovey's Magazine.
 To George Nichols, Jr., for White Hamburg grapes, 1 vol. Hovey's Magazine,
 To Eliphalet Stone, for Polish apple, 1 vol. Hovey's Magazine.
 To Samuel Leeds, for B. Bosc, 1 vol. Hovey's Magazine.
 To T. Haley, for Urbaniste, 1 vol. Hovey's Magazine.
 To Jonathan French, B. Clairgeau, 1 vol. Horticulturist.
 To N. H. Henchman, for Louise Bonne de Jersey, 1 vol. Horticulturist.
 To Daniel Niles, Jr., for N. Spy, Appleton bronze medal.
 To Ralph Crooker, for fine specimens of Josephine des Malines pears, the Appleton bronze medal.
 To W. C. Barton, for Easter Beurré, the Appleton bronze medal.
 To C. E. Grant, for Easter Beurré, extra fine, the silver medal.
 To J. B. Moore, for White Dutch currants, the Horticulturist.
 To Isaac Fay, the Society's Special Prize of the Lyman Plate, valued at \$50, for the Jenny Lind, as the best seedling Strawberry after three years trial.
EBEN WIGHT, *Chairman.*

The premiums awarded at the annual Exhibition last September, will be found in our volume for 1856, (XXII. p. 483.)

REPORT OF THE COMMITTEE ON VEGETABLES,

AWARDING PREMIUMS FOR THE YEAR.

To the Massachusetts Horticultural Society :

Your Committee, in presenting this annual report of the weekly exhibitions, cannot fail to notice the increased interest in everything relating to the vegetable kingdom. Though the present season has not been as favorable to the development of vegetation as some preceding seasons, and the tables, on some occasions, have looked unattractive in this department, yet the new varieties offered for your examination by several contributors, have been such as to warrant an extended culture the ensuing season.

The new varieties of carrots adapted to early culture and shallow soils, are among the principal varieties that are calculated to enhance the profits

of the agriculturist. The turnip specimens have been such as show an improvement in the quality over former varieties, for field or table use.

The sweet corn, known as Burr's improved, has, the past season, been shown by numerous cultivators, and seems to possess a marked superiority for table use over former varieties.

As regards peas, the Champion of England, Hovey's, Hill's, Prince Albert and Early Kent, still retain their position among the earliest varieties. Of late introduction, the Dan O'Rourke, for an early variety, seems to bid fair to rival some of the former, here as well as in England, for where we have known of its being grown it has, like the Champion, proved to be a great favorite, and adapted to our climate.

In regard to potatoes, there have been no new seedling potatoes of any note placed before your Committee. The Worcester that was entered or placed on the table about the time of the Davis, does not, by tracing its origin, appear to be a variety that should be considered as coming under the article of prospective prizes.

Perhaps in the department of vegetable culture, there is not so much zeal and interest manifested as the subject requires; for the love of fruits and flowers exercise over the mind or senses of the amateur a more varied and delightful influence than the department of vegetables, though this opens a wide and interesting field for practical science. Yet, who is there to deny that a collection of finely grown vegetables placed on your tables does not excite as much interest to the visitors as a collection of fine fruits arrayed in all their richness? Or, a stand of flowers appearing to the eye as though the wings of a butterfly had been daguerreotypied on every petal?

The liberal prizes offered by the Society for vegetable gardens are not competed for. We should, therefore, be glad to see, the ensuing season, an increased interest among cultivators in this department, and the tables of the weekly exhibitions present an array of specimens grown to the greatest perfection, while at the annual display, the tables should groan under the weight of superior specimens and improved varieties, of such esculents as constitute the staff of life.

ASPARAGUS.—For the earliest and best, previous to May, to C. S.	
Holbrook,	\$3 00
For the best open culture, to George Everett,	3 00
For the second best, to Henry Bradlee,	2 00
BEANS.—For the best and earliest peck, to J. Nugent,	
For the best and earliest Lima, to George Leland,	3 00
For the best and earliest shell, to J. Nugent,	3 00
CABBAGE.—For the earliest and best, to Josiah Crosby,	
For the best, to F. Marsh,	3 00
For the second best, to J. Crosby,	2 00
CORN.—For the best and earliest sweet, to A. D. Webber,	
For the second best, to B. Harrington,	2 00
CUCUMBERS.—For the best pair under glass, previous to the first	
Saturday in June, to C. S. Holbrook,	5 00
For the second best, to James Murray,	3 00

For the best and earliest, open culture, to B. Harrington, . . .	\$3 00
EGG PLANTS.—For the best display, to Robert Murray, . . .	3 00
For the second best, to C. S. Holbrook, . . .	2 00
LETTUCE.—For the best six heads, before July, to J. Stone & Son, . . .	3 00
For the second best, to B. Harrington, . . .	2 00
ONIONS.—For the earliest and best, to B. Harrington, . . .	2 00
POTATOES.—For the best and earliest peck, to T. Smallwood, . . .	3 00
For the second best, to Josiah Crosby, . . .	2 00
PEAS.—For the best and earliest peck, to J. Nugent, (Dan O'Rourke,) . . .	3 00
For the second best, to H. Bradlee, (Prince Albert,) . . .	2 00
For the best peck of late, to B. Harrington, . . .	3 00
RHUBARB.—For the largest and best, to J. B. Moore, . . .	3 00
For the second best, to G. Merriam, . . .	2 00
SQUASHES.—For the earliest and best, to B. Harrington, . . .	3 00
For the best Marrow, to Josiah Stickney, . . .	3 00
TOMATOES.—For the best and earliest, to J. Nugent, . . .	3 00

GRATUITIES.

To Bowen Harrington, exhibitions during the season, . . .	\$8 00
To J. Crosby, for forced Lettuce, . . .	2 00
To J. W. Foster, for Radishes, . . .	2 00
To C. S. Holbrook, for varieties forced previous to May 1st, . . .	3 00
To Thomas Page, for Asparagus, . . .	2 00
To J. B. Moore, for the same, . . .	1 00
To J. Fisk Allen, for Tomatoes, . . .	1 00
To J. Breck & Son, for Rhubarb, . . .	1 00
To Galvin & Hogan, for the same, . . .	1 00
To Bowen Harrington, for the same, . . .	1 00
To James Hyde & Son, for the same, . . .	1 00
To C. F. Jones, for varieties, . . .	3 00
To Dr. E. G. Kelley, for Early Kent Peas, . . .	1 00
To T. Smallwood, for Bassano Beets, . . .	1 00
To Henry Bradlee, for Burr's Sweet Corn, . . .	1 00
To H. Bradlee, for Cucumbers, . . .	2 00
To Thomas Page, for Burr's Sweet Corn, . . .	1 00
To George N. Comer, for Vegetable Eggs, . . .	2 00
To Dr. Robert Dixon, for Squash, . . .	1 00
To Joseph Walker, for Mammoth Squash, . . .	1 00
To L. E. Caswell, for Mammoth Squash, . . .	1 00
To F. Marsh, 2d Vol. Hovey's Fruits of America, for new varieties.	
To A. D. Williams, for mammoth varieties, . . .	2 00
To Curtis & Cobb, for new varieties, . . .	6 00

DANIEL T. CURTIS, *Chairman.*

The award of premiums at the annual Exhibition of 1856 will be found in our last volume. (XXII p. 485).

Horticultural Operations

FOR FEBRUARY.

FRUIT DEPARTMENT.

JANUARY has been an unusually cold month, with scarcely a day when the temperature has been above the freezing point. It has also been cloudy with frequent and severe snow storms, and a degree of cold lower than has been experienced for several years. The thermometer falling from 12 to 16° below zero, in the neighborhood of Boston, on the 18th. At the time we write (the 20th,) the snow lies two feet deep, which fortunately protects the ground from deep frost. The winter thus far has been more severe than of 1855-56.

GRAPE VINES in early forcing houses, owing to the unfavorable weather, have advanced slowly the last month, and will now have but just set their fruit, or in those a little later started, will be just in bloom. In either case much care will be required to keep up an even temperature with the great changes of weather. Air should be given carefully, as very cold draughts will be likely to check them. Maintain a moist and genial atmosphere by liberal sprinkling of the walks and borders, giving an abundance in sunny weather, but less when cloudy or dull. As soon as the berries are large enough commence thinning the bunches. Top all laterals which are growing too fast, and tie in the shoots carefully and in their proper places. Vines in the greenhouse will begin to swell their buds early in the month, and as soon as this is perceived they will require occasional syringing to make them break well. Strong canes on young vines may be bent down at the ends to ensure this, if they don't start readily at the base. Vines in cold-houses may remain covered till next month. Cuttings may now be put in if a young stock is wanted.

GRAPE VINES in pots may be introduced into the house for a successive crop. Those now in fruit should be well watered.

PEACH and FIG TREES in pots may be brought into the greenhouse.

STRAWBERRIES in pots may be brought in, giving them a place on a warm shelf, near the glass.

SCIONS may be cut this month and preserved as we have before directed.

Seeds of Strawberries, Raspberries, Grapes, or other fruits, may now be planted in pots or boxes in the greenhouse.

PRUNING may be continued this month, whenever the weather is such as to allow such work.

FLOWER DEPARTMENT.

Continued cold weather has prevented the usual display of flowers in the conservatory and greenhouse; but as the sun's rays acquire more power the plants will soon repay this severity by a greater profusion of bloom. A fresh arrangement should now be made, replacing those where beauty is past, and bringing forward young stock for later flowering. Propagation

of all the various plants for summer use should now go on, while there is abundance of leisure to attend to it, as well as to have them better established for early bloom.

CAMELLIAS will be in their prime yet, and afford a rich treat. Keep them well watered and syringed often. Plants that show signs of growing should be pruned into shape, and if necessary have a shift into larger pots.

AZALEAS now begin to flower: water more liberally, and syringe occasionally. Young stock may have a shift if large stout plants are wanted.

JAPAN LILIES may yet be potted: those potted in December will now begin to grow, and should be carefully watered till well rooted.

PELARGONIUMS will now advance more rapidly. Keep the shoots tied out well, and if crowded thin them out. Water rather more liberally now. Late struck plants may now be repotted. Fumigate for the green fly.

CINERARIAS will now begin to flower, and unless recently potted will require a shift. Water carefully, and do not neglect fumigation, or the green fly will destroy their beauty.

HEATHS and EPACRIS may now be propagated from cuttings; it is the best season.

ACHIMENES and GLOXINIAS may be potted off now, and have a warm situation.

CALCEOLARIAS should be repotted. Keep them in an airy place near the glass.

FUCHSIAS repotted last month will now begin to grow: young plants may now be raised from cuttings of the new shoots.

MONTHLY CARNATIONS may be propagated now by layers or cuttings for a young stock for bedding out in spring.

PANSY SEEDS may yet be planted.

VERBENAS for blooming in pots should now have a shift into a larger size.

SALVIAS, HELIOTROPES, &c., should now be propagated for a spring stock for bedding out.

VIOLETS in frames should be well protected from frost by straw mats, or a good covering of straw or hay: give them air upon every fine day.

VEGETABLE DEPARTMENT.

With the incoming of February preparations should be made for a supply of early vegetables of all kinds. To have many of them in perfection at an early season, it is necessary they should be brought forward in a hot-bed. Fresh horse manure should therefore now be laid in a heap to undergo the proper fermentation and preparation for this purpose. It should be turned over once or twice to have it evenly heated, and when ready, which is usually in ten days or a fortnight, the bed should be made. At this inclement season it should be three feet high at least. As soon as the heat is well up cover it with light soil, and when warm immediately sow seeds of cucumbers, melons, egg-plants, tomatoes, lettuce, radishes, celery, &c., &c.; cover every night with straw mats to keep out frost, and air daily, avoiding too strong a heat, which will draw up the plants too rapidly.

SPRING MANAGEMENT OF FRUIT TREES.

As the season is approaching when the active labors of the garden require attention, and every collection of fruit trees demands more than ordinary care, we are reminded of the importance of contributing a portion of our own experience in aid of those who are seeking information upon this subject; especially the amateur, who, inexperienced in the management of fruit trees, needs some guide to the successful issue of the time and labor which he intends to devote to their cultivation; for upon a right course at the commencement depends, in a great measure, their after-treatment and the final result of his labors. General rules it is easy to lay down,—and they are found in every reliable treatise upon the subject,—which, with some knowledge of the growth of trees, combined with good judgment and little experience, it is a simple process to follow. But the mass of cultivators have not acquired either the knowledge, the judgment, or the experience requisite to do this, and hence general rules, though good so far as they go, are not always applicable, in the varied culture which different soils and different localities, and the varied habits of trees and their peculiar constitutions, demand. It is only by giving patient attention to little details that the most satisfactory results can be achieved, and the growth of our best fruits can be rendered profitable and certain.

The experienced cultivator has conquered all these difficulties, and, when called upon for information, refers us to some general rules which have been his course of practice, forgetting that these rules are the result of details, and have only been arrived at through continued labor, unremitting attention and indomitable perseverance. The amateur seeks only results, and knows not the process of their attainment. If aware how much he has to learn, he would, often, be tempted to relinquish the attempt at accomplishing what his

ambitious hopes have anticipated. Fortunate is it that he does not; but laboring only for the success which experienced men have achieved, he little by little conquers the difficulties which beset his path, and eventually,—if his zeal and industry hold out,—reaches the eminence which such measures are certain to attain.

To aid, therefore, in rendering the task of the amateur or young cultivator a more easy one, is our object. For though knowledge, judgment and experience are absolutely necessary to secure the highest success, they can be greatly facilitated by right information acquired at the right time. One cultivator may go on for years accomplishing less than another in half the time. All will depend upon the course of action. Experience is the best of all schools. But he who trusts to experience alone, will find, too late, that had he availed himself of the knowledge of others his task would have been far easier, and his results no less certain. What every cultivator should endeavor to do, is to consult only authentic sources of information, and never rely upon the casual observation and brief experience of those who trumpet forth some accidental success and the mode of its achievement as the true way for all to follow who would arrive at like results.

Fruit trees of every kind require our constant attention; they are not to be treated as nature gives them to us, with the expectation of affording us crops in their improved condition. By the process of amelioration through the seed, and the effect of years of high cultivation, they are far removed from the original type, and therefore require unremitting care to keep them up to their improved character. In the ever-varying round of the seasons, in winter, spring, summer and autumn, they need attention, and amply repay all the labor bestowed upon them. Pruning, digging, watering, disbudding, manuring, &c., constitute the routine of practice which demand repetition with the advent of every year. They are not to be discontinued with the planting of the tree, or even when it becomes well established in the soil, but must be followed, to a greater or less extent, as long

as it continues an object worthy of our care. Especially is this the case where the tree is artificially grown,—that is, as a dwarf, a pyramid, a bush, or an espalier. In either of these circumstances it is under restraint, and, if neglected, soon shows the tendency of its habit to outgrow its altered condition, and thwart the designs of the cultivator. These being some of the requirements which demand attention at this particular season, we shall proceed to notice them.

PRUNING.—The first and perhaps most important object is pruning: unless this was done in the autumn, which is hardly probable, this will be the season when the winter operation should be performed; for if summer pruning and pinching have been properly attended to, it will be reduced to a very easy work; but, if not, it will be more laborious. As the object of pruning is mainly to shape and keep the tree within reasonable bounds, and, at the same time, properly thinned of superfluous shoots, to allow the free admission of sun and air to the entire foliage, for the due elaboration of its food, it follows that there will be much wood to cut away and many shoots to shorten in. But this simple operation of shortening in, (cutting off one half to two thirds the last year's growth,) and thinning out, is widely dissimilar, according to the habit and growth of the trees. Such robust constitutions as the *Beurré Diel*, *Le Curé*, *Jargonelle*, &c., should be pruned differently from the *Winter Nelis*, *Dix*, *Beurré Giffard*, &c. The strong growers must not be cut as short as the weaker ones, nor thinned to the same extent, otherwise they push with redoubled force, and run, as it is termed, to wood; on the pear stock this is especially the case. It must also be understood that many pears bear mostly upon the wood of the preceding year, like the *Van Mons Leon le Clerc*, *Boston*, *Josephine de Malines*, &c., and to shorten in these sorts, as we would the others, would be to destroy half the crop of fruit. All these little particulars must receive attention, and the operator, unless guided by careful observation, must learn something of their habits in works which treat upon the subject. Knowing that these precautions are necessary, the labor can be

performed with some confidence of success ; always cut neatly at an outward eye, as we have already illustrated in an article in a previous volume. Trees upon the quince should be more severely pruned than those on the pear.

MANURING.—Every fruit tree must not only be planted in a proper soil and favorable location to expect good results, but the soil must be kept in good condition in their after-culture. For the pear it must be deep, mellow and rich ; for the apple equally good, but perhaps not so deep ; and for other fruits mellow and friable. The best season, without doubt, for applying manure, is the autumn. It then not only protects the roots from excessive frosts, but allows the soluble substances which it contains to be carried down to the extremities of the roots, where it is needed now that they are in action. But if by any neglect or fear of waste it has not been done, no time should be lost to apply it at once—the sooner the better. If it is old and well decomposed, it is all the better ; for fresh strawy manure is not suitable at this season ; it will do in the autumn. If there is not a liberal supply this may be made so by the use of a *small quantity* of guano, (one or two pounds to the tree.) Together they are better than either alone, for the manure acts mechanically, loosening the soil and rendering it more permeable to air and moisture. Let one or both of these be applied immediately, and if the weather continues cool and unfit for tillage, let it lie undisturbed around the tree in a circle of five or six feet, till the weather is sufficiently settled to spade it into the ground. In the mean time it will sustain no perceptible loss by evaporation, as is too often feared, but, on the contrary, its fertilizing substances will be carried down to the roots by the early and invigorating spring rains. In regard to the quantity of manure for each tree, this must depend on its size, and the soil in which it grows. A barrowful may be given to a tree beginning to bear, and a lesser quantity to those not so far advanced. There is little danger of erring on the wrong side by giving too much.

As soon as the soil is in working condition, it should be lightly dug, working in at the same time the manure pre-

viously applied, and which should be given then if neglected previously. After this it is only necessary to keep the soil clear of weeds, and, if a dry locality, mulched with tan, hay, short grass, or even coarse manure, and the spring work, as regards the soil, is done.

INSECTS.—These are the pests of the cultivator: when all seems accomplished that he is able to do, these commence their attacks and defeat his calculations. Their name is legion. The stem, the bark, the foliage, the buds and the fruit are alike equal prey. But some are more formidable to subdue than others, while many are less destructive to the trees. Those which require attention now are among the former class, and no time should be lost in destroying them. These are the bark louse and scale, the former attacking the apple and the latter the pear: both may be easily detected upon the trunks and stems of the tree, where they congregate in such numbers as to literally cover the bark. No tree will long remain in health while they are allowed to continue their depredations.

Fortunate is it that they can be so readily attacked; by the aid of a brush and oil soap or potash, they may, by steady perseverance, be exterminated, or, at least, so diminished in numbers as to be of little harm. Two pounds of potash dissolved in seven gallons of water is highly recommended by many cultivators as an excellent wash; but we have always used a good thick solution of whale oil soap, scrubbing the stems first with sand and water, if very badly infested, and afterwards applying the soap with a painter's brush, upon every limb where a louse or scale is to be seen. A double application will usually effect our object, if one does not do it. This should be done now, before the trees begin to grow, as it is a more difficult operation when they are in leaf. Such as escape, the present spring, can be overtaken the coming fall, which is also a good time to continue the work. Luckily we have been but slightly annoyed with these pests, but as their presence in ever so small numbers is by no means desirable, we have always made it an especial object to prevent their increase, and have so far succeeded.

The canker worm grub will continue its ascent upon the apples, plums and cherries throughout all the fair weather in March and the early part of April, and the usual precaution of tarring, or some other mode of defence, must be adopted.

In completing the spring work we have but just begun the labor of the year. With the coming of summer the same care and attention must be continued, and other labor performed. But the important duties are those we have laid down. Judicious pruning and liberal manuring, admitting the soil to be properly adapted to the tree, will ensure a certain degree of success, though there are others which succeed that are necessary to the production of the finest fruit. We shall endeavor to follow up our advice as the season shall require additional aid from the cultivator.

AMERICAN POMOLOGICAL SOCIETY.

FIRST INTERMEDIATE REPORT ON NATIVE FRUITS.

THE Committee of the American Pomological Society, on Native Fruits, respectfully submit to the President of the American Pomological Society its first Intermediate Report. In presenting these Reports, the Committee is aware of the labor that will be encountered, and the responsibility that must necessarily be assumed. A correct estimate of the merits of a new fruit, examined for the first time, is no easy task. Due allowance must be made for the difficulty of ascertaining the precise period when a new fruit has arrived at its full maturity. But as the chances are greatly in favor of its not being examined exactly at the proper time, its excellence will be more likely to be underrated than the reverse. On this account, many varieties have, no doubt, been consigned to the tomb of the Capulets that richly deserved a more enduring existence. The Uwehlan pear is an instance in point. On its first presentation, it was condemned as worthless by an able and intelligent fruit committee, that would most assuredly have regarded it as a variety of the

greatest excellence had it been examined at the right moment.

RASPBERRY.

CATAWISSA.—This fine new ever-bearing raspberry is a native of Catawissa, Columbia County, Penn., and has been brought into notice by Mr. Joshua Peirce, of Washington, D. C. A plant that had withstood, without protection, the unprecedented and intense cold of last winter, was examined on the 7th of September. At that time it was loaded with blossoms, ripe fruit, and unripe berries, in all the intermediate stages.

Size of berry, rather large, some being three fourths of an inch in diameter: *Form*, roundish-oblate, or, more correctly, hemispherical: *Skin*, of a deep crimson color, thickly covered with bloom: *Flavor*, fully equal to the so-called, but spurious, Antwerp raspberry of the Philadelphia market: *Quality*, "very good." This variety is an ever-bearer, wonderfully productive, and worthy of cultivation.

PEACH.

TITUS.—This fine new peach originated with Mrs. Sarah Titus, No. 64 Ogden Street above Eleventh, Philadelphia. Specimens of the fruit were exhibited at the annual fair of the Pennsylvania Horticultural Society in 1856.

Size, large, two and nine sixteenths inches in length by two and three sixteenths broad: *Form*, roundish: *Skin*, fair yellow, with a red cheek: *Cavity*, open: *Stone*, deeply cut, one and three quarters inches long, one and an eighth wide, seven eighths thick—free: *Flesh*, yellow, red next the stone, juicy, unadherent: *Flavor*, luscious: *Quality*, "best:" *Maturity*, from the middle to the last of September. Eaten September 29, 1856.

GRAPES.

REBECCA.—This delicious new grape is an accidental seedling, that sprung up in the garden of Mr. E. M. Peake, of Hudson, New York, and has been in bearing for the last five years. Specimens were shown, in 1856, at the annual

exhibition of the Pennsylvania Horticultural Society—subsequently, at the recent biennial meeting of the American Pomological Society, and at the United States Agricultural Fair, in Philadelphia. It was described, and its history given, in the report of the committee at the Rochester meeting. Specimens received since that time enable us to give a still more complete and accurate description.

Bunch, of fair size, about six inches in length, and very compact in form: *Berry*—*Size*, full medium, three fourths of an inch long, by five eighths broad: *Form*, neither round nor oval, but obovate: *Skin*, thin, semi-diaphanous, greenish white, sometimes tinged with amber, and covered with a thin, white bloom: *Flesh*, very juicy, melting, and tender in texture, without being pulpy: *Flavor*, rich, saccharine, and vinous, with a peculiar luscious aroma, distinct from that of any other grape: *Seed*, small, usually two, often three or four, and rarely five, in each berry: *Quality*, “best:” *Maturity*, middle of September: *Leaf*, scarcely of medium size, about seven inches long, and seven in width, very deeply lobed, and coarsely and sharply serrated; upper surface, light green, and slightly rough; under surface, covered with a thin, whitish down; nerves, prominent; petiole, rather slender.

The sterling merit of this new and very superior native variety will cause it to be rapidly diffused over the country.

WILMINGTON.—This new native grape was shown, by Mr. Edward Tatnall, of Delaware, at the United States Agricultural Fair, held in Philadelphia, in 1856; and, from the investigations of Dr. L. P. Bush, of Wilmington, Delaware, it is believed to have originated in that city.

Bunch, of good size, four and a half inches long by three and a half broad; not compact; sometimes shouldered: *Berry*—*Size*, eleven sixteenths of an inch long by eleven sixteenths in its transverse diameter: *Form*, round, slightly inclining to oval: *Skin*, yellowish green: *Flesh*, tender in texture, and not pulpy: *Flavor*, saccharine, and pleasant: *Quality*, as a native grape, “best:” *Maturity*, last of September.

This variety is well worthy of cultivation.

CANADIAN CHIEF.—A remarkably fine bunch of this grape was received through the Editor of the *Horticulturist*. It is represented to be a hybridized seedling that originated at Hamilton, Canada West, and is said to be hardy and very productive, the vine having borne one hundred and thirty-four clusters from sixteen to twenty-four ounces each.

Bunch, very large, seven inches long by six broad; compact: *Berry*—*Size*, five eighths of an inch by five eighths: *Form*, round: *Skin*, green, with a faint amber tint: *Flesh*, tender: *Flavor*, pleasant, but subacid, probably from being pulled before being thoroughly ripe, as the seeds were evidently somewhat immature: *Maturity*—the specimen examined was received in November, though no information was given in reference to the time it was taken from the vine.

Any grape that will produce such large bunches in the open air, and especially in the cold climate of Canada, must be desirable. But is it a native variety? Some of the Committee who think it is not, regard it as the White Sweetwater. There is a difference, however, in the time of ripening of the two, as well as in the size and character of the bunch, that of the Canadian Chief being large and compact, while the other is medium sized, and open or loose in its structure.

ARCHER.—This is an accidental seedling, that sprung up, five or six years ago, in the garden of Mr. Ellis S. Archer, at the N. W. corner of Seventeenth and Arch Streets, Philadelphia.

Bunch, rather large, five inches long by four in width: *Berry*—*Size*, full medium, eleven sixteenths of an inch long by eleven sixteenths broad: *Form*, round, inclining to oval: *Skin*, greenish white, and, where exposed to the sun, of an amber tint, covered with a dense white bloom: *Flesh*, not pulpy, juicy: *Flavor*, sweet and pleasant: *Quality*, "very good:" *Maturity*, eaten on the 5th of November.

The leaf of this variety presents strong indications of a foreign parentage; and though, from this circumstance and its late period of maturity, it may not succeed well at the North, yet it might prove valuable in a southern latitude.

APPLES.

MEISTER.—Specimens of this variety were received from Mr. Charles Kessler, of Reading, Berks County, Penn. It is believed to have originated in Berks County.

Size, below medium, two and an eighth inches long by two and five eighths broad: *Form*, roundish—conical: *Skin*, greenish yellow, striped with red, with numerous white spots containing, sometimes, a russet point in the centre, and many russet dots and short concentric curvilinear lines in and around the basin: *Stem*, from three eighths to one half an inch long by one eleventh thick, inserted in a wide, moderately deep cavity: *Calyx*, small, closed, set in a narrow, shallow basin: *Core*, medium: *Seed*, light brown, obovate, one third of an inch long, three sixteenths broad, one eighth thick: *Flesh*, tender: *Flavor*, sprightly and pleasant: *Quality*, “very good:” *Maturity*, eaten on the 3d of October.

CHRISTIANA, (R. 9, T. 10.)—This beautiful apple originated near Wilmington, Delaware, on the premises of Mr. John R. Brincklé, and fruited in 1855, for the first time.

Size, medium, two and five eighths inches in length by three in breadth: *Form*, roundish, inclining to conical: *Skin*, beautifully striped and mottled with carmine on a yellowish ground: *Stem*, half an inch long by one eleventh thick, inserted in a deep, rather narrow cavity: *Calyx*, partially closed, set in a deep, moderately wide, plaited basin: *Core*, small: *Seed*, brownish gray, many of them triangular, one third of an inch long, three sixteenths broad, one ninth thick: *Flesh*, yellowish white, fine texture, juicy: *Flavor*, pleasant, delicate, sprightly, vinous: *Quality*, “very good:” *Maturity*, probably November; the specimen examined was eaten on the 4th of December, when it was overripe.

PEARS.

RITTER.—Specimens were received from Mr. Louis Ritter, of Reading, Penn. The tree from which they were obtained was purchased in the spring of 1851, for the Seckel, from an agent of Mr. John Perkins, of Moorestown, New

Jersey ; but, instead of having a rounded head, it is pyramidal in its growth.

Size, small, one and seven eighths inches long by one and five eighths broad: *Form*, obovate: *Skin*, greenish yellow—a good deal russeted, with, occasionally, a faint brown cheek: *Stem*, long, one and three eighths inches in length by one eighth thick, inserted without depression: *Calyx*, rather large, set in a shallow plaited basin: *Core*, medium: *Seed*, small, five sixteenths of an inch long, three sixteenths wide, one eighth thick: *Flesh*, fine texture, melting, and buttery: *Flavor*, saccharine, with the full Seckel aroma: *Quality*, “best:” *Maturity*, October 29.

This variety may prove to be the Seckel, although it appears to differ from it in the length of the stem, time of ripening, and in the shape of the tree. It is possible, however, that these several points of difference may be merely accidental departures from the normal condition of the Seckel, without being permanent characteristics. Should this not be the case, then the Ritter is worthy of cultivation, chiefly because it will prolong, in another variety, the delicious Seckel aroma.

DAVIS.—Specimens of this seedless native pear were received from Mr. Samuel Davis, Haverford Township, Delaware County, Pennsylvania—six miles from Philadelphia, on the Westchester road. They were produced by a grafted tree on his premises, the graft having been taken, about twenty years ago, by Mr. Davis's father, from a seedling on the farm of his neighbor, Mr. Adam Litzenberg, soon after which the original tree died.

Size, small, one and three quarters inches long by one and five eighths in breadth: *Form*, rather variable, sometimes roundish, usually obtuse-pyriform, widest at the crown, and obscurely pentangular: *Skin*, much russeted, with occasionally marblings of greenish yellow: *Stem*, three eighths of an inch long by one eighth thick, inserted in a very shallow cavity: *Calyx*, small, partially reflexed, set in a wide, somewhat irregular, superficial basin: *Core*, medium, solid, being entirely devoid of seed cavities: *Seed*, not abortive,

but altogether absent: *Flesh*, buttery, gritty around the core: *Flavor*, slightly aromatic, and somewhat vinous: *Quality*, "good:" *Maturity*, last of September and beginning of October.

This seedless variety, though much smaller than the Poire sans Pepins, is much superior to it in quality. Were it not for the grittiness near the core, the Davis would be rated "very good." And even with this objectionable feature, it commands a good price in the Philadelphia market.

FRANKFORD.—Specimens of this new variety were received from Mr. Robert Cornelius, who procured them from a grafted tree on the premises of Mr. Eli Merkins, a mile and a quarter from Frankford, Philadelphia. The seedling from which the grafts were obtained, Mr. Merkins found, four years ago, growing on the bank of Frankford Creek, near the bridge, and having on it three or four pears. The following year, he again saw it in fruit, and found the specimens of so good a quality that he determined to remove the tree to his own premises. This he accomplished at the proper season, taking the precaution, at the same time, to insert several grafts from it into a large White Doyenné, that stood on his grounds. The original tree perished, but, fortunately, the grafts succeeded, and from them were produced the specimens examined by the Committee.

Size, medium, two and a quarter inches long by two and five sixteenths broad: *Form*, roundish, sometimes inclining to pyriform, not unfrequently obovate: *Skin*, yellow, containing many russet dots, especially towards the crown, and having, occasionally, a faint blush on the part exposed to the sun: *Stem*, usually about thirteen sixteenths of an inch long by one sixth thick, sometimes short, thick and fleshy at its termination; inserted in a small cavity: *Calyx*, medium, open; set in a shallow, moderately wide basin: *Core*, medium: *Seed*, generally abortive; when perfect it is ovate, dark brown, an angle at the obtuse end, plump, three eighths of an inch long, one fifth wide, one seventh thick: *Flesh*, fine texture, and buttery: *Flavor*, exceedingly rich, with a delicious aroma: *Quality*, "best:" *Maturity*, November.

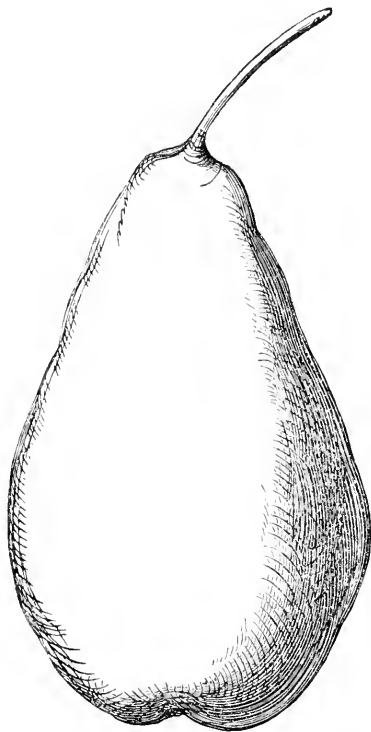
This new native pear is a decided acquisition, and, as soon as its value becomes known to the pomological community, it will be extensively cultivated. One specimen was examined on the 29th of October, and was pronounced "very good." But, on the 14th of November, when it attained its full maturity, there was no hesitation in placing it among the "best." Its original locality, in Frankford, was in the immediate vicinity of the place of origin of the "Philadelphia" pear.

WILMINGTON, (1847, E. 1.)—The Wilmington is a seedling of the *Passe Colmar*, raised from seed planted by the undersigned in 1847, and grafted on quince in 1850. This grafted tree fruited for the first time in 1855, and bore only a single specimen, which was eaten on the 2d of October. In 1856 it matured ten specimens; the first was eaten on the 9th of September—the last, during the meeting of the American Pomological Society in Rochester. The original tree has not yet fruited.

Size, medium, from two and eleven sixteenths inches by two and a half to two and three quarters by two and five sixteenths: *Form*, sometimes obtuse-pyriform, somewhat compressed at the sides, sometimes roundish-ovate; which of these two forms will ultimately be the normal one, can only be determined when the variety has fully established its characteristic peculiarities: *Skin*, cinnamon russet, with patches of greenish yellow on the shaded side, and sometimes faint traces of carmine on the part exposed to the sun, with occasionally a number of black dots, encircled by a carmine margin: *Stem*, somewhat variable, from one and a half inches by one eighth to one and one fourth by one sixth, of a uniform cinnamon color, curved; inserted obliquely in a small cavity, and, in some instances, without depression: *Calyx*, medium, with short, erect segments, set in a wide, rather deep, sometimes slightly furrowed basin: *Core*, medium: *Seed*, dark brown, acuminate, with an angle, at the obtuse end, three eighths of an inch long, three sixteenths wide, and one eighth thick: *Flesh*, fine texture, melting and buttery: *Flavor*, rich and saccharine, with the

delicious aroma of the Passe Colmar: *Quality*, "best:" *Maturity*, September. Eaten, October 2, 1855.

ONTARIO.—This new native pear (FIG. 3) was concisely noticed in our Rochester Report. Since that time, other specimens have been examined, which enables the Committee to give a more full description of the variety. The Ontario is a seedling of the Canadaigua. It originated at Geneva, Western New York, and, in its general appearance, bears a considerable resemblance to the Washington.

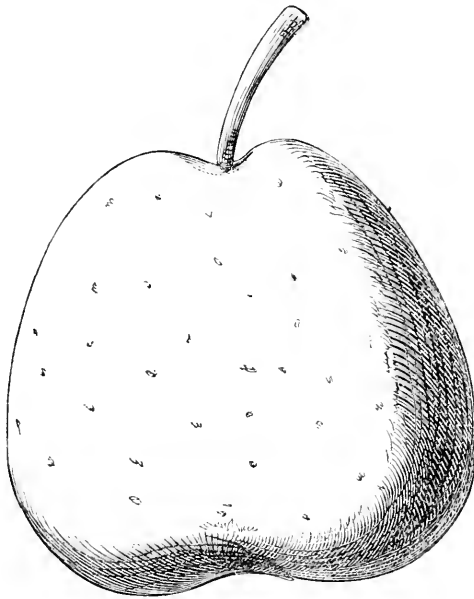


3. ONTARIO PEAR.

Size, two and five eighths inches by two and one sixteenth: *Form*, long, obovate, inclining to pyriform: *Skin*, greenish yellow, with numerous pale green dots, which become russet on the shaded side, and sometimes carmine on the side exposed to the solar rays: *Stem*, three fourths of an

inch long by one tenth thick, inserted, by a fleshy termination, in a slight depression: *Calyx*, medium, open, set in a wide, shallow, furrowed basin: *Core*, medium: *Seed*, light brown, long-obovate, three eighths of an inch long, three sixteenths wide, and one eighth thick: *Flesh*, fine texture, buttery: *Flavor*, sugary and rich: *Quality*, "very good:" *Maturity*, last of September.

HUNTINGTON.—Specimens of this (FIG. 4) and the two succeeding varieties were exhibited at the late meeting of the Society at Rochester, by Mr. S. P. Carpenter of New Rochelle, New York, and were noticed in the Report of the Native Fruit Committee, but not minutely described. Since



4. HUNTINGTON PEAR.

the adjournment of the Society, other specimens, through the kindness of Mr. Carpenter, have been received and examined, and a visit to the original trees has been made by a member of the Committee.

The Huntington was found growing in the woods, and, while small, was taken up by the late James Huntington,

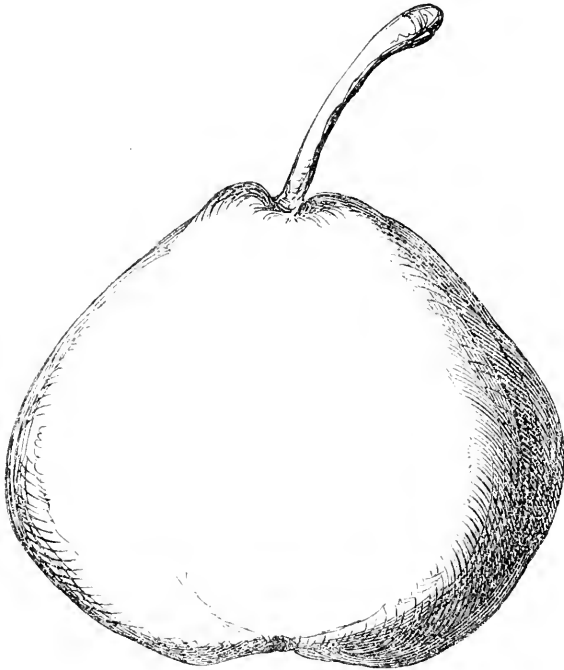
Esq., of New Rochelle, and planted in front of his residence. The tree is now twenty or thirty years old, and pyramidal in its growth. Having been planted in a shallow, stony piece of ground, it does not appear to thrive well, although it produces fruit of an excellent quality.

Size, rather under medium, two inches long by two and five sixteenths broad: *Form*, roundish-obovate, broad at the crown, tapering to the base, sometimes resembling in appearance the Vesouziere: *Skin*, yellow, with a number of russet dots, and not unfrequently a red cheek: *Stem*, from five eighths to one inch long by one eighth thick, inserted in a moderately open cavity, which occasionally is quite wide and shallow: *Calyx*, rather large, set in a wide, not very deep basin: *Core*, medium: *Seed*, dark brown, obovate, five sixteenths of an inch long, three sixteenths broad, one eighth thick: *Flesh*, fine texture, and buttery: *Flavor*, slightly vinous, with a peculiar, delicate aroma: *Quality*, "very good:" *Maturity*, middle of September.

CHURCH.—The Church pear (FIG. 5) is believed to be a seedling raised by an old Huguenot settler at New Rochelle. The original tree stands on the premises of L. P. Miller, Esq., and is presumed to be nearly a hundred years old. It bears, annually, from fourteen to twenty bushels of fruit, is uncommonly healthy and vigorous, having no decayed limb about it, and spreads its lordly head over three or four square rods. The trunk, two feet above the ground, is six or seven feet in circumference.

Size, medium, two and three sixteenths inches in length, by two and five sixteenths in breadth: *Form*, short-turbinate, largest in the middle, and tapering both ways: *Skin*, greenish yellow, russeted at the base and crown, with occasionally russet markings on other portions of the exterior: *Stem*, long, from one to one and three eighths inches by one seventh in thickness, of a cinnamon color, and inserted without depression: *Calyx*, closed, with short segments, set in a moderately wide, plaited basin: *Core*, medium: *Seed*, brown, ovate, with an angle at the obtuse end, one third of an inch long, one fifth broad, one eighth thick: *Flesh*, of

fine texture, and buttery: *Flavor*, mild, pleasant, and sufficiently saccharine: *Quality*, "very good:" *Maturity*, commences ripening about the middle of July, and continues till the end of September.



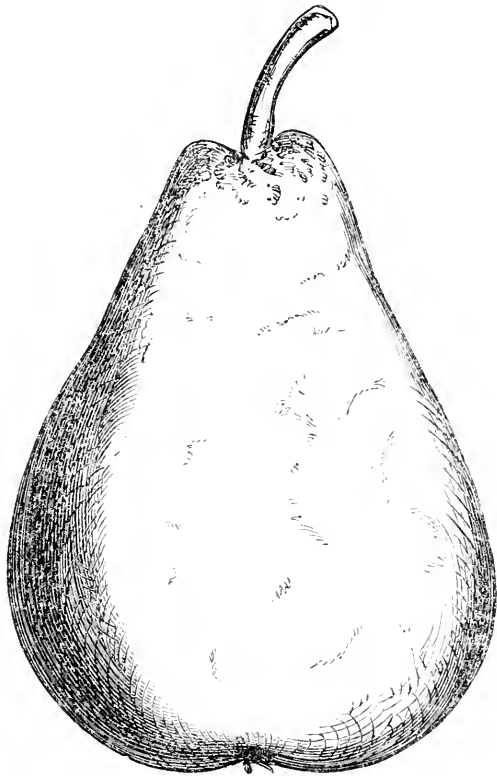
5. CHURCH PEAR.

Future observation will determine whether or not the Clark pear of Connecticut, the Bergamot of Dr. Bloodgood of Flushing, the Sallaignac of Germantown, and Carr's Autumn Bergamot, are synonymous with the Church of New Rochelle.

PARSONAGE.—The Parsonage (FIG. 6) is also believed to have originated at New Rochelle. It stands on the premises of the Rev. Dr. R. M. Morgan, and is a constant and abundant bearer of from ten to twenty bushels annually.

Size, large, three and an eighth inches in length by two and a half in width: *Form*, pyriform, usually rounded at the base, sometimes long-turbinate: *Skin*, yellow, inter-

spersed with numerous russet dots, a good deal russeted at the base, and russet markings at the crown: *Stem*, five eighths to six eighths of an inch long by one sixth thick, inserted, with little or no depression, by sometimes a fleshy termination: *Calyx*, medium; segments, short and stiff, and



6. PARSONAGE PEAR.

set in a very shallow, slightly plaited basin: *Core*, small: *Seed*, dark brown, acuminate, three eighths of an inch long, three sixteenths wide, one eighth thick: *Flesh*, somewhat granular in texture, and buttery: *Flavor*, vinous: *Quality*, "good," at least—perhaps "very good:" *Maturity*, last of September.

SELLECK.—A box, containing fine specimens of this pear, was sent, by Mr. Albert Bresec, of Hubbardton, Vermont, to

the recent meeting of the American Pomological Society at Rochester. Having, however, been accidentally misplaced, it was overlooked till after the adjournment of the Society. The specimens were accompanied by a letter from Mr. B., in which it was stated that the tree, supposed to be the original one, was planted, between the years 1818 and 1825, on the farm of Mr. Columbus Selleck, Seedbury, Vermont, where it now stands.

Size, large, sometimes very large, usually three and one eighth inches long by two and eleven sixteenths in width: *Form*, obovate-pyriform, sometimes roundish-obovate, with a more or less distinct neck, and uneven surface: *Skin*, thick, yellow, with many large russet dots, and rarely a red cheek: *Stem*, one and a quarter inches long by one eighth thick, curved, inserted somewhat obliquely, by a fleshy termination, into a slight cavity, which is sometimes nearly obsolete: *Calyx*, small, segments erect, set in a shallow, contracted, plaited basin: *Core*, medium: *Seed*, black: *Flesh*, rather coarse in texture, buttery: *Flavor*, some resemblance to that of the Bartlett, but more saccharine: *Quality*, "very good:" *Maturity*, end of September and beginning of October.

WATERMELONS.

The MOUNTAIN SWEET watermelon has, for many years, been universally conceded to be the best market variety cultivated in the Middle States. Of late, however, it has lost some of the qualities that recommended it so highly to favor. This deterioration has probably been owing to the influence of pollen from inferior kinds grown in its vicinity. For the last three years, a member of the Committee has been procuring, from the South, and chiefly from the interior of South Carolina, seed of many new watermelons of high repute, and disseminating them. During the past season, fine specimens of some of these kinds were received, and the opportunity thus afforded of ascertaining their merits has not been neglected. At least four of them are unquestionably equal in quality to the Mountain Sweet when in its

highest state of perfection ; these are the Clarendon, Souter, Ravenscroft, and Bradford. Another, Odell's Large White, though not equal, in some respects, to the four preceding, will, on account of its size and productiveness, become a desirable and profitable variety for market purposes.

CLARENDON.—This fine watermelon is also known under the name of the Dark Speckled. It originated in Clarendon County, South Carolina, and, when pure, may at all times be readily recognized by the peculiarly characteristic markings of the seed.

Size, large : *Form*, oblong : *Skin*, a mottled gray, with dark green, interrupted, longitudinal stripes, irregular in their outline, and composed of a succession of peninsulas and isthmuses : *Rind*, thin, not exceeding half an inch : *Seed*, yellow, with a black stripe extending around the edge, and from one to three black spots on each side, the form and number corresponding on the two sides : *Flesh*, scarlet to the centre : *Flavor*, sugary and exquisite : *Quality*, "best."

SOUTER.—This fine watermelon originated in Sumpter District, South Carolina.

Size, large, sometimes weighing twenty or thirty pounds : *Form*, oblong, occasionally roundish : *Skin*, peculiarly marked with finely reticulated gray islands, separated by pale green straits, and having irregular, dark green, longitudinal stripes, extending from the base to the apex : *Rind*, thin, about half an inch : *Seed*, pure cream white, with a faint russet stripe around the edge : *Flesh*, deep red to the centre : *Flavor*, sugary and delicious : *Quality*, "best." *Productiveness*, said to be unusually great.

RAVENSCROFT.—This valuable watermelon originated with Col. A. G. Summer, of South Carolina.

Size, large : *Form*, oblong : *Skin*, dark green, faintly striped and marked with green of a lighter shade, and divided, longitudinally, by sutures, from an inch and a quarter to two inches apart : *Rind*, not more than half an inch in thickness : *Seed*, cream color, tipped with brown at the eye, and having a brown stripe around the edge : *Flesh*, fine red, commencing abruptly at the rind, and extending to the centre : *Flavor*, delicious and sugary : *Quality*, "best."

BRADFORD.—The Bradford is a highly prized South Carolina watermelon.

Size, large: *Form*, oblong: *Skin*, dark green, with gray, longitudinal stripes mottled and reticulated with green: *Rind*, not exceeding half an inch in thickness: *Seed*, yellowish white, slightly mottled, and with a yellowish brown stripe around the edge: *Flesh*, fine red to the centre: *Flavor*, fine and sugary: *Quality*, “best.”

ODELL'S LARGE WHITE.—This immense watermelon originated with a negro man on the property of Col. A. G. Sumner, of South Carolina.

Size, very large, sometimes weighing sixty pounds: *Form*, round: *Skin*, gray, with fine green network spread over its uneven surface: *Rind*, nearly three fourths of an inch in thickness: *Seed*, large, grayish black, and not numerous: *Flesh*, pale red: *Flavor*, fine: *Quality*, “very good:” *Productiveness*, said to exceed that of most other kinds.

The large size, and long-keeping quality after being separated from the vine, will recommend this variety, especially for the market.

W. D. BRINCKLE', M. D., *Chairman*.

POMOLOGICAL GOSSIP.

THE CANADIAN CHIEF GRAPE.—This grape, which we noticed in our last volume, (XXII., p. 131,) as a new variety, supposed of native origin, has attracted considerable attention among grape growers, and from its early maturity and reported hardiness in so northern a climate as Canada, has led to the belief that it would prove a most valuable acquisition. Deeply interested in the introduction of a variety of so much importance to any cultivator of this fruit, we have taken especial pains to learn the origin and history of the Canadian Chief, and to see and taste the grape. This we have had an

opportunity to do through the kindness of Mr. W. H. Reid, who first made us acquainted with the variety, and who sent us fine specimens of the fruit last October, the bunches being very large and handsome. He also, at our request, furnished us with the history of the original vine, so far as he could learn anything authentic in regard to it. We copy his communication:—

“ I boxed up for you this day two clusters of the Canadian Chief, with a good strong cutting with foliage on for your examination. . . . I have just returned from Hamilton, yet during my stay there I called on Mr. Reid, gardener to Sir Allen McNab, who informed me that the Chief was first brought to him by a gentleman from the south of France, from whom the Rev. Mr. Brennan obtained a bud and succeeded in getting it to grow, in whose garden it bore the present year an enormous crop of near one hundred clusters, weighing from $1\frac{1}{2}$ to 4 pounds each, in the open air, on a lean-to trellis $8\frac{1}{2}$ by 5 feet. I never saw a vine bearing so large a crop before, and remarked to Mr. B.—‘ You cannot look for grapes next year on this vine—you have made it do too much—never can mature them all.’ ‘ Oh, yes,’ he replied, ‘ the Chief can do it.’

“ Yet it is strange that no one could ever get the first word from Mr. B. touching its origin. I have tried him twice to no purpose, but Mr. Reid says he knows the gentleman who brought it from France. This is enough, as Mr. Reid is a scientific man and in every way good authority (settled). My plants are now two years old, and very strong; some shoots of the present year are a plump inch in diameter; its wood is much stronger than Isabella or Catawba, foliage smaller, something after the Sweetwater, as you may see. The clusters I send you are of the smallest size. Mr. B. showed me where he had cut the fruit off for exhibition, and for different parties, &c.; the two bunches are from the original vine, and the cutting from the vine purchased from Mr. Brennan by myself. These all prove correct, but all those obtained from Mr. Swords prove to be the Sweetwater.

“Yet Mr. Swords’ Sweetwater has stood unprotected eighteen years, and still continues to bear larger clusters, free from mildew, and so very fine that some of our Rochester neighbors were thrown into ecstasies when they saw it at our fairs, and did not recognize it as the Sweetwater. I think its location is the cause of its greater excellence, standing, as it does, in many decomposed limestone rocks, &c.

“You have now the Canadian Chief, true, sent you; if the other is true, all is well; if not, give it a trial. If there is anything in acclimation, &c., you will see.—*Yours*, W. H. REID, *Port Dalhousie*, Oct. 13, 1856.”

The grapes sent us were very large, compact clusters, much shouldered, and weighed upwards of a pound each, and greatly resembled the Sweetwater in the color, shape, size, taste, &c., of that old grape; the only distinction we could discover was in the form of the cluster, which was more shouldered than any we have ever seen or produced. That it is a FOREIGN grape there is not the least doubt, as the information obtained by Mr. Reid proves it to be. But what the variety may be we could not so well decide. Several of the old French grapes have never been fully identified. It may be the Royal Muscadine of Speechly, which Lindley says may be readily distinguished from the White Muscadine of the same author, by the wood and foliage growing remarkably gross and strong, and often producing bunches weighing six pounds. Lindley himself considers the Royal Muscadine of some authors and White Muscadine the same, only altered by circumstances of situation and growth. When grown in the highest condition it has been called the Royal Muscadine, and at the present time the White Muscadine and Chasselas of Fontainbleau and Sweetwater are considered by many grape-growers identical. If they are distinct we are inclined to consider the Canadian Chief as the genuine Royal Muscadine.

Without, however, deciding the question it is enough to know it is not a native seedling, and its hardiness in a climate less variable than that of Canada,—where the Sweetwater

has stood for eighteen years without protection,—as well as its freedom from mildew, remain to be tested.

THE CONCORD GRAPE.—Considerable has been said in various papers relative to the comparative earliness of the Concord and Isabella grapes. Several cultivators in New York, N. Jersey, and other States, who gave their opinion at the Pomological meeting in Rochester in September last, all agreed that the Concord was from a week to ten days earlier than the Isabella. Even this short period is a great gain over the latter, which rarely ripens, except in sheltered situations, in New England. But the Concord is yet too recently introduced to have a fair trial, and it is therefore with pleasure that we copy the opinion of one of the best cultivators in Maine, and an old correspondent, Col. Gore, of Freeport, which he sent to the *Rural Intelligencer* as a reply to the conflicting statements in regard to the comparative earliness of the two grapes. Whatever may be the condition of the Concord in other more southern States, it proves that in the colder regions it maintains its early maturity:—

“I have been some interested in the discussion upon the merits of grapes for out-door culture. It is well known that the Isabella grape has been cultivated in Massachusetts for many years, and has been considered the best variety for open culture, it being very prolific and of excellent quality, and although it originated in a warmer climate, it has proved sufficiently early to mature its fruit in favorable locations almost every year; while in our State, particularly in towns bordering upon the sea coast, it can be ripened only in the most favorable seasons by the best cultivators and in sheltered positions.

“The great desire of fruit growers has been to procure a variety or varieties, which would combine the good qualities of the Isabella, and ripen its fruit in all parts of New England. The result has been, that we have added to the list of grapes suited to our climate, the Diana, Concord, Northern Muscadine, Rebecca, &c., all allowed by experienced cultivators to be earlier than the Isabella, and very hardy, and some are considered even of better quality. A number of

the new kinds have been on trial but a short time, and of course their comparative merits cannot be fully understood. Let them all have a place in our catalogues and gardens; and then, by comparing notes from year to year, they will be as well known by the community as the older kinds of apples and pears. Judging from the reputation of the varieties named, it will not be necessary to condemn either of them, no more than a good apple, a Baldwin for instance, because the Early Harvest is earlier, the Custard Sweet is sweeter, or the Esopus Spitzenburg is of finer flavor, but let all kinds be cultivated for its own merits and peculiarity, and let us rejoice when new and better varieties are introduced. But to the point:

“I set a Concord grape in May, 1854. It has made a good growth, and produced last season thirty-six bunches of fruit, of good size and large berries. The vine is in line with our Isabella, of about ten years' standing, which has ripened its fruit well in favorable seasons. The Isabella was a *Maine* vine, the Concord from *Massachusetts*, thus showing a difference of acclimation in favor of the Isabella. The vine started in the spring, flowered, and the berries set about the same time, but the Concord grew much more rapidly, and by the first of October was two or three weeks in advance of the Isabella.

“Since writing the above I have received your last paper, in which I notice the *public* have sufficient evidence of the comparative earliness of the Isabella and Concord grapes, but shall forward this to you for your particular benefit.—*Yours truly,* WILLIAM GORE.”

TWO NEW APPLES.—Mr. J. W. Dodge, of Tennessee, who cultivates a large orchard of apples, and took the premium for his fine specimens at the Tennessee State Fair, last October, describes two new seedling apples in the *Ohio Cultivator*. We copy his account of them:—

Sweet Mary.—One of his seedlings is a sweet apple, enormously large, fine in appearance and delicious in flavor; color golden yellow; form even round, slightly oblong; rather spicy, rich, crisp and juicy; very fine for table or

baking. The tree is rugged and erect, and a handsome grower. In compliment to his wife he has named it Sweet Mary. He finds no sweet apple superior, if equal, to it in flavor, and none equal it in size. The Sweet Mary ripens in July in Tennessee.

Cumberland Black.—My other fine seedling is a very large subacid winter apple, keeping well through the spring. It is extremely dark, a deep red in the shade, and a crimson black in the sun, with a deep bloom without stripes. Form roundish oblong, slightly tapering at the base, very regular in shape and size. Flesh yellowish white. The tree handsome and spreading, but not too open, a very prolific bearer. It is one of the best cooking apples I know of, as it melts like butter. It is fine for dumplings, and also first rate out of hand toward spring. It is a rich, high flavored, juicy fruit, and I consider it in every particular a No. 1 apple. I call it from our mountain, upon which it originated, the Cumberland Black.

THE CATAWISSA RASPBERRY.—In our last volume we gave a full account of this new raspberry, which has attracted much notice.

We now invite attention to the announcement of Mr. Peirce, in our advertising pages, that he is ready to furnish plants at a liberal price. We had an opportunity of seeing a fine specimen of Mr. Peirce's plants at the late meeting of the American Pomological Society, at Rochester, N. Y., in September last, and was much pleased with its appearance. Dr. Brincklé pronounced it the best bearing raspberry he had yet seen, and moved to place it on the list of those which promise well. Col. Wilder, president of the society, said he entertained a favorable opinion of this fruit, and sustained the motion of Dr. Brincklé. It was added to the list. It surpasses, we think, any of the imported ever-bearing sorts, both in the abundance as well as quality of the fruit.

NEW STRAWBERRIES.—The late Dr. Edmunson, of Baltimore, produced several fine seedling strawberries, which have been exhibited before the Maryland Horticultural Society, taken prizes, and are pronounced superior varieties.

Since the death of Dr. Edmunson, the stock has been purchased, we believe, by Messrs. Feast & Sons. The following are the names, with a brief description of each:—

Marylandica.—A staminate variety, distinct in every feature from any other, vigorous grower, having taken the first prize for the last four years at the Maryland Horticultural Society, for being the largest and best fruit exhibited; flesh firm, of a rich dark crimson, fine flavor and keeps well; has been frequently sent to New York; were firm and fresh when opened.

Harlem Orange.—A pistillate variety, orange color, pine apple shape, rich glossy appearance, flavor good, prolific bearer, will bear carriage as well as *Marylandica*.

Charles Favorite.—A seedling from Hovey's seedling; size, shape, flavor and color similar to the same, but ripens ten days earlier.

FRUIT AND FRUIT TREES IN MICHIGAN.

BY T. T. LYON, PLYMOUTH, MICH.

I send you the conclusion of my remarks on the adaptation of the climate of Michigan to the growth of fruit trees.

APPLES.

Apples have been cultivated in Michigan almost, if not quite, since the first settlement of the country by the French, and orchards of seedling trees, planted by the old habitans, still abound along the navigable waters of our peninsula, where their colonies were located.

When the tide of Anglo-Saxon emigration began to roll westward along the great lakes, its earliest waves, yet chiefly drawn from New England and New York, disseminated themselves mainly in Ohio and Michigan; bringing with them that taste for the culture of fruit which characterizes their native region. At that time, nurseries, both here and at the east, were comparatively rare; and settlers, in many instances, brought with them the seeds of fruit, from the

product of which, they and their neighbors planted their orchards. Such trees, on coming into bearing, usually produce fruit of poor quality, and have been usually top-grafted with such varieties as had been known to the owners at the east.

As the demand induced the establishment of nurseries, many of our later orchards have been made up, in whole or in part, of root-grafted trees; thereby giving us the means of instituting a comparison of the two modes of propagation.

Prior to 1855, the comparative mildness of our seasons had induced the opinion that our State, (especially the central and southern portions of it,) was almost the Eden of the apple tree, and any damage to the trees, growing out of the severity of the weather, was almost, if not entirely, unheard of; while our virgin soils, and bright skies were esteemed especially favorable to the growth of fine, rich, and highly flavored fruit. The fact that the winter of '55 and '56 was so severe upon our apple orchards, may, perhaps, be explained, as in the case of peaches and pears, from the effect of a moist summer and autumn, occasioning late and imperfectly ripened growth; followed by a winter of great and long continued severity.

From the results manifest in this vicinity, it may be inferred, that trees are most liable to suffer from this cause at about the period of falling into bearing. With such trees, the injury was shown chiefly at, or near, the surface of the ground—never below; but often extending a short distance above. It was not always discoverable at first, but, as the season advanced, it was shown by a spot of dead bark, sometimes extending entirely around the trunk. As the deep snows of the previous winter, in most cases, kept the trunks covered far above this point, and also so effectually covered the earth that it was free from frost during the entire winter, it is inferred, that the comparatively mild temperature of the earth on the one hand, and the severe, but constantly varying temperature of the atmosphere above, on the other, would necessarily subject the intervening body of snow, about the

base of the trees, to great vicissitudes, amounting, sometimes, to a change from 32° above to nearly 25° below zero, within a few hours. Such changes, operating upon an immature growth, with its sap vessels still loaded with the moisture taken up in the moist, warm weather of autumn, may be esteemed a sufficient cause of the unlooked-for calamity under which we are suffering.

Within the observation of the writer, this catastrophe seems mainly to have affected root-grafted or low-budded trees of the apple, and those of comparatively few varieties. In an orchard containing about one hundred trees of Roxbury Russet, nearly every root-grafted tree, (perhaps one fifth of the whole,) is either wholly dead or seriously injured. Baldwin, Esopus Spitzenberg, and Early Strawberry are injured in about the same proportion, while many other varieties have suffered slightly. It may, however, be fairly supposed that this is one of those occasional visitations to which even the most favored regions are occasionally subject.

The experience of the past few years has led some individuals to fear that the warmth and dryness of our climate would prove too favorable to the increase of insect enemies, especially the "borer" and the "apple-worm," which, certainly, have made themselves very much at home with us, and whose ravages call loudly for a remedy.

The drought occasionally affects the quality of the fruit in poorly tilled orchards, but, in this region, we have not failed to receive at least a moderate crop, during the last twelve or thirteen years. During the past year, notwithstanding the previous severe winter, the crop was fair, both in quantity and quality.

The small fruits, such as currants, raspberries, gooseberries, blackberries, and strawberries, as might be inferred from the great abundance of the wild varieties, are entirely at home with us, although, on account of the greater dryness of our summers, deep tillage is indispensable to the highest success, which is of course enhanced by a resort to watering and mulching, and especially so in the case of strawberries, which seek their nourishment nearer the surface.

Almost every garden contains a few plants of the Isabella, or Catawba grape, which usually ripen tolerably well, and we observe an occasional show, at our fairs, of foreign grapes, of good quality, grown in the open air. It is, however, believed that very few persons give that thorough culture which is necessary to produce, in our climate, the full flavor of which it is susceptible.

THE MANETTI ROSE STOCK.

BY THOMAS MEEHAN, GERMANTOWN, PHIL.

DEAR SIR,—The value of the quince stock for dwarf pears has been ably sustained in your Magazine, and I should suppose the question may be considered as fully answered in their favor. Before the interest in the case has entirely died away, I beg permission to introduce a kindred topic—not, perhaps, one affecting such vast interests as the quince question, but yet one of great importance to all interested in floriculture.

Several catalogues of well-known houses that I have recently seen, contain something like the following—“Budded roses being now conceded to be worthless, we propagate only on their own roots.” I have once before taken occasion to inquire in what way they have “proved to be worthless,” and I had hoped that some reasons would be given. It is with budded roses as with the quince stock. When it fails to accomplish its purpose, the failure is not its fault, but lies with its manager. I visited the grounds of a friend last summer who is very partial to roses, and has quite a superior collection; most of them are budded on the Manetti stock. The Perpetuals were doing pretty well, but the weaker growing kinds were very poor indeed: my friend was at a loss to account for their inferiority. I pointed out to him the cause. He had neglected to cut out the shoots from the stock, and had tied them up carefully, not observing that they were otherwise than the real Simon pure. In

two years at the farthest, his choice roses would have been no more, and I have not the least doubt but that my friend would have been added to the number of those who "find that roses will not do grafted on the Manetti stock."

So far from believing that roses are injured by this mode of propagation, I look on the discovery of the Manetti stock as an era in rose culture. The man who first used them for that purpose deserves a more lasting testimonial of our regard than he who may have raised the finest varieties. The Eglantine, or Dog Rose, the stock of the European rose grower, has been found quite indifferent in our climate, while the Manetti has proved everything we can wish. Its capacity to form standards has been tested, and it is found to answer admirably. The increased activity which the introduction of standards will give to rose culture can scarcely be appreciated; and with a climate admirably adapted to ripen rose seed, we may yet be as famed as rose raisers and rose growers, as our French friends now are.

In the course of the discussion on the dwarf pear, and indeed on several other occasions, I have noticed the same fault; there was a tendency in some quarters to suggest that information or opinions from nurserymen are not reliable. That there may be a few men amongst them who, for mistaken self-interest, would garble facts, I will not for a moment deny; but that they are any more numerous than others, who, not nurserymen, are committed to various opinions, and who, for a mistaken or misplaced consistency, would garble facts to maintain their position, I hold to be quite as possible. Such persons are to be found in all classes of society, and all professions, and I think it very unjust to single out the nurseryman—the one of all others in the horticultural pursuit the most likely, from the extent and variety of his opportunities of observation, to arrive at correct conclusions in disputed matters. In this case, however, though a nurseryman, I have no budded roses for sale, so that in volunteering a few words in their behalf, I shall not be suspected of having selfish purposes to serve, by the very few who might otherwise, perchance, be tempted to suppose so.

We are pleased to receive so good a vindication of the claims of the Manetti rose stock, from one so capable of expressing an opinion as Mr. Meehan. A good deal has been written in the English gardening journals both for and against it, and several cultivators deny its value, while others, and by far the greater number, maintain its superiority over every other kind that has been tried for the purpose.

We long ago made up our mind, after some experience, that a budded rose—on the Dog stock—was as worthless a thing as a man could plant in his garden. Though tolerably well adapted to the milder climate of Britain and France, it was entirely unfit for our latitude, neither capable of withstanding our summer's sun or winter's cold, and sure to disappoint the expectations of all who relied upon it to form standard plants. Our experience with the Dog rose extends over thirty years, during which time we have planted hundreds of standards, not one of which do we think lasted more than two years—or three at the farthest—and all, with a single exception, are now dead and gone.

Not such is our experience with the Manetti. On the contrary, plants now budded three years have improved in health and vigor, and form bushes three times as large as the same varieties of the same age on their own roots. Indeed we had almost given up the culture of some of the more delicate hybrid perpetuals, until we found they could be made vigorous bushes on the Manetti. We agree with Mr. Meehan, that the introduction of the Manetti stock is an important era in rose culture, and that the discoverer of it is entitled at least to the lasting gratitude of every lover of this "queen of flowers."

In this estimate of the Manetti we would not be misunderstood. We do not mean to say, because it is so fine a stock, that all roses should be budded upon it. Far from it. Such varieties as have a robust and vigorous habit naturally we would always prefer on their own roots, but the weaker growers and more feeble sorts we would work on the Manetti. And for standards or half standards it is the only stock yet introduced which possesses a hardihood of constitution adapted to our severe climate.

THE ROSE.—No. 3.

BY PROF. C. G. PAGE, WASHINGTON, D. C.

RECURRING to the characteristic of "*hardiness*," it must be remembered that transplanting or setting out Tea roses here in the fall, cannot be adopted as a rule of practice without great risk. Such winters as this and the last would prove their certain death. If the winter, however, should happen to be so mild that Tea roses should put forth in February, (an occurrence not unfrequent,) the transplanted bush being backward will be the least liable to injury. During the past month of January the weather has been more severe than last winter, and as it has been very detrimental here upon tender roses, especially the Teas, it may be well to note all perfectly hardy kinds this season. The thermometer at Peirce's nursery, near Washington city, was as low as 19° below zero, Fahr., at his house, and 33° *below zero*, in the valley below.

ON NEW ROSES.—There are two kinds of new roses, those raised from sporting branches and those from seeds, and we may also include as a third kind, Perpetual roses produced from shy bloomers by repeated fall budding. Paul says that "the French florists have an ingenious way of obtaining Perpetual roses. If a Damask, or other annual bloomer, produce a chance bloom in the autumn, buds are taken from this and successive autumn-blooming shoots, from year to year, till an abundance of flowers are obtained in the autumn." Sports are not very common in roses, but when observed should always be perpetuated, if the variety is worthy of attention. The Moss rose is a *sport*, and also several of our variegated Perpetuals. The pleasant little rose so strangely named "Fortune's Five-colored," occasionally puts forth a beautifully striped rose, and I have now in progress some experiments upon this *sport*, of which the results may be known this year. The great feature, however, of rose culture, is the production of new varieties from the seed, and in this, as in all arts of high culture, we look to the east for light and sustenance. But the time has come when we can

and *should* look at home for "new roses." A correspondent from Washington, Mississippi, writes me—"this is truly the land of roses." About two years since a lady of high intelligence and taste on seeing what I considered a good new rose, remarked that she had raised many, much better, from the seed, at home in Mississippi, and that most of her roses were raised from the seed. This rose was a decided improvement upon Pomponne de St. Radegonde, which it resembled in habit. The remark may have been tinged with a little prejudice of *home preferences*, but there can be no doubt that the Southern States offer as fine a field for rose culture and the origination of new roses as any country on the globe. There is no reason why we should not send *new* roses to France in exchange for those we import, and when rose culture shall become more an object of attention at the South, we shall not import so many *old* roses from Europe. I have no means of accurately knowing, but presume that not less than one hundred thousand roses are imported annually from France and England. There are over ten thousand imported by one rose dealer in this city. For the production of new roses the pecuniary temptation is by no means trivial. It is commonly reported that the proprietors of the celebrated Augusta rose realized a very handsome amount from its sale, although it has not much merit as a novelty, so little does it differ from Solfaterre. A yellow Noisette, "Isabella Gray," brought from South Carolina about two years ago, is preferred here. The history of Devoniensis is a good example of the worth of a valuable new rose; I have it upon the authority of G. C. Thorburn, of Newark, N. Jersey, one of our pioneers in floriculture and the first importer of this rose. It was raised from the seed by a cottager in Devonshire, Eng.; Mr. Pince, of the firm of Lucombe & Pince, of the Exeter nurseries, happened to see this rose in passing, and was so much struck with its charms that he induced the cottager to part with it for ten guineas; after he had propagated it, he took it to London and sold in one day one hundred bushes, for one hundred and ten pounds. The Duke of Devonshire bought five at a guinea

each. The day for *distinct* new roses has not yet gone by ; we should rather suppose it had but just commenced. It may be safely estimated that a *distinct* new rose, of fine qualities and good growth, should be worth at least five hundred dollars to its owner, without any special management. Perhaps the answer to these remarks may be, that the difficulty of raising roses from the seed, and the uncertainty of getting distinct roses, (perhaps one out of a thousand,) are enough to discourage the attempt. These objections are more imaginary than real, as we shall soon see.

THE CHERRIES.—(*CERASUS*.)

BY WILSON FLAGG.

THE cherry exceeds all other fruit trees in those qualities which are valued for shade and ornament. It surpasses them in size, in the comeliness of its growth, and in the beauty of its foliage and fruit. All the species are handsome trees, and some of them attain a great height and size. They are natives of all the countries in the northern temperate zone, but they are not indigenous in any region south of the equator. Besides the cultivated cherry trees, there are three native species that rise above the height of shrubs in the New England States. These are the Black Wild cherry (*Cerasus serotina*); the Choke cherry (*C. obovata*); and the Northern Red cherry (*C. borealis*). There is also a trailing species called the Sand cherry, (*C. pumila*), that bears an eatable fruit. Of these four species, the two first bear their fruit and flowers in racemes, and the last bear them in umbels, like the garden cherry.

The Black Wild cherry, (*C. serotina*), is a middle-sized tree in Massachusetts ; but South and West, in some parts of New York, and especially on the banks of the Ohio river, it attains an extraordinary height and size, sometimes rising to one hundred feet, according to Michaux, with a

corresponding diameter. In this State, I have never seen a tree exceeding the height of twenty-five feet. This species differs in its mode of growth very obviously from the common cultivated cherry. The latter sends up a single shaft, and gives out its lateral branches in whorls, arranged in stages one above another, like those of the fir tribe. The Black Wild cherry, on the contrary, is subdivided in a manner somewhat peculiar to itself, but without any regularity, or any tendency to an arrangement in whorls. It has also a more slender spray, and forms a round head, while that of the garden cherry is inclined to assume a pyramidal shape. The leaves of the two trees are also entirely different, those of the foreign species being broad, ovate and rough, while those of the American tree are oblong or lanceolate and smooth, resembling the leaves of the peach tree. The one bears its flowers and fruit in racemes, the other in umbels. The trunk and bark of the two trees are similar, and they resemble one another in the properties of their wood, that bears about an equal resemblance to birch and mahogany. For a shade tree, however, the foreign species is preferable, exceeding the other in the beauty of its flowers and foliage, as well as in the excellence of its fruit.

Of the cultivated cherry trees, there are evidently two distinct species, the *Mazard*, from which all the esteemed varieties have originated, and the *Red cherry*, which is a small round headed-tree found in rustic gardens. I have seen this last species growing wild. It bears a better fruit than the original *Mazard*, but it seems not to have been improved by culture. This species has no tendency to arrange its branches in whorls.

The Black Wild cherry, or cabinet cherry, with respect to beauty, is not more than a second-rate tree. It does not equal the white birch, though it resembles it. Its branches, though not crooked, are straggling and never compact; so that when the tree is in full foliage, it affords only a flickering and imperfect shade, like the willow. The sun will penetrate through the whole mass of foliage of any common-sized tree of this species. They are still graceful and comely

trees, and highly ornamental when wreathed with flowers, or hanging with fruit. In the autumn the leaves turn to a pale yellow, with a mixture of pale crimson, not at all exceeding those of the foreign tree in the beauty of their tints. The latter are, in the autumn, pleasingly marked with tints of crimson and orange, mingled with green and some intermediate colors.

There is a vast difference in the quality of the fruit of different trees of this species. Nearly all of them produce a bitter fruit, with a very meagre pulp, while others bear a fruit quite equal to that of the small Mazard. There is reason to believe, from this circumstance, that the fruit is susceptible of improvement, and that, with proper culture, it might be made a valuable garden fruit. At present we seldom find a tree whose produce is worth the trouble of gathering it. The best of the kind which I have seen, is found upon trees that grow upon the margins of salt water creeks; and it may be that this tree, like the plum-tree, is favorably affected by the salt or by some other property of the ocean. The cherries are greedily devoured by robins, wax-wings and some other birds, and are eaten readily by swine. This species of the cherry tree is said to possess the singular property of causing a poisonous eruption and swelling upon the face and hands of some persons, similar to that which is occasioned by the poison sumach.

The Choke cherry, (*C. obovata*,) resembles the preceding species in the character of its foliage, and in its flowers, which are borne in racemes. It is a smaller tree, however, seldom more than a shrub, though it sometimes rises to the height of fifteen or eighteen feet, and forms a very comely round-head of branches and foliage. The principal beauty of this tree lies in its blossoms, which are larger and more brilliant than those of the Black or Cabinet cherry. The racemes of flowers are not drooping like the fruit, but stand out at right-angles with the branches, completely surrounding them, and causing every slender twig to resemble a white plume. The fruit is also very beautiful, being of a dark red or scarlet, and hanging in large clusters from the branches,

in crowded abundance. This fruit is well-flavored, but uneatable on account of its astringency. Both of the two species just described have a strong propensity to produce suckers from their roots, spreading in this manner over extensive tracts of land, more rapidly than almost any other tree.

The Northern Red cherry, (*C. borealis*,) is a small tree, somewhat exceeding the size of the last species, bearing its flowers in umbels, like the garden cherry, and seldom exceeding the height of twenty feet. It is said to be common on the Blue Hills, on Wachusett Mountain, and on the plains in the middle part of Massachusetts, I have found it in the Manchester and Gloucester woods; it is abundant in the States of Maine and New Hampshire, in new clearings. The stones which have been buried below the influence of the sun and the atmosphere, for several years, spring up in profusion, when the soil is exposed by the felling of the trees, especially if the surface has been burned.

This species justly deserves the name which is applied to it, (*borealis*,) since it is confined to the northern parts of the continent, from Newfoundland, the New England States and Canada to the Rocky Mountains. This tree is of but little value for any purpose, though it might be planted for the birds around the borders of our fields, both to supply them with food and prevent their depredations upon more valuable fruit. The advantages to be derived from wild fruits of various descriptions, when thus used to supply the wants of many valuable birds, cannot be over estimated. The wood of this species resembles that of the Cabinet cherry, but the timber is too small to be applied to any important uses. The fruit is small but agreeable.

There is one other indigenous species, the Sand cherry, (*C. pumila*,) a trailing shrub, rarely found in this vicinity, and seldom rising above a foot in height. This is a shrub which is highly worthy of experimental culture. It bears an eatable fruit, and might be trained as an espalier upon the garden fence, and if susceptible of improvement, would afford cherries within the reach of any person, and which could be cultivated without shading the land.

N. B.—*The Red Birch*.—Mr. B. F. Cutler, of Pelham, N. H., has informed me that the red birch, described in a previous essay, is abundant on the banks of the Pautucket river, and that he has many fine trees of this species in his nursery.

OUR ORNAMENTAL TREES.

BY THE EDITOR.

11. THE LABURNUM. (*CYTISUS LABURNUM, L.*)

AMONG the more familiar trees of the smaller size the Laburnum stands the most prominent. Though long an inhabitant of our gardens, it is by no means so generally introduced as it deserves to be, or so highly appreciated as we could wish to see it. A well-grown specimen, in full bloom, with its pendent racemes of golden blossoms, forms one of the most attractive objects in the whole shrubbery, and by the beautiful green of its trifoliate leaves, richly adorned by its elegant blossoms, gives a peculiar charm to every group of which it forms a part. The growth of the tree is irregular and picturesque, and well adapted to plantations of every kind, whether for the lively coloring of its yellow blossoms, the soft hue of its neat foliage, or the general effect of its somewhat open and branchy head.

The Laburnum, (FIG. 7,) is a native of the mountain forests of Germany, Austria, Hungary, Switzerland, Italy, and of several provinces in France, growing abundantly in woods. There are two varieties or species, viz.,—the common, so called, (*C. Laburnum*,) and the Scotch, (*C. Laburnum* var. *alpinus*). The former flowers earlier than the latter, and is the less beautiful tree of the two, not so vigorous in its growth, nor of so hardy a character. The Laburnum appears to have been known to the Greeks, and Pliny mentions it in his Natural History. It was introduced into the gardens around London as long ago as 1596, when it was cultivated by Gerard, in his garden at Holborn. How long

since it was introduced into American gardens we have no means of knowing, but probably in the time of Bartram, who received many new things from his correspondents. We do not know of any very old specimens in our vicinity.



7. THE LABURNUM TREE.

In the Bartram Garden at Philadelphia, where alone fine large specimens of many of the foreign trees are to be found, there is a Laburnum twenty-five feet high, by fifteen inches in circumference. Our oldest plant is about eighteen feet high, and twenty years old. The largest specimen in the neighborhood of London is forty feet high.

The Laburnum delights in a deep, rich, sandy loam, with a dry sub-soil, in which alone it attains a good size. In lighter and poorer soils, or in damp situations, it makes but an indifferent growth, and in our climate is likely to suffer by the winter, if the location is wet. Indeed it often, while

young, loses some of its young wood in such winters as the two last; but when well established becomes a hardy tree. It prefers a rather shaded place, not too much exposed, as it makes few horizontal roots, and is injured by high winds, and its flowers remain longer in bloom than when grown in the full sun. The growth is erect while young, but its branches take an irregular shape. The bark is yellow; the leaves are small, trifoliate; the flowers appear in pendulous racemes four to six inches long, and are of a bright golden yellow; these are succeeded by legumes or pods, which contain the seeds, and hang a long time. The common Laburnum flowers in May, and is succeeded by the Scotch, which blooms till July. At the same season the Judas tree, White Lilac and several other shrubs display their flowers, which contrast beautifully with its golden tints, and form an agreeable combination of landscape beauty. The Laburnum possesses the desirable property of being entirely free from the depredations of insects.

The Laburnum is readily raised from seed. If gathered in October they may be kept in the pods till spring, when they should be sown in beds of light, rich loam, in the same manner as the Locust, covering half or three-quarters of an inch deep. As soon as they are up, they should be kept free from weeds, and have the attention of seedlings. In the autumn they may be taken up and laid in, in a dry, sheltered place, and afterwards planted out in nursery rows. When of sufficient size, such as are not needed may be grafted with the ring-leaved, pendulous, and other desirable varieties. When worked standard high, these are all fine trees for lawns or conspicuous situations in the pleasure-ground.

“As an ornamental tree,” says Loudon, “the Laburnum has few rivals.” The form of its head, the tint of its blossoms, and the hue of its leaves, at once render it exceedingly attractive, and a prominent shrub for every ornamental purpose.

Gossip of the Month.

CATALOGUES, &c., RECEIVED.—The spring of the year brings with it the new catalogues of our enterprising nurserymen, which we shall endeavor to notice. Those which have reached us are:—

Dexter Snow's 3d annual catalogue of Verbenas, which is one of the most complete description, with directions for their growth. Springfield, Mass.

Daniel Barker's list of new and choice bedding plants, &c., Utica, New York, contains some new seedling Verbenas and fine bedding Geraniums.

W. C. Strong's catalogue of new and rare plants. Brighton, Mass. It includes some fine new Fuchsias, Verbenas, Geraniums, &c.

MICHAUX'S BEQUEST TO THE MASSACHUSETTS AGRICULTURAL SOCIETY.—This distinguished botanist and writer upon American forest trees, whose *Sylva Americana* is one of the most complete as well as magnificent works ever published, died at his residence at Vauréal, near Pontoise, France, in November, 1855. By his will, which has recently been made known, he bequeaths to the Massachusetts Agricultural Society EIGHT THOUSAND DOLLARS, for the purpose of promoting Sylvaculture and Horticulture, and of making experiments in the growth of trees in "sandy rocks and bog soils." The principal portion of the bequest is to be invested for increase in good farm land; cheap and productive land is to be purchased with another portion, and the remainder to be appropriated to seeding and planting the experimental plantations.

This liberal bequest is especially interesting at this time, when attention is being turned to the growth of our native trees, and we trust the Massachusetts Agricultural Society will enter upon the duties devolved upon them by Michaux's will, and carry out, in the most thorough manner, his wishes. It will aid materially in fostering a taste for the growth of ornamental trees.

INTRODUCTION OF CALIFORNIA TREES.—H. Harkness, a nurseryman of Illinois, who is spending some time in California for the purpose of collecting rare and valuable seeds, writes to the *Prairie Farmer*, and gives some account of what he has seen. A shrub which he thinks is called MAUCENETE, is universally found. It is said to grow very near the line of perpetual snow, and ranges down to within about 1000 feet of the valleys. It is a beautiful compact, evergreen shrub, growing about ten feet high, branching from the ground like a Gueldres rose, and is often a foot in diameter at the collar; it must attain a very great age. It is a clean, beautiful summer shrub, and is said to retain a bright lively green during the winter.

Another tree he mentions is the California White Cedar, with a delicacy of foliage so peculiar to the Chinese Arborvitæ, at the same time a gigantic tree, with the graceful proportions of a spruce or Bahama fir. We hope Mr. Harkness will bring home seeds of these, and all others which he thinks may prove hardy.

DR. T. EDMONSON'S COLLECTION OF PLANTS.—The extensive collection of plants belonging to the late Dr. Edmonson, of Baltimore, formerly President of the Maryland Horticultural Society, containing a great number of seedling Camellias, rare Cacti, &c., which have been noticed in former volumes of our Magazine, was disposed of at auction on the 12th of Jan. There was a large attendance of amateurs, ladies, and the florists and nurserymen of the neighborhood, but to the great disappointment of many who were anxious to possess some of the finer specimens, the whole of the catalogue was offered by the executors, and Mr. Thomas Winans became the purchaser for the sum of \$2800. While it may be a source of regret to those who were desirous of procuring some of the fine plants, it is gratifying to know that they have passed into the hands of one who will undoubtedly keep them together, and who is able to give them the attention which such a varied collection requires, affording an opportunity to all lovers of plants to see them, in the fine condition in which they were originally kept. Mr. Winans has already an extensive range of houses, but will increase them to make room for the present addition of Dr. Edmonson's stock.

THE ISABELLA GRAPE IN ROCHESTER, N. Y.—At the late meeting of the Fruit-Growers' Association, in Rochester, Mr. H. E. Hooker, an experienced cultivator, thought that to succeed well in the cultivation of the Isabella, a sheltered location was absolutely necessary. He had never seen a ripe grape which grew in exposed situations. A shelter was necessary in the winter and spring.

PRECOCIOUS APPLE TREE.—Mr. Wilson Flint, of Alameda, California, states that he budded a row of seedling apple trees with buds of the same season's growth of the yellow Siberian Crab. In two weeks the whole row was in blossom, and to-day, (Dec. 13,) I have gathered a quantity of beautiful rosy-cheeked apples as the result. Thus in nine months from the time of planting the seed, I have raised the stocks, budded them, and harvested ripe apples from the tree. Can the world beat this?—(*California Farmer*, Dec. 20, 1856.)

Societies.

NEW YORK STATE AGRICULTURAL.

The annual meeting of this Society was held at Albany, on Wednesday, February 11th. The President, Mr. Faxon, presiding.

The Treasurer submitted his annual report, showing a balance in favor of the Society of \$1140 70.

Dr. Fitch delivered an interesting address, in the evening, upon the destructiveness of insects.

The committee appointed for that purpose, reported in favor of Buffalo as the place of holding the next Annual Fair.

The following officers were then elected:—

President—Alonzo Upham.

Vice Presidents—1st District, Jona. Thorne; 2d dist., W. T. McCoun; 3d dist., Dr. Herman Wendell; 4th dist., J. M. Stevenson; 5th dist., Dr. B. G. Bowen; 6th dist., F. M. Rotch; 7th dist., Willard Hodges; 8th dist., L. F. Allen.

Corresponding Secretary—Col. B. P. Johnson.

Recording Secretary—E. Corning, Jr.

Treasurer—B. B. Kirtland.

Executive Committee—Geo. W. Tiffet, G. C. Dibble, C. S. Wainwright, Solon Huggerford, and Chas. Morrill.

WORCESTER COUNTY HORTICULTURAL.

The annual meeting of the Worcester County Horticultural Society was holden at its hall, in this city, on Wednesday, January 21st. Hon. Stephen Salisbury, who has filled the office of President with so much acceptance for several years past, declined a reelection. His successor, D. W. Lincoln, Esq., is universally conceded to be a most admirable selection for the post. The following officers were elected for 1857:—

President—D. Waldo Lincoln, of Worcester.

Vice Presidents—George T. Rice, of Worcester; John C. Whitin, of Northbridge; William Workman, of Worcester.

Secretary—J. Henry Hill, of Worcester.

Treasurer—Frederick W. Paine, of Worcester.

Librarian—Clarendon Harris, of Worcester.

Trustees—Stephen Salisbury, of Worcester; Jonathan D. Wheeler, of Grafton; J. M. Earle, Edwin Draper, William M. Bickford, and John Lovell, Jr., of Worcester; Joel Knapp, of Sutton; Jonathan Forbush, of Bolton; George Jaques, William Greenleaf, Francis H. Dewey, and S. P. Champney, of Worcester; Asa B. Waters, of Milbury; Job C. Stone, of Shrewsbury; S. H. Colton, of Worcester; John Brooks, of Princeton; Emery Bannister, of Worcester; Joshua Porter, Jr., of West Brookfield; Francis H. Kinnicut and Samuel Flagg, of Worcester.

Auditors—George T. Rice and William B. Bickford.

At a meeting of the Trustees, held at their hall, on Wednesday, Jan 21, the list of premiums was arranged for the coming year, a Committee of Arrangements was appointed for the annual exhibition in September, and a committee was appointed to arrange the various Committees on Premiums for that exhibition.

CINCINNATI HORTICULTURAL.

At the last annual meeting of this Society, the following officers were chosen for the year 1857:—

President—Dr. John A. Warder.

Vice Presidents—Wm. Storms, E. J. Hooper, Dr. Wm. Sturm.

Recording Secretary—I. J. Allen.

Corresponding Secretary—A. H. Ernst.

Treasurer—E. Mills.

Librarian—M. H. White.

Council—G. Heath, R. Reilly, S. W. Hazeltine, J. K. Greene, F. G. Carey, T. V. Petticolas, and J. W. Caldwell.

Standing Committee on Fruit—R. Reilly, A. A. Mullett, W. E. Mears, W. H. Pye, E. J. Hooper.

On Flowers—J. P. Foote, S. S. Jackson, C. Patten, G. M. Kern, and J. Howarth.

On Vegetables—W. R. Fee, D. J. Canett, F. Pentland, W. E. Mears, Geo. Selves.

Massachusetts Horticultural Society.

Saturday, January 3, 1857.—The stated quarterly meeting of the Society was held to-day,—the President in the chair.

The Chairman of the Committee of Arrangements, for 1856, made their report of the receipts and expenditures of the last annual exhibition.

C. M. Hovey, from the Library Committee, submitted the annual report, which was accepted. Appropriated \$150 for the purchase of books for 1857.

The Chairman of the Finance Committee submitted the report for 1856, which was accepted. (We shall give an extract of it in our next number.)

A Committee of Arrangements was chosen for 1857, as follows:—

F. L. Winship, Dr. E. Wight, W. R. Austin, C. M. Hovey, W. C. Strong, P. B. Hovey, H. Bradlee, D. T. Curtis, A. Bowditch, A. C. Bowditch, F. Burr, Jr., E. S. Rand, Jr., and R. M. Copeland.

J. J. Hunneman was elected a member.

The Committee on Publications was authorized to publish the proceedings in pamphlet form, with a list of members.

Adjourned one week, to January 10.

January 10th.—An adjourned meeting was held to-day.

The Committee for Establishing Premiums reported a schedule for 1857.

S. Walker, from a special committee, reported a resolution of thanks to F. Burr, Jr., and an appropriation of \$100, in money or plate, for his valuable services as Chairman of the Flower Committee for two years.

Chester Guild, Somerville, was admitted a member.

Adjourned one week, to January 17.

January 17th.—An adjourned meeting was held to-day.

A committee to settle with Mount Auburn made a report, as follows:—

Sales of lots for 1857,	\$19,742 67
Deduct Superintendent's expenses,	1,400 00

\$18,342 67

One quarter of which, \$4586 67, had been paid over to the Treasurer.

P. R. L. Stone, of Cambridge, was admitted a member.

Adjourned to February 1.

Horticultural Operations

FOR MARCH.

FRUIT DEPARTMENT.

The latter part of January was severely cold, with a lower range of the thermometer than we have ever known it, and lower, we believe, than it has been during the present century. It fell to 20° below zero on the morning of the 24th. The previous lowest range within our recollection was on the 16th December, 1835, when it fell to 18°. The whole month was very severe. February was milder, with rain, which carried off all the snow and took the frost out of the ground. The 18th of the month was as remarkable for its warmth as the 24th of January was for its cold. The thermometer reached the high point of 68°! As we now write, the weather is more like the last days of March than of February.

Contrary to our observation and experience for some years, the peach buds, notwithstanding the low temperature, do not appear to be much injured: this we can only attribute to the even temperature throughout December and January. So far as we have examined, the cherry buds appear more injured than the peaches.

The season is at hand when the energies of the gardener must be more severely taxed than at any other period of the year. Out-door operations will require great attention, but this must not cause the neglect of the indoor work; both must occupy his thoughts. Planting must be done, pruning attended to, seeds be planted, and the innumerable details of a good garden be looked after with undivided attention. By a due calculation, however, and a preparation beforehand, all may be accomplished without disorder or neglect of any particular department.

GRAPE VINES now will be in a forward state and the fruit in the earliest houses begin to color, while those in the greenhouse or late vinery will be in bloom. The former will need less attention than the latter; beyond airing opportunely and keeping an even temperature, there will be little to do: in the latter, however, there will be more work; the vines will be in that stage when they will require a slightly advanced temperature, less air, and due care as regards sudden changes. Disbudding or rubbing off superfluous shoots should be attended to, with a liberal distribution of water to keep a genial and moist atmosphere.

Vines in the open air may soon be pruned, if not done before, and neatly trained to the trellis.

PEACH TREES, in pots, will now have set their fruit, and will need a more liberal supply of water. Fumigate, if the green fly appears, and keep down the red spider by funes of sulphur.

FIGS in pots, now showing fruit, should be frequently syringed and liberally watered.

STRAWBERRIES in pots, now in fruit, should have an abundance of air and free supply of water.

SCIONS may yet be cut and preserved in earth or moss.

SEEDS of pears, apples and quinces may be planted in beds as soon as the ground is in good condition.

PRUNING should be continued whenever the weather will admit.

GRAFTING may be commenced at once. Cherries and plums are more certain if the work is done early in the season.

RASPBERRIES may be uncovered the last of the month, tied up to the stakes and shortened in.

CURRENTS AND GOOSEBERRIES should be pruned.

WASHING TREES for the destruction of insects should be done now, taking advantage of fine warm days for this object.

CANKERWORM GRUBS will now run, and every tree which they infest should be well tarred or guarded against.

FLOWER DEPARTMENT.

The greenhouse should now be gay with a profusion of flowers. The Azaleas, so ornamental and showy, will be in full bloom; and these, with the few remaining Camellias, the Acacias and Heaths, alone make up a fine display. Keep everything in the neatest order. Such plants as Oxalises, &c., now done flowering, may be removed to make room for Achimenes and other plants coming into bloom.

The preparation of plants for bedding out will now occupy attention. Frames should be in readiness to harden off the stock, preparatory to removing to the open air. This must be done gradually and cautiously or they will receive a check which it will take a long time for them to recover from.

Seeds should now be sown in order to have a fine display early in the season: a little attention to this will add much to the beauty of the garden in June and July. Our springs are so late that, before seeds can be planted in the open ground, half the season is gone before they begin to flower. A frame placed in a warm situation, and covered at night in frosty weather, will answer every purpose; and if the seeds are sown in pots, and the young seedlings subsequently transplanted, they will be ready for planting out in the open ground early in May.

PELARGONIUMS will now be advancing rapidly. Shift and tie out the plants if they require it, and keep them more liberally watered. Air freely, and keep down the green fly by frequent fumigation. Give the plants more room as they attain a larger size.

CALCEOLARIAS.—These will now have become stocky and strong, and they should not suffer for pot room, as it soon throws them into bloom. Shift and encourage a vigorous growth.

CAMELIAS will now begin to grow, and will need a slightly higher temperature to make them break freely and start vigorously. They should also be freely syringed and liberally supplied with water at the root. Now is the time to inarch young plants.

AZALEAS, as soon as their bloom is over, should have all the long, straggling shoots headed in, and some of the superfluous wood cut away. If

thus kept and well syringed, they will break strong and make much finer plants.

CINERARIAS, coming forward for a succession of bloom, should now have another shift into larger pots. Keep down the green fly.

ACHIMENES AND **GLOXINIAS** will be growing more rapidly as the season advances, and should have a shift as soon as they require it.

FUCHSIAS, intended for fine specimens, should be repotted often, before they get pot-bound. Use a rich and light compost.

JAPAN LILIES, potted early, will now require larger pots. Any bulbs remaining out of ground should be planted immediately.

MONTHLY CARNATIONS, which have grown vigorously, may have a shift into larger pots.

ORANGE TREES, which need repotting, should now be attended to before they begin to grow. If already in large pots, remove the old soil and top-dress with some good rich compost.

ROSES in small pots, now shifted, will make fine large plants for turning out into the open ground in May.

HEATHS, which have done blooming, should now be kept in a cool situation in the house, or removed to frames where they can be hardened off before warm weather. Shift all that it is intended to keep in pots during the summer.

PANSIES raised from seeds last month should now be transplanted to a frame, or into boxes.

BEDDING PLANTS, of all kinds, should be removed to frames as soon as the weather is settled, protecting them from frost by a good covering of mats.

SEEDS of various annuals, &c., may be sown now in pots, and forwarded in frames or in the hotbed.

FLOWER GARDEN AND SHRUBBERY.

The month of March will bring with it preparations for spring work, one of the first operations being the levelling, raking and rolling the walks after the winter frosts, which usually leave them rough and in bad condition. The lawn may also be rolled, unless too wet; but advantage should always be taken before the earth is too dry for this operation. Pruning shrubs, roses, &c., may be commenced at once, and the border have a rough cleaning.

FRAMES, in which carnations, daisies, lilies, &c., have been wintered, should be well aired in good weather, in order to harden them off after their long confinement.

HERBACEOUS PLANTS may be uncovered as soon as the weather will admit.

TULIP BEDS should be partially uncovered, if the weather continues favorable.

GROUND for early planting may be trenched or dug, to be in readiness for use next month.

THE KITCHEN GARDEN.

No department of gardening is more important than the growth of good vegetables, and yet none receives less attention. Because, under our bright sunshine and with our genial atmosphere, vegetables of every clime attain a moderate degree of excellence without much care, it is generally thought quite useless to spend extra time and expense in their production. This, however, is a mistaken idea. For when we reflect that all must eat to live, and how great is the supply required for the demands of every family, it must be apparent that the quality of these necessaries of life should command our serious attention. Whoever has had a good opportunity to judge fairly between poorly grown and superior cultivated vegetables, must have become well convinced that the difference is far greater than is generally admitted, and that no considerations but those of actual necessity would induce those who have once enjoyed the luxury of the latter to content themselves with such as are the ordinary product of our gardens.

Look through our markets and note the quality of the vegetables offered for sale. A portion—small enough, however—will be found of the most unexceptionable quality, large, thrifty, succulent and tender; but by far the greater part small, tough, and fibrous, scarcely fit for use. These are the cheap garden products—though dear at any price—and hence are raised to supply such a demand. But it is to be expected that inferior vegetables will find their way to the market, though it is to be regretted that the good are the exception, while the reverse should be the case.

But if such is the condition of our market products, if of a necessity the inferior are raised with the good, it should not be the case where they are produced in the gardens of amateur cultivators for their own consumption, when no more care is requisite to raise the best than those of poorer quality.

The same routine of culture must be performed and an equal amount of labor required. The results depend upon other causes, simple enough to those who know what they are, yet difficult to the uninitiated, viz., the proper preparation of the soil, and a selection of the best varieties for culture. These being right, inattention to minor details, though it may somewhat lessen the abundance of the crop, will not prevent a successful product. It may be well, therefore, to offer some hints as to the best mode of accomplishing these objects.

PREPARATION OF THE SOIL.—It is the common practice of many cultivators to select some out-of-the-way spot to raise their garden vegetables; often the most indifferent piece of soil, and still oftener left in its natural condition, as if good enough for the growth of vegetable products. This, however, is just the reverse of what should be done. In making a vegetable garden, the first thing should be to see that the soil is *deep*, second that it should be rich, and third that it should be moderately dry. The first can be obtained by trenching, the second by manuring, and the third by draining. It is, of course, presumed that if the object is to raise early vegetables, a naturally warm piece of ground is selected, or at least a warm locality, for it may so happen, as it frequently does, that the best situation to be found is the least adapted to the purpose. It should then be made suitable by such a preparation as we have indicated. The best soil naturally is a light sandy loam. Such is the composition of the West Cambridge soil, where the best and earliest vegetables are produced for the Boston market; this locality is famous for its asparagus, early peas, cucumbers, tomatoes, &c. The soil is soon mellow and friable in the spring, which enables the cultivator to plant early, and it is dry and hence absorbs heat rapidly, which renders it peculiarly suitable for early vegetables, as well as such winter crops as spinach, chicory, &c. For later crops, unless deeply trenched, it suffers from the drought, but as earliness is so important an object, it compensates for the loss of depth and moisture which other heavier soils possess. But it may be

made—and often is so—deep enough to compete with the best loams. Such is the soil, or one of similar composition, best adapted to the growth of superior vegetables.

But we rarely select our gardens and grounds with any view to the growth of such important products. We rather look for ornamental effect, extent of prospect, or natural beauty, and hence, if the soil is clayey, heavy, and unworkable, or shallow, sandy and dry, it must be rendered rich and friable by suitable additions and judicious tillage: in the former case, by deep draining, the addition of coarse manures, and sand; in the latter, by deep trenching, fine manures, and clay. All we can do is to select the most suitable spot at our command, and bring it into that condition which good culture requires. Though much may be done to make a heavy and cold soil warm and light, it can never compete with the lighter one for early maturity. A light soil is therefore preferable for the growth of vegetables. It can be trenched, and trenching is the real secret of high cultivation. The famous market gardens around London, which supply that great city, are trenched after almost every crop, and the excellence of their produce attests the superiority of this mode of culture over all others.

Let it always be borne in mind, that **DEEP CULTIVATION** is the key stone to success. If the soil is thin, do not fear to spoil it by turning up some of the sandy substratum; it is where it can be easier reached than it was before, and the good soil is where the roots are likely to go; liberal top-dressing and the action of the atmosphere will soon convert it all into a fertile mould, and gradually, with subsequent trenching, a depth of two to three feet may be obtained on what is termed a dry thin soil. Managed in this way, there would be less complaints of the suitability of soils to the growth of vegetable products.

SELECTION OF THE BEST VARIETIES.—The next requisite to success, after the preparation of the soil, is a selection of the best varieties of vegetables for cultivation. In the rapid improvement which has taken place in the growth of new varieties, it would be insane not to avail ourselves of the

best kinds that can be procured, but adhere to the old things because they are well known, while we are ignorant of the new. What if, occasionally, we are taken in by the grandiloquent description of some huge potato or prolific pea. We can never know what a thing is till it is tried, and if even one in ten prove superior to what we already possess, the acquisition is a great one. If improvements were so apparent that every new variety must be so distinct that the merest novice could detect it, we should soon change the entire character of our garden vegetables. These improvements are slight, but they are, nevertheless, veritable changes for the better, an example of which we have in the Champion of England pea, so much superior to the old Imperial, to which undoubtedly its origin may be traced; and in the round tomato, so much more beautiful than the old scalloped-shaped; and a third in Darling's sweet corn, which now brings this delicious vegetable to our table at a time when, heretofore, we only had the hard, dry and tasteless sorts; with this and the Old Colony Sweet, we have it now in eating nearly three months. We might mention other examples of marked improvement in our vegetables, but these are sufficient to show the importance of encouraging these improvements, and of testing their value, though we may occasionally lose our time as well as our patience in so doing. Such egregious humbugs as the ground cherry speculation should not induce experienced cultivators to look with a cautious eye on every new variety that is brought to notice. It may serve to put them on their guard, but should not cause them to reject what may prove a valuable acquisition.

And above all, when a judicious selection is made, see that the seeds are fresh and of genuine quality. Never purchase seeds as you would a coat or hat; here you have an opportunity to see what you are buying, if your eyes are open. But with seeds it is a different affair. True, you may know they are seeds, but of what quality none can tell till it is too late to rectify the error. The reputation of the dealer is the only evidence you can have that they are what they are represented to be. Half of the disappointment in

vegetable growing comes from this circumstance. An early pea proves a late one; a long cucumber, a short one; an early cabbage, a late one; a marrow squash, a huge pumpkin, and similar changes throughout the whole catalogue. By all means buy your seed carefully, prepare your ground as we have directed, and if you are not repaid with the best of vegetables it will be from causes beyond your control.

THE SCIENCE OF CALTHONICS.

WE have often thought the term *landscape-gardening*, as used to signify the whole art or science of rural embellishment, a very imperfect one. We are not alone in our objections to this word. Several English writers have expressed objections to it, as not sufficiently comprehensive. Gardening implies only the operations of the garden, and although these alone are sufficiently extensive to constitute a science in themselves, they do not comprehend the general improvement of landscape. The joining of the word *landscape* to that of *gardening* adds but little to the comprehensiveness of the last word, and increases the vagueness of its signification. It still implies gardening and nothing else. Sir Walter Scott complained of this term as narrowing down the art to a mere mechanical practice. He says: "This art is unfortunately named. The idea of its being, after all, a variety of the gardening art, with which it has little or nothing to do, has given a mechanical turn to the whole profession, and certainly encouraged many persons to practice it, with no greater qualifications, than ought to be found in a tolerably skilful gardener."

Hence it has come to pass that every English gardener, who has learned, mechanically, the art of laying out gravel-walks and parterres, and other appurtenances of the garden proper, advertises himself, when he emigrates to this country, as a *landscape gardener*, although he has no general ideas beyond what may be styled artificial grounds. The

term is very well used to signify all that such a man, who has obtained his ideas from mechanical practice, ought to be expected to know. But if it be used to signify all that noble science which is elucidated in the works of Whately, Price, Gilpin, Loudon, and Repton, it signally fails to answer the purpose. Another English writer, in the *Quarterly Review*, follows Scott in his disapprobation of this term. He says, "Scott very justly finds fault with the term *landscape gardening*. If such a word as *landscaping* be inadmissible, it is high time to find some phrase, which will express the laying out of park-scenery as completely distinct from gardening, as the things themselves are." The term recommended by this writer would also be too limited, since it would be confined to park scenery, and would not embrace gardening. Some phrase is required which should comprehend the whole science of beautifying and improving the face of nature. We are pleased to see that our correspondent, Wilson Flagg, in an article written by him, and published in the last number of the *North American Review*, has, prompted by Sir Walter Scott's suggestion, endeavored to place the whole subject in its true light, and to mark out the boundaries of that science which the term *landscape-gardening* has been unsuccessfully used to express. This science, according to the Reviewer's suggestion, ought to receive a new name—"One so compounded as that it shall not be narrowed down to signify the mere mechanical practice of one particular art. This new term should include all general operations for the improvement of the face of the country, concerning art as well as nature, and the pasture and the farm no less than the park and the garden; and having no more reference to ornament, than to those accidental combinations of the different objects of nature and art, which, without positive beauty, produce a pleasing effect on the mind."

The term which the Reviewer recommends as a substitute for *landscape-gardening* is *Calithonics*: a word compounded of two Greek primitives, *kalos*, *beautiful*, and *kthou*, *earth*, signifying, when combined, *beautiful earth*, or

landscape. The word, therefore, may be used with propriety to comprehend the whole art or science of embellishing nature. In the word *Calithonics*, the *k* in the primitive *kthon*, is omitted for the sake of euphony.* Hence the practitioner of the art would be named a *Calithonist*. Both of these terms are sufficiently expressive and sufficiently euphonious, we should think, to meet with general approbation: and we should not be surprised if they were adopted by all concerned.

The writer defines *Calithonics* as “the science of the *sublime*, the *beautiful* and the *picturesque*, both of nature and art, as applied to the improvement of the face of the country. It comprehends, therefore, within its sphere, not *gardening* alone, but also *architecture*, *dendrology*, *geognosy*, or *geoscopy*, *road-making* and *monumental sculpture*.”

We will briefly condense the substance of his remarks on this classification.

1. *Dendrology*. He includes in the science of *Calithonics* all that part of *dendrology*, or *forestry*, which relates to the grouping and arrangement of trees and shrubbery, for the purpose of making them pleasing objects of sight. It concerns the outward character of individual species; their manner of growth in a forest, in a grove, or on the open plain; and their effects in all situations. It considers the value of trees as ornamental objects, the beauty of their forms and foliage, and the importance of their shade and shelter.

2. *Gardening*. The Reviewer considers *gardening* as *not* the most important branch of this science; and includes it only so far as the garden may be thought to affect the general aspect of the country. The construction of gravel walks, fountains, parterres, and all such minute, practical operations do not belong to the province of the *Calithonist*, any more than the carpenter's part in the construction of a house. He regards the particular style of laying out the garden as the legitimate province of the gardener. The

* In the North American Review, it is accidentally printed *Caliothonics*, without omitting the *k*, according to the writer's intention.

science of Calithonics looks upon this as a matter of only secondary importance.

3. *Architecture.* This is a very important branch of the science in the opinion of the Reviewer. The practitioner should possess a knowledge of all that part of architecture which considers the effects of the different kinds and styles of buildings, in landscape, and the laws of beauty as applied to the disposition and arrangement of them, with respect to other works of art and to natural objects. It considers the *morale* and the *picturesque* of architecture; but it has nothing to do with planning or architecture.

4. *Geognosy or Geoscopy.* This part relates to the management of ground, to the inequalities of the earth's surface, and to the beauty and picturesque effects of the different forms occasioned by these inequalities. In this branch is likewise included all that may be said concerning water; it is in fact one of the leading branches of the science of Calithonics.

5. *Road-making.* It may at first seem somewhat absurd to the reader to find road-making introduced in this connection. But it is truly important to the beauty of a country in a variety of respects, as may be apparent to every one who has considered the effect of the laying out of roads upon the beauty of our prospects when making a journey.

6. *Monumental Sculpture.* This branch of the art ought perhaps to have followed Architecture, on account of its near relation to that art. It is embraced in this new science so far as it concerns the style of the different descriptions of monuments, which are exposed to view, by the road-side, in the garden, in the public square or in the cemetery.

According to the writer of this article, it is not expected that the practitioner of *Calithonics* should be a practical forester, gardener, architect, sculptor or engineer. He confines himself to the study of the general pleasing effects of the several objects that belong to these different arts; and the manner in which they affect the eye and the mind of persons of ordinary intelligence and sensibility. We observe that he does not include the art of painting among the col-

lateral branches of this science. A moment's reflection will show that he is right in this omission; for although the student of Calithonics may derive many theoretical and practical hints from the study of paintings, yet paintings are not included, like trees, roads, buildings, gardens and sculpture, into a landscape. They are but the copies of scenes produced by the combinations of these different objects. We should have the same reasons for including surveying and many other arts into this science, as painting. We will proceed no farther with the subject, but refer the reader for a full elucidation of the writer's opinions, to the North American Review.

NEW PEARS.

BY T. RIVERS, SAWBRIDGEWORTH, ENGLAND.

THE following account of several new pears we copy from the Gardener's Chronicle; Mr. Rivers is one of the principal collectors of new fruits, and his correspondence with the Belgian Pomologists enables him to add all the more recent kinds to his collection. As the climate of Great Britain is less favorable to the perfection of the pear than Belgium, it will be interesting to our cultivators to know the experience of Mr. Rivers, as it will enable them to see how far their qualities are altered or affected by climate. Most of the varieties Mr. Rivers names are already growing in several American collections, and many of them have already been proved; the others are yet too new to judge of their real merits.—ED.

There is a fascination in new pears almost equal to that in new roses and new plants; but this is not felt in England to anything like the extent it is on the Continent, and more particularly in Belgium. Whether or not the theory of Van Mons is correct, it is undoubtedly to his collection of seed-

ling pears we owe very many excellent varieties, and some of those lately sent out are remarkable for their hardiness. The way they manage in Belgium about sending forth to the world the new pears from the Van Mons collection, and also those (with other kinds of fruit) raised by M. Grégoire and others, is perhaps interesting, and a few words about it may not be out of place.

Some few years ago the whole collection of seedling pears raised by the late Van Mons was purchased by Monsieur Bivort, author of "Album de Pomologie," and transplanted to his nursery at Geest St. Remy, near Jodoigne, in Belgium. I saw them there two or three years after their transplantation, and well remember the surprise I felt on seeing such large and tall pyramids, many of them twelve and fifteen feet in height, and upwards of twenty years old, succeed so well after being removed many miles, and planted in a soil not very favorable to their well doing. A few years since M. Bivort discontinued his business of nurseryman, and originated a society for the distribution of his new pears, under the title of the "Société Van Mons," and under the patronage of the King of the Belgians. The members of the society pay an annual subscription, and are entitled to receive grafts only of pears, plums, cherries, and apples, and plants of strawberries and raspberries. The society at present, judging from its catalogue, has not entered into the culture of other kinds of fruit. The number of subscribers now amounts to two hundred and upwards, the major part of which are residents of Belgium. France comes next in the number of members. A few Bohemians, Hungarians, Americans, and (last and least) one Englishman, fill up the catalogue. A list of the subscribers is published annually; the members who first joined the society are called the founders, and have the privilege by rotation of naming the seedling pears of the Van Mons collection after they have been tested by the society and thought worthy of cultivation. Three new pears from the collection were thus named in the early part of the present year, after the three first names on the list of founders, viz., Madame Adelaide de

Réves, Seraphine Owyn, (so named by M. Owyn of Courtrai), and Napoléon Savinier; these are all described as "de toute première qualité," the first two ripening in October, the latter from January to March. The greater part, however, of the new pear grafts sent out were from seedlings of M. Grégoire, who, if we may judge from the descriptions attached to them, is likely to rival or even surpass the late Van Mons or Esperen in the excellence of his seedling pears.

Their names and season of ripening are as follows: I may add they are all first-rate in quality, as decided by the jury of Belgian Pomologists:—Colmar Delahant, January and February; Commissaire Delmotte, end of January; Dr. Lentier, October; Hélène Grégoire, October; Iris Grégoire, December and January; Léon Grégoire, January and February; Nouvelle Fulvie, January and February; Rousselet Vanderweeken, December and January; Dr. Nelis, November and December. With the exception of the two latter, the fruit of which is small, the second of medium size, these are all described as of first size, and consequently likely to add some valuable varieties to our list of late pears. It must, however, be some few years before they can be fully tested in our climate. I find from long experience that varieties of pears which are invariably good in Belgium and France sustain their character in all the southern, south-western, and south-eastern parts of England, but that a variety that fluctuates with soil and season in the above countries is scarcely worthy of cultivation in this country. There are some valuable pears not new to the collector, but new to a great portion of your readers, that are quite worthy of mention, as they have been fully tested in our climate. I have been particularly pleased this season with Alexandre Lambré from the Van Mons collection; this ripened towards the end of November the fruit gathered from a pyramid on the quince; in shape and size it resembles a Passe Colmar; indeed it is of that race (for there are races of pears.) The tree grows freely on the quince, is remarkably hardy, and bears abundantly, as an espalier, pyramid, or standard.

Bergamotte Dussart : in 1854 I thought this one of the most delicious pears I ever ate, its aroma was so delightful ; it has not however sustained its high character ; it ripens in December, and as so many fine pears ripen in that month it is not worthy of extensive cultivation. Not so however with Prince Albert (V. M., *i. e.*, from the collection of the late Van Mons,) which is likely to prove one of the most valuable hardy pears we have had introduced for a long time ; the tree is a beautiful and luxuriant grower either on the pear or quince, and does not seem to know how to canker. It is not so precocious in bearing even on the quince as some other kinds. My specimen tree, budded on the quince stock and now some five or six years old, is full of blossom buds, so that it will doubtless prove a good bearer when of a tolerably mature age ; the quince stock is most highly favorable to it, but few pears grow with equal vigor on it. It is in shape much like Beurré Rance, not quite so large, is melting, very juicy, with something of the flavour of Passe Colmar, keeps till March and will probably in some seasons keep longer ; we have thus a most valuable late pear worthy of extensive culture.

Alexandre Bivort is another excellent kind of pear ; we owe this to the collection of the late Major Esperen ; it is named after Monsieur Bivort, the director of the Société Van Mons, and seems well adapted to our climate, grows well on the quince but is better adapted for an espalier or spreading bush than a pyramid ; the fruit is of medium size, greenish yellow, melting, and juicy, with a delicious aroma ; it ripened here in February last and is well worthy of culture.

Maréchal de la Cour, (V. M.) or as it is called in Belgium Conseiller de la Cour, is worthy of a place in every garden although it ripens in November when so many good pears are in season ; in vigorous growth on the quince it rivals Prince Albert, but does not form so compact a pyramid, as its habit is spreading something like that of Beurré Diel. When it made its first appearance it was said to be an especial favorite of the late Van Mons ; no pear can be more melting and delicious, and it has a peculiar agreeable aroma,

unlike that or any pear I am acquainted with ; in size it is about the medium.

Dr. Trousseau (V. M.): this large and most excellent pear commenced to ripen towards the end of last December, and continued good till the middle of January ; it is melting, very juicy, with a delicate vinous flavor exceedingly grateful ; the tree is very hardy, grows well on the quince, and is better cultivated as an espalier or dwarf bush than as a pyramid.

Beurré Bennert (V. M.): this is a pretty round pear rather below the medium size, of a bright yellow when ripe ; the tree is very hardy and will not canker, but succeeds better on the pear than on the quince. My specimens ripened about the middle of last February ; they were not however equal in quality to the description given me by Mr. Bivort, from whom I received the variety ; it deserves further trial.

Leopold the First (V. M.): this is a most excellent January pear ; the tree forms a delightful compact prolific pyramid of slow growth, just one of those trees that will grow into beauty without much trouble in pruning.

Passé Tardive (Esperen): this is a long keeping pear which has been in my collection some years, and has risen and fallen in estimation more than once ; it is a great bearer, and flourishes as a bush or low pyramid on the quince, and probably if planted against a wall with a warm exposure it will prove really good. My specimens kept sound till the end of last May ; they were not rich but soft, juicy, and agreeable. If grown as a bush or low pyramid it should have a warm corner and light warm soil.

In writing about this late pear I am reminded of another which has been placed among kitchen pears, but which I think may be found worthy of better treatment ; this is Léon le Clerc de Laval (V. M.) which is one of the largest and handsomest pears in cultivation, keeping sound till June and July, and then becoming soft and eatable. Now I am inclined to think that if it were planted against a south or south-west wall it would ripen in April and May and become a good dessert pear ; it is really worth the experiment.

Bezi d'Esperen (Esperen): this very excellent pear has been by some of the Belgian Pomologists confounded with Bergamotte Esperen. It is of the same race, but the tree is inclined to be thorny, and it is much more vigorous in its growth; it also ripens from one to two months earlier, generally early in January, whereas the Bergamotte ripens towards the end of March, and often keeps well all through April. I received the Bezi about twelve years ago from the collection of Major Esperen, who then lived at Malines, and at the same time the Bergamotte, Josephine de Malines, Fondante de Malines, and a very late pear, which seldom or never ripens, called Bonne de Malines, of course quite distinct from the Winter Nelis which sometimes goes under the name. The Bezi d'Esperen is a most luxuriant grower on the quince stock, nearly equal to Prince Albert in that respect, and bears well as a pyramid, being quite hardy; it is round, with much of the Bergamotte shape, of medium size, and melting and very good without any distinguishing aroma.

Bergamotte d'Esperen may be described in few words: it is one of our best very late medium sized pears, of the Bergamotte shape, very hardy, a free grower on the quince, and a most abundant bearer under all circumstances.

Gansel's Late Bergamot: this was raised by the late Jno. Williams, Esq., of Pitmaston, from the Gansel's Bergamot crossed with some late variety (I have mislaid his note sent with it as to its parentage). This is one of the most vigorous growing trees I have ever met with and slow in coming into bearing unless double worked on the quince. My trees bore for the first time in 1855; the fruit, in shape exactly like the Gansel's, but one-third smaller, ripened towards the end of December. In flavor this delicious pear is like its parent, having the same exquisite aroma; the flesh is quite melting and full of juice; it is in truth a late Gansel's Bergamot. Mr. Williams advised that it should be grown only as a standard or pyramid and not trained to a wall.

Doyenné Defais: this is a French variety of pear, raised at Angers; it is full-sized, in shape like the White Doyenné,

or, as pear amateurs would say, of the Doyenné shape, as all or nearly all the Doyenné pears are of a roundish oval with short stalks. It ripened with me the commencement of last January; it is melting, very juicy, with a delicate perfumed flavor, and of high excellence; the tree is hardy, forms a handsome pyramid, and grows freely on the quince.

Beurré Superfin: this most excellent pear was raised at Angers; the tree is inclined to be thorny, is remarkably hardy, and like most pears with that habit is seldom or never inclined to canker. The fruit is as large and of the shape of the Brown Beurré, and its skin is covered with a light russety coat. When first introduced it ripened in September, but latterly it has kept well all through October. No pear can be more delicious, as it is perfectly melting and full of juice of a most refreshing quality. The tree succeeds well on the quince, and comes into bearing more quickly than when grafted on the pear, and forms a healthy nice pyramid.

Poire Prevost (V. M.): this is one of the handsomest late pears we possess, being, when ripe, of a bright red and yellow. It is also one of our most abundant bearers. I have seen clusters of fruit put forth from the buds inserted in the quince stock, so that a tree budded in August has given fruit the following season. This is very remarkable; it grows well on the quince, but not rapidly, and forms a small prolific pyramid. Its fruit is medium sized, of a highly perfumed or musky flavor; and keeps well till May. These last two seasons it has not softened or become melting, and seems to require a warm climate. It will be therefore advisable to plant it against a south or south-west wall, or grow it in pots in the orchard house. These highly perfumed flavored pears are greatly esteemed by some amateurs.

Of the above pears, noticed by Mr. Rivers, Beurré Superfin and Doyenné Defais have been described and figured in our previous volumes. Bezi d'Esperen is described and figured in another page. All, we are glad to know, have proved valuable varieties.—ED.

DESCRIPTIONS OF SELECT VARIETIES OF PEARS.

BY THE EDITOR.

WE continue our descriptions of pears from our last volume. From some cause the crop of 1856 was not so abundant as that of 1855, and but a small number of the newer varieties produced such specimens as would enable us to form a correct estimate of their merits; we are therefore unable to give descriptions of some of high reputation until the experience of another year. A few, however, which have previously fruited, gave us much better specimens than we have had before, and to such of these as appear to possess desirable qualities we now annex a descriptive account:—

193. FONDANTE DE MALINES.

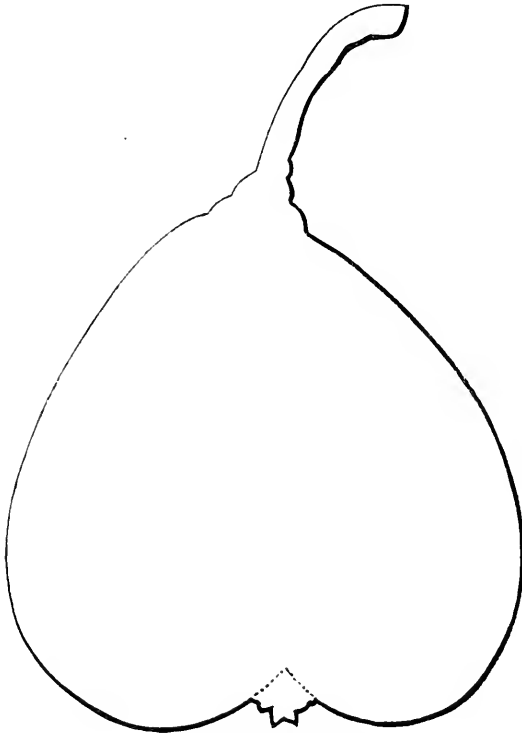
This new pear has been briefly noticed in our previous volumes. It is one of the seedlings of the late Major Espereu of Belgium, who raised the Grand Soliel, Josephine des Malines, and several fine sorts, all chance productions.

The Fondante de Malines (FIG. 8) is thought by some cultivators to be a very fine variety. We have had it in bearing four or five years, but our specimens did not come up, in size and quality, to our standard of a good pear until last season. They were then not only large, but ripened up of a fine golden hue, with a red cheek, and continued sound and in fine order nearly up to December, when they were eaten, and proved half melting, buttery, juicy and excellent.

Our specimen trees are upon the quince stock, in a rather shallow soil and unfavorable situation, which probably accounts for the inferiority of the early specimens; but having become well established, and the last season a favorable one, (the two former years having been very dry,) the fruits approached their true character. It appears to flourish well on the quince. The tree is a somewhat irregular grower, with stout yellowish wood.

Size, medium, about three inches long and nearly three inches in diameter: *Form*, obovate pyramidal, large at the

crown, tapering towards the stem: *Skin*, fair, smooth, dull yellow when mature, considerably freckled and traced with russet, and tinged with pale red on the sunny side: *Stem*, medium length, about one inch long, stout, swollen, wrinkled



8. FONDANTE DE MALINES PEAR.

at the base, attached by a fleshy protuberance: *Eye*, medium size, open and but little sunk in a small shallow basin; segments of the calyx short, connected: *Flesh*, yellowish white, little coarse, half melting and juicy: *Flavor*, rich, sugary, perfumed and excellent: *Core*, large, slightly gritty: *Seeds*, medium size, long, and sharply pointed.

Ripe in October and keeps till December.

194. GERANDO.

Poire Gerando.

In a collection of pears received from M. Jamin of Paris, in 1845, were two trees under this name. With no other

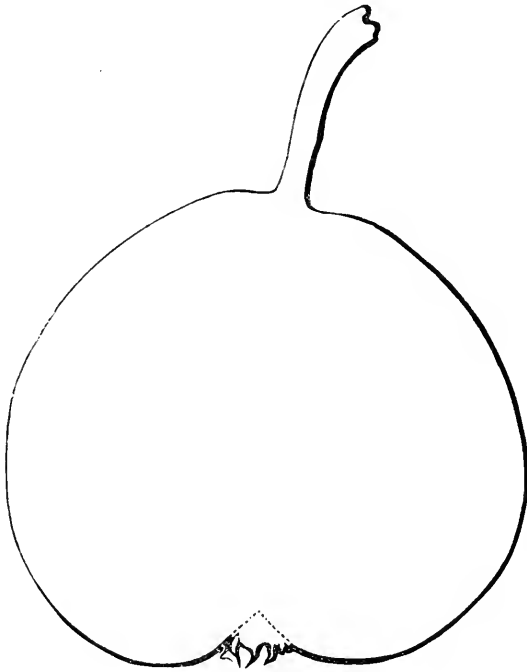
knowledge of them than what was stated in his catalogue, we were wholly ignorant of its real qualities, and, as many of the new pears proved entirely worthless, the Gerando was considered as another of the number. It first bore in 1852 or 1853, a few small and ordinary pears, which did not increase our expectations of its value. Subsequently it produced again, but either from neglect in ripening, or some other cause, the specimens did not show much merit. Last year, however, the tree, which is a perfect pyramid, very vigorous, and twelve feet high, was loaded with large and magnificent looking pears, which led us to watch it more carefully. Specimens were gathered in due season, and placed away in the fruit room, where they ripened up in fine perfection, and proved to be nearly or quite equal to a Beurré Diel. Some of the pears that were exhibited at the meeting of the American Pomological Society at Rochester, were pronounced, by Mr. Berckmans and other good judges, almost equal to that variety, and a decided acquisition.

The Gerando, (FIG. 9,) in the growth of the tree, somewhat resembles the Beurré Diel, making the same stout shoots, but with a more spreading and regular habit. The foliage is large, showy and handsome, and the fruit, which is evenly distributed over the branches, renders it a particularly attractive and beautiful tree. The wood is of a dark brownish hue. It succeeds well upon the quince.

We do not find any account of this variety in the pomological works which we have examined, and suspect it is a new and undescribed pear, or else synonymous with some other variety not yet known to our cultivators. In shape it greatly resembles the figure of the Bergamotte Heimbourg, in the *Album de Pomologie*, a pear which has not yet been fruited in our collection. The description of the tree, wood and growth also correspond. Bivort says the "tree is of a vigorous nature and a superb aspect, forming a beautiful pyramid," which exactly describes the Gerando. The only doubt in regard to their identity, in our opinion, is the statement he makes that it first fruited in 1847, while our tree was received in 1845. As the Bergamotte Heimbourg

will soon be in bearing, we shall have an opportunity to clear up all doubts respecting the two varieties.

Size, large, about three inches long and three inches in diameter: *Form*, roundish obovate, large at the crown, narrowing but little toward the stem, regular in shape: *Skin*, little rough, dull greenish russet, with a mottled yellow and light



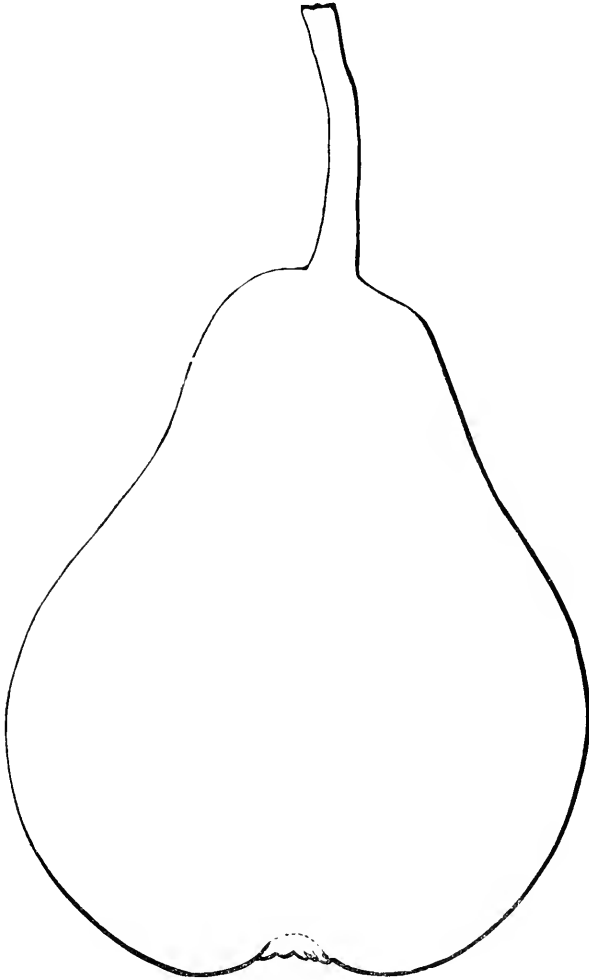
9. GERANDO PEAR.

russet tinge when mature, thickly covered with conspicuous dark russet specks: *Stem*, medium length, about one inch long, stout, curved, and inserted in a very small contracted cavity: *Eye*, large, open, and but slightly depressed in a very shallow basin; segments of the calyx short, rounded, stiff, projecting: *Flesh*, yellowish white, coarse, melting and juicy: *Flavor*, rich, sugary, and slightly perfumed: *Core*, medium size: *Seeds*, large, broad, and dark brown.

Ripe in September and October.

195. BEURRE' KENNES. *Album de Pomologie*, vol. 1.

The Beurré Kennes is a variety of recent introduction, and has only fruited in a few American collections, not a



10. BEURRE KENNES PEAR.

sufficient length of time, perhaps, to judge of its general merits, but long enough to appreciate the quality of the fruit. It is a seedling of Bivort, the author of the *Album de*

Pomologie, a friend and pupil of Van Mons, who first described it in the *Journal d'Horticulture belge* in 1846, and subsequently in his own work, above quoted.

The Beurré Kennes, (FIG. 10,) according to his description, forms a "pyramidal tree of majestic appearance." It is well furnished with branches, which are horizontal in their growth, and the wood, which is stout, is of a brownish red shade. Our trees are yet young, and have only borne two or three years, but they possess a vigorous habit, and it appears to be an early and abundant bearer. The original tree in Bivort's collection produced, in 1847, more than 2000 pears, many of them of the size of our engraving. The fruit is very attractive in its appearance, with a rich russety skin and brownish red cheek, much resembling the Seckel. It promises to become a favorite variety.

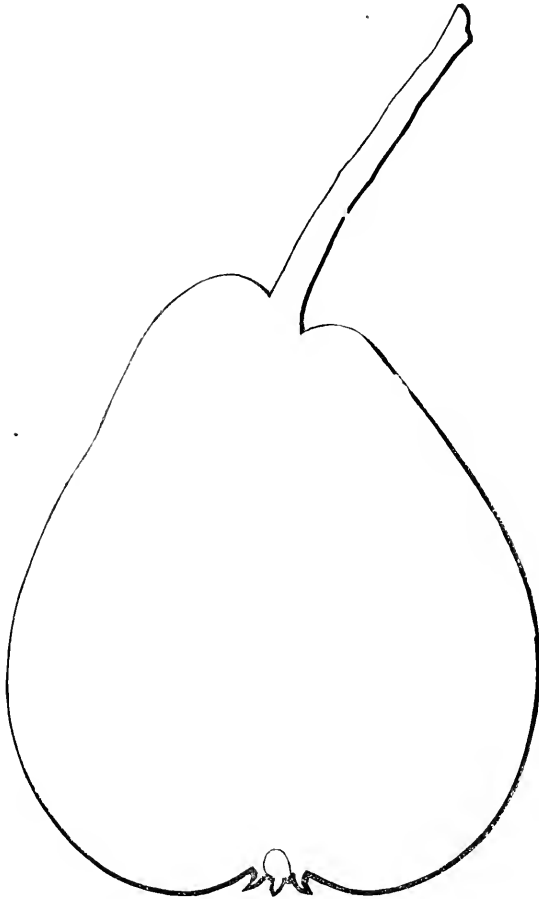
Size, medium, about three inches long and nearly three in diameter: *Form*, oblong obovate, inclining to pyramidal, large at the crown, contracted near the middle and tapering to the stem: *Skin*, slightly rough, dull yellow, nearly covered with brownish russet, tinged with bright red in the sun, and dotted with large russet specks: *Stem*, medium length, one inch long, stout, nearly straight, swollen and fleshy at the base, and inserted, without any cavity, sometimes on one side of a swollen lip: *Eye*, medium size, open, and scarcely depressed in a broad and very shallow basin; segments of the calyx short, reflexed: *Flesh*, yellowish white, coarse, melting and juicy: *Flavor*, rich, very sugary, and slightly perfumed: *Core*, medium size: *Seeds*, medium size, long and slender.

Ripe in October, and keeps well three or four weeks.

196. CATINKA. *Album de Pomologie*, vol. 4, p. 39.

The Catinka (FIG. 11) is still another of Esperen's seedlings, and was introduced into our gardens with a high reputation, which it has not, so far, fully maintained. The trees are yet small, and it may improve in quality. The first pears we tasted, two or three years ago, were very fine, though of small size; but the last year, some large and

showy specimens were not so good as the smaller ones: possibly they were overgrown, or, in the wet season of 1856, were not so high flavored as usual.

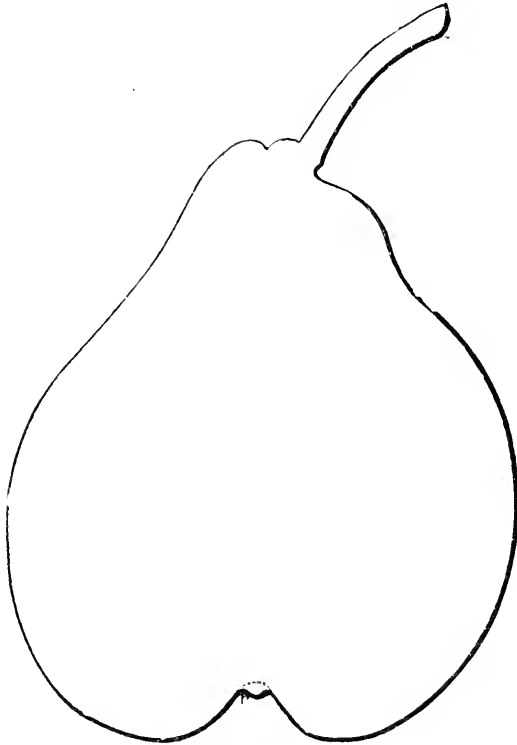


11. CATINKA PEAR.

The tree is of a vigorous growth, but makes rather long and slender shoots of a grayish color. It is an abundant bearer.

Size, large, about three and a half inches long, and three inches in diameter: *Form*, oblong pyramidal, full at the crown, tapering regularly towards the stem: *Skin*, fair, smooth, pale yellow at maturity, thickly dotted with con-

spicuous russet specks and covered with smooth russet around the eye: *Stem*, long, about one and a half inches in length, rather slender, straight, swollen at the base, and obliquely inserted in a very small, contracted cavity, highest on one side: *Eye*, small, open, and but slightly depressed in a small shallow basin; segments of the calyx short, stiff,



12. BEZI D'ESPEREN PEAR.

projecting: *Flesh*, yellowish white, coarse, melting and juicy: *Flavor*, pleasant vinous, slightly perfumed and good: *Core*, large: *Seeds*, broad, slightly pointed, light brown.

Ripe in October and November.

197. BEZI D'ESPEREN.

This is another of the seedlings of the late Major Esperen of Belgium, which has but recently fruited in our American collections, and appears to possess many fine qualities. The

tree is a good grower, exceedingly hardy, and an abundant and regular bearer. Owing to some errors this has been confounded with the Bergamotte d'Esperen, a very different fruit, which ripens in the winter. The Bezi d'Esperen (FIG. 12) is an autumn pear.

Our tree, now eight or ten years old, is of good size, and produced some very fine specimens the last year. Previously they had been smaller, which induced us to think they would be deficient in size. Its only fault is that it falls easily from the tree, though this may have been from neglect in not gathering soon enough. The wood is moderately stout, and of a grayish olive shade.

Size, large, about three and a half inches long, and three in diameter: *Form*, oblong obovate, irregular, large in the middle, rounding off to the crown and suddenly tapering to the stem: *Skin*, fair, smooth, green, becoming dull yellow when mature, slightly traced and dotted with russet, and marbled with a few dark green specks: *Stem*, medium length, about one inch long, moderately stout, straight, and obliquely inserted in a small contracted cavity, on one side of a swollen lip: *Eye*, medium size, open, and slightly sunk in a small, unevenly formed basin; segments of the calyx stout, broad: *Flesh*, yellowish white, fine, melting and very juicy: *Flavor*, vinous, sprightly, perfumed and excellent: *Core*, large, little gritty: *Seeds*, large, dark, and pointed at the base.

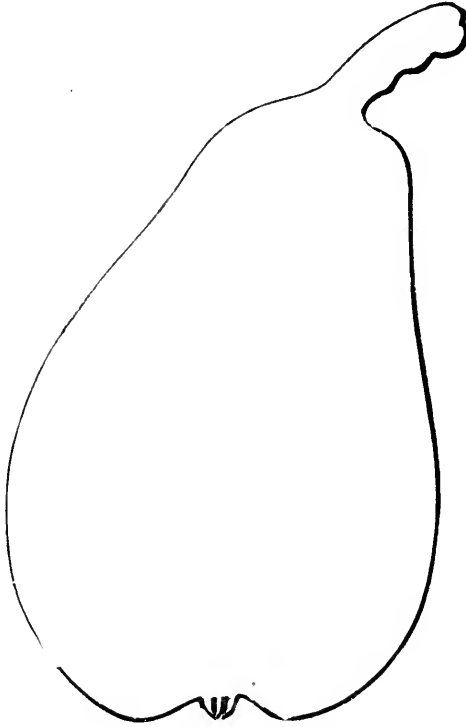
Ripe in October and November.

198. COLMAR D'ALOST. *Belgique Horticole*.

Comtesse d'Alost, of some.

This is one of the most recent of the new pears. According to M. J. de Jonghe, who has given a description of it in the *Belgique Horticole*, it was raised by M. Hethwick, of Alost, Belgium, and first fruited in 1852. It is consequently yet quite new in American collections, and fruited here for the first time in 1855. It is a prepossessing looking pear, of a rather peculiar form, blunt at both ends, with a ruddy cheek, and promises to be a fine variety.

The Colmar d'Alost (FIG. 13) is a vigorous growing tree, of a good habit, and appears well adapted for a pyramid. The trees, however, are yet too young to know whether they will succeed upon the quince. The wood is of a grayish olive.



13. COLMAR D'ALOST PEAR.

Size, medium, about three inches long and two and three quarters in diameter: *Form*, obtuse pyramidal, slightly contracted in the middle, and obtuse at the stem: *Skin*, fair, smooth, yellowish green, becoming deep yellow at maturity, very thickly dotted with large red and russet specks, most abundant on the sunny side: *Stem*, short, about half an inch long, very thick, stout, wrinkled, somewhat fleshy, and inserted in a scarcely perceptible cavity on one side of a swollen projection: *Eye*, medium size, closed, and little

sunk in a small furrowed basin ; segments of the calyx medium length : *Flesh*, yellowish white, fine, melting and juicy : *Flavor*, vinous, brisk, rich, and pleasantly perfumed : *Core*, medium size : *Seeds*, small, rather slender, and mostly abortive.

Ripe in November, and keeps well.

THE POPLAR.—*POPULUS*.

BY WILSON FLAGG.

In early spring, some of the most conspicuous objects in many of the uncultivated districts of Massachusetts and New Hampshire are extensive growths of poplars, hanging full of olive green aments, and spreading the hue of their blossoms over the whole surface. At this period the poplars are very attractive objects, and have the merit of preceding other trees, in the early development of their flowers. These blossoms are, in some of the species, tinted with red and purple stamens, but in the large and small American aspen, they do not vary from a bright olive. The poplars, as a class, are not very handsome trees. They are generally deficient in beauty and depth of foliage, which is imperfect in its verdure, and chiefly remarkable for its tremulous habit and its fragrance. The most of the species have large leaves, rather thinly distributed, seldom dense enough to shade the earth from the direct beams of the sun, so that with their trembling in the wind, when the sun penetrates their mass, they produce in a remarkable degree a beautiful flickering shade.

The poplars are rapid in their growth, and not exceeded even by the willow in the ease with which they may be propagated by cuttings. They will flourish in nearly all situations ; but they prefer a moist sandy soil, which is not boggy. They are particularly useful for planting by the sides of dusty roads, which are used as thoroughfares, where other trees would refuse to thrive. The rapidity of their

growth also renders them highly valuable where a speedy plantation is wanted. On this account they are worthy of cultivation in new settlements which are destitute of trees, to be used as predecessors of a grove of superior kinds. Other trees of more valuable species, planted at the same time with the poplars, would receive from them a needful protection in the early stages of their growth. The poplars, in a very few years, would become large and beautiful trees, while their nurselings were yet in their infancy. When the latter have acquired a good size, their protectors would begin to wear the marks of age and decrepitude, and might be removed. By this method of planting, we may obtain a handsome growth of poplars, which, during the short prime of their life, are as beautiful as the average of other trees; and when they have lost their beauty by age, other trees, which have been fostered under their protection, are large enough to take their places. It is worthy of remark, that while many kinds of trees, like the oak and the elm, grow more and more beautiful as they advance in years, the poplars of every species are beautiful only while they are young and in their prime. When they have grown old, they are unsightly objects, having neither dignity nor grace. Hence we can always remove them without that regret which we should feel on being obliged to remove an old maple, or an old oak.

The wood of all the species of poplar is similar in its qualities, having the softness of pine, without its tendency to splinter, and capable of receiving an indentation without being split. Though highly perishable when exposed to moisture, it is equal to any wood in durability when kept perfectly dry; and it may be used for all common purposes to which the white pine is adapted. The Latin name of this family of trees is *populus*, which signifies *people*. The streets of Rome were anciently shaded by rows of the Lombardy poplar; and hence it was called the people's tree.

There are three poplars which are considered indigenous in Massachusetts: these are the *Small Poplar*, or *American Aspen*; the *Large Poplar*, and the *Balm of Gilead*.

The American Aspen, or Small Poplar, (*Populus tremuloides*), is a very common tree, but it is so little esteemed that it is not often allowed to attain its full size. It is found chiefly in copses, and on the edges of forests; but it is seldom cultivated for shade or ornament, though the other two indigenous species are very common in the enclosures of our dwelling-houses. This tree has a peculiar slenderness of habit, rendered beautiful by the smoothness of its olive green bark, and the straightness of its limbs. The great defect of this tree is the want of density in its foliage and spray. Its small branches are few and far apart, and its leaves are small and sparse. Yet the beauty of these leaves, on a near examination, is unsurpassed. They are somewhat heart-shaped, beautifully serrated, and fringed with a soft silken and purple down. Hence it would be difficult to select a branch from any other tree so beautiful as a sprig of the American Aspen, covered with its newly-sprouted foliage. No other poplar exceeds this species in the tremulous habit of its leaves, which are put into rapid motion by a breeze so soft as to be hardly perceptible to our senses.

This tremulous habit of the foliage is one of the most delightful attributes of the poplar tribe; and it would be difficult to recount all the pleasing images which are awakened by their soft rustling murmurs, as they are shaken in the wind. To my own mind, this sound is deeply suggestive of tranquillity, as it is only during a calm that it is particularly observed. When a strong wind prevails, the leaves of almost all trees are put in motion, and their rustling is universal. But when one is sitting at the window on a still summer day, or sauntering in the woods, or sitting in the shade of a quiet nook, when the winds are so calm that the hum of the invisible insect swarms which are hovering in the atmosphere may be distinctly heard, then is the trembling motion of the aspen leaves peculiarly suggestive of this serenity of the elements. The whirring of the humming bird's wings may then be heard, as he searches the cups of the garden lilies for the insects which are sipping honey from their nectaries. The rustling of the aspen leaves is,

therefore, a highly tranquilizing sound, associated with rest in the languid hour of noon, or with watching in the still hours of a summer night.

When the serenity of the atmosphere is beginning to yield to the movement of a rising tempest, the aspen, by its excessive agitation, gives us a prophetic warning of its approach. Often, on a summer afternoon, the first notice I have received of a rising thunder storm came from the increased trepidation of the leaves of a poplar tree that stood before my study window. Hence, while the rustling of the aspen leaf is allied with the delightful serenity of summer weather, and with those emotions of cheerfulness and peace which accompany these periods, it has likewise a tender expression of melancholy in its tones, as indicative of a general stirring of the winds, that come up with prophetic messages from the dark western horizon.

The second species of this family is the Large Poplar, (*P. grandidentata*,) a lofty tree, of noble dimensions, exceeding in size both of the other species. In the forest it is remarkable for its perfectly straight stem, and smooth greenish bark. The leaves are somewhat larger than those of the small poplar, more pointed and more deeply indented in the margin. Like those of the preceding species, they have a slender and flattened footstalk, causing them to be readily put in motion by the wind. They have a whitish appearance underneath, approaching to the silvery lustre that distinguishes the foliage of the white poplar. This tree, though defective in depth and density of foliage, has a very neat and luxuriant ramification, and is surpassed by very few trees in the elegance of its spray.

Considered in all respects, the large aspen is a very good shade tree, diffusing an agreeable fragrance in the atmosphere, affording a pleasant flickering shade, and requiring but a few years to attain its average height and dimensions. I have seen trees of this species not more than fifteen years old, two or three of which were large enough to afford all the necessary shade for an ample enclosure. But while the planting of these trees deserves to be encouraged, they

should always be accompanied with those of slower growth and more valuable properties, to take the place of the poplars when they have lost their beauty by age. The large poplar in its native habitats, where it has had room for the full development of its branches, and in the prime of its strength and vigor, standing on the edge of a forest or on the banks of a stream, with the whole mass of its foliage trembling in the wind, is surpassed in beauty by few trees of the forest.

The Balm of Gilead, (*P. candicans*,) though, perhaps, not indigenous in this State, is more generally known than any other species, having, for a century past, been extensively cultivated as a shade tree. It is a large tree, of very rapid growth, like the preceding species, and flourishes well in all kinds of situations. The leaves of this poplar are nearly as large as those of the buttonwood, of a brighter verdure than those of the other species, and noted for a peculiar balsamic fragrance. The male and female Balm of Gileads differ very obviously in their appearance, and are sometimes mistaken for two separate species. The leaves of the fertile tree are somewhat larger, and the scales that envelop the buds are laden with more balsam than in the barren tree. The latter, however, is preferable, on account of the absence of the cottony down, which is so abundant in the aments of the fertile tree. This has been more generally cultivated, on account of its greater product of balsam, which is valued for its medicinal virtues. The buds have long been famous as a popular remedy. They are very resinous, yield tacamahac, and, infused in oil, produce a vulnerary balsam.

The Balm of Gilead is seldom seen in its true symmetrical proportions, as there are but few in the land which have not been more or less broken by the wind; for this tree always yields up its branches, one by one, to the assailing tempest, and thus saves itself from an overthrow. Many persons, who allow their regard to fashion to control their taste, even in those matters in relation to which fashion is entirely senseless, have destroyed their old Balm of Gileads, to make place for other trees. The folly of this course is apparent when we consider that any full grown tree is more

valuable than a sapling of the most desirable species. He who cuts down his full grown trees for the sake of planting others of a preferable sort, must remain twenty years or more without any shade. If the space would admit, it would be well to plant the young trees outside of the Balm of Gileads, which might be cut down when the former were sufficiently large to take their places.

THE ROSE.—No. 4.

BY PROF. C. G. PAGE, WASHINGTON, D. C.

NUMEROUS methods of raising roses from seeds have been advised, and most authorities agree in the instructions to preserve the rose seeds in pots in a cool place during winter and plant early in spring. This practice is attended with many difficulties, and in our climate would quite discourage an amateur. The very careful attention indispensable in the nursing of the young plants, screening them from sun and wind, diligent waterings, the slow growth of the plants, the poor chance of seeing any bloom the first year, and the needful protection to prevent their being thrown out of the ground by the first winter, are some of the objections to spring planting. Having tried most of the plans recommended by others, I have finally adopted one which gives most promising results, and will afford the greatest profit and satisfaction to the professional florist, and for the amateur will keep his curiosity on the stretch for six months of the first year, and yearly thereafter, if the pursuit is kept up. To one who has a *penchant* for floral novelties nothing contributes more to his pleasure, or tends more to keep excitement on the perpetual *qui-vive*, than daily visits to a bed of seedlings of his *own sowing* for the production of new varieties. If he should have hybridized for this purpose, then expectation may well go tip-toe all day long, and the reward and gratification will be commensurate, even with but one *signal* result from a "thousand" trials. It is very

difficult to hybridize roses with any certainty or system, for reasons to be hereafter given, and it is probable that a large part of our new roses are chance seedlings, that is to say, the seeds have been sown at a venture, and the valuable kinds selected from the great mass of worthless varieties. Parsons informs us from personal observation of a systematic hybridization by Laffay, and also of the success of Rivers in this way; but yet, with all possible care, but little reliance can be placed upon the operation, and it is perhaps quite as easy to take the seeds at random from a patch of good roses, especially where a little care may have been taken to prevent self-fecundation, and the cross-impregnation left to winds and insects. These points we will consider hereafter, and come now directly to the process of seed culture. According to the extent of your operations prepare a good hotbed frame early in the fall, or any time before the seeds are ripe. Fill it about two feet deep with rich compost earth, say half sod-loam, or good garden soil, and half well-decomposed manure (cow preferred) and an occasional sprinkling of sulphate of lime, or of old lime, as the compost is made up. The liming may be omitted, but not without some loss. Be sure to turn over the compost thoroughly to see that there are no worms or beetle-grubs in it, as they not only will burrow and disturb the surface soil, but the latter will feed on the roots of the plants and destroy them.* As soon as the seeds are prepared for sowing, level the earth carefully with a rake and drop the seeds upon the surface, either in drills four inches apart, or broadcast, and fix your labels. Sift now the same compost, or a lighter

*The grub of the Beetle, commonly called the June-bug—a bronze green beetle, generally appearing in July instead of June—is very destructive to young roses, and often destroys large bushes. I have had many hundreds of seedling roses destroyed by them in one season. Where the roots are small and tender they will commence at the bottom of the tap root and eat it entirely away up to the surface of the ground; and will often girdle the roots of larger bushes. There seems to be no remedy against them, but the destruction of the Beetles by saucers of molasses laid about their haunts, into which they will plunge and become entrapped. This grub is commonly known as the “fat worm” here, and is a sluggish, hideous insect, and when exhumed, crawls upon its back. They sometimes destroy whole beds of strawberry plants, and also whole acres of potatoes. It has been at times very destructive to the potato crop in Europe, and deserves our special attention.

one perhaps, through a sieve, sixteen meshes to the square inch, upon the seeds to the depth of one inch, and thus all the seeds will be at an even depth, and the inch covering, when well watered, will settle to about half an inch in depth. Collect the seeds as *soon* as they are ripe in the fall. Keep the Remontants, Bourbons, Teas, Noisettes, Annuals, etc., each to themselves. The *earlier* the seeds can be gathered the better. Observe that the heps of many roses, particularly the Teas, do not turn red, but are green or russet color when ripe. Sow the seeds as soon as they are picked out of the heps, for a few days' delay will materially retard their germination. Rose seeds, if gathered as soon as ripe and immediately sown, will germinate in two to three weeks, treated as above directed. Sown in November they will be up in December, and continue to come up all winter, so that by February the plants will be several inches high, and by the middle of May the Teas and Bourbons will begin to bloom, and they will continue on blooming until November, and instead of puny plants you may then transplant from this bed strong stocky plants two and three feet high.—I have had plants thus managed five feet high the first season from the seeds, and in bloom from May to November. Remontants thus treated will sometimes bloom *late* in the first season, and instead of waiting three, four, and five years, for Remontants and Annuals, they will generally bloom the second year. Their hardiness will allow them to be left in the bed uncovered the second winter, although a cedar brush protection from sun and wind will be serviceable. The Bourbons and Teas should be removed to the open ground or pots the first season late in November. The luxury of such a seedling bed to the rose amateur can hardly be anticipated. With a bed sixteen feet long, five feet wide, he may see a new rose every day during the summer, and two of the fall months. The bed of course must be well managed. It must be kept well watered, be banked up outside with manure to keep out frost, and above all be *mice-proof* until the seeds are up. I doubt if the professional florist can propagate stocks as rapidly by another method as the above.

I do not know whether our best stock, the Manetti, seeds freely, or at all; but the sweetbriar, an excellent stock for *low* budding, furnishes an abundance of seeds, and a thousand strong plants may be thus raised in a very small space, most of them fit to bud upon the first year.

FLORICULTURAL NOTICES.

DOUBLE CAMELLIA RETICULATA.—A new double-flowered variety of the well-known *Camellia reticulata* was recently exhibited at the London Horticultural Society's exhibition. The Chinese were known to possess such a plant, but it has never before been introduced. It was sent by Mr. Fortune to Bagshot, some years since, from the north of China. He bought it of a Chinaman under the representation that it was a double *reticulata*, which has proved to be the fact. It entirely resembles the *reticulata* in leaf; the flower is a vivid crimson and quite double, and the plant is said to be a much better grower than even that gigantic kind; a bloom on a strong plant, about three weeks since, was reputed to measure five inches and three quarters in diameter, and to be perfectly double; but the one on the specimen shown was not so large, as it was a small side branch. It must be regarded as a great acquisition.

PETUNIA IMPERIALIS, the new double white petunia, is a fine acquisition, particularly to the greenhouse, where it displays its large double white flowers in profusion. In England it has not proved a good bedding variety, owing, undoubtedly, to the moist climate; but, under our warmer sun, it may flourish better, and prove as free a bloomer as the single varieties. When grown in perfection the flowers resemble a double Cape Jasmine.

NEW VERBENAS.—There is quite a large number of new varieties of this fine flower introduced the present spring, among which we notice the following:—

Glory of America, rich orange scarlet, with crimson centre; large flower.

Queen of Summer, beautiful satiny rose, with conspicuous lemon eye; fine truss.

Sarah Elizabeth, blush white, with rich purple centre; fine formed truss.

Isabella, delicate light ground, with conspicuous lavender blue centre; one of the most beautiful in cultivation.

Cerise Unique, beautiful bright cherry, an unusual color, distinct and fine.

Purpurea odoratisima, purple, fine flowerer, and as fragrant as the heliotrope.

The above were raised by Mr. D. Barker, Utica, New York.

Sunlight, (Hovey's,) dazzling scarlet, superb.

Crimson Glow, (Hovey's,) brilliant carmine, new color, with deeply cut foliage.

Orient Pearl, (Hovey's,) blush, with deeper eye, exquisite.

Bijou, (Hovey's,) pink, with crimson eye, very fine.

The following are new English varieties:—

Mrs. Holford, fine waxy white, good petal.

Mrs. Woodroffe, brilliant scarlet, larger than *Defiance*.

Blue Bonnet, (Edmonds'), light blue, large truss.

King of Sardinia, (Edmonds'), deep crimson, white eye.

Præminent, (Edmonds') rosy scarlet, white eye.

Victory, (Edmonds') rosy lilac, large white eye, and smooth petal.

NEW ANNUALS.—Some additions to this valuable class of flowers have been made the last year. Among them the following, which are worthy of attention:—

Verbena incisa coccinea, a new and pretty variety, with finely cut foliage and purple flowers.

Nemesis compacta, one of the most beautiful in cultivation, having the appearance of a small shrub, covered with a profusion of flowers.

Phlox Drummondia striata, beautifully striped.

Sabbatia campestris, beautiful, delicate in habit, bright rose color, yellow stars around the centre.

Saponaria calabrica, delicate pale pink, one of the best bedding out annuals.

344. *HYPERICUM OBLONGIFLORUM* *Choisy*. OBLONG-LEAVED ST. JOHNSWORT. (*Hypericineæ*.) Nepal.

A half-hardy shrub; growing two feet high; with yellow flowers; appearing in summer; increased by layers; grown in light loam and leaf mould. *Bot. Mag.* 1856, pl. 4949.

The acquisition of such a magnificent shrub to the gardens of England causes us to renew our regret that so few of the rich treasures of Himalaya and Nepal have as yet proved hardy in our severe climate. This, like some of the Eastern *Rhododendrons*, comes from an elevation of 6–12,000 feet, and stands perfectly the climate of England; but it is doubtful if it will survive the winters with us north of Washington. If so, it would be an addition to our gardens to be proud of. It is a most lovely evergreen shrub, with foliage resembling the *Kalmia*, and with brilliant yellow flowers, about the size of the Harrison rose: these are copiously produced in large corymbs and literally cover the plants, their golden tints contrasting beautifully with the deep green leaves. The stems are reddish brown. It was introduced by the indefatigable Lobb, the collector of Messrs. Veitch & Son, in whose nursery it has flowered. It will find its way into every English garden.

We hope to see it speedily introduced to American collections. If it does stand our severe winters, of which we have doubts, it will prove a rich acquisition to the greenhouse; or, perhaps with protection in a frame or cellar, bloom readily in the open ground. (*Bot. Mag.*, Nov.)

345. *LEPERIZIA LATIFOLIA* *Herb.* BROAD-LEAVED LEPERIZIA. (*Amarylideæ*.) South America.

A greenhouse bulb; growing one foot high; with yellow and green flowers; appearing in autumn; increased by offsets; grown in light rich soil. *Bot. Mag.* 1856, pl. 4952.

“An ornamental South American bulbiferous plant, native of moist, shady, woody places in the province of Tarma, Andes of Peru, formerly described under the name of *Pancreatium latifolium*. It throws up a stem terminated with eight or ten pendulous flowers of a tubular shape, pale yel-

low, tipped with bright green. It thrives in the greenhouse, where it blossoms in September." (*Bot. Mag.*, Dec.)

346. *CASTANEA CHRYSOPHYLLA* *Doug.* GOLDEN-LEAVED CHESTNUT. (*Cupuliferæ.*) Columbia River.

A hardy tree; growing fifty feet high; with green and golden leaves. *Bot. Mag.* 1856, pl. 4953.

A beautiful tree, which thrives well at Kew, where it is one of the grandest of the arboretum. The leaves are of medium size, deep glossy green on the surface, with the under side of a pale golden hue, occasioned by the presence of innumerable russet peltate scales of that color. The tree was discovered by Douglas in 1830, about the Grand Rapids of the Columbia River in Oregon, and has since been seen by Hartweg and others; but none of these collectors were able to send home seeds. One solitary plant, however, was raised from a seed gathered by Burke, which is now (1856) five feet high, and has for several years produced spikes of flowers, but no seeds have matured. The tree bears the severest English winters unharmed. It would undoubtedly prove a hardy tree with us, coming from so far north, and we trust some of the seeds may be sent to the Atlantic States, by some of the Oregon settlers who appreciate beautiful trees. (*Bot. Mag.*, Dec.)

347. *SINNINGIA YOUNGIANA* *Marnock.* DR. YOUNG'S SINNINGIA. (*Gesneraceæ.*) Hybrid.

A greenhouse plant; growing one foot high; with purple flowers; appearing in summer; increased by cuttings of the leaves; grown in light peaty soil. *Bot. Mag.* 1856, pl. 4954.

A hybrid plant, raised by Mr. R. Marnock some years ago, at the Sheffield Botanic Garden, between *Gloxinia speciosa* and *Sinningia relantina*, having the flower of the *Gloxinia* and the five-winged calyx of the *Sinningia*. In general appearance it is similar to the *Gloxinia*, but the flowers are smaller. (*Bot. Mag.*, Dec.)

348. *TRICYRTIS PILOERA* *Wall.* HAIRY TRICYRTIS. (*Uvulariæ.*) Himalaya.

A greenhouse plant; growing one foot high; with spotted flowers; appearing in spring; increased by cuttings; grown in peaty soil. *Bot. Mag.* 1856, pl. 4955.

Though possessing no striking beauty it is a plant which

cannot fail to attract attention from the peculiar form and coloring of the flowers. These are small, six-celled, starry white, and covered with numerous crimson dots. It is a native of the Himalayas, where Dr. Hooker detected it and sent the seeds to Kew Gardens. (*Bot. Mag.*, Dec.)

349. *LINUM GRANDIFLORUM* Desf. LARGE-FLOWERED FLAX.
(Lineæ.) Africa.

An annual plant; growing one foot high; with crimson flowers; appearing all summer; increased by seeds; grown in good garden soil. *Bot. Mag.* 1856, pl. 4956.

The acquisition of this new *Linum* is already fully appreciated by all our amateur cultivators, in whose gardens it has made so brilliant a display the past year. It is one of the best additions to our annual flowers which has been made for a long time. Of the easiest cultivation, growing in any light rich soil, it should find a place in every border, where its brilliant crimson flowers and slender, graceful habit make it one of the gayest objects throughout the summer. The leaves are narrow, of a glaucous hue, and the plants are covered with its large and superb flowers. It is also well adapted to greenhouse culture, and forms a decorative plant throughout the autumn months. It was introduced from Algiers. (*Bot. Mag.*, Dec.)

350. *MELASTOMA DENTICULATUM* Lobill. TOOTHED MELASTOMA. (Melastomaceæ.) New Caledonia.

A greenhouse plant; growing two feet high; with white flowers; appearing in August; increased by cuttings; grown in rich light soil. *Bot. Mag.*, 1856, pl. 4957.

A very pretty *Melastoma*, of a neat and bushy habit, with very dark green leaves, and terminal heads of white flowers. It was discovered long ago by Labillardière, but has now been first introduced to Europe from seeds sent to the Kew Gardens, where it was raised. It will form a pretty addition to collections. (*Bot. Mag.*, Dec.)

351. *PASSIFLORA TINIFOLIA* Juss. LAURESTINE-LEAVED PASSION FLOWER. (Passiflorææ.) Demerara.

A stove plant, growing eight or ten feet high, with white and purple flowers, appearing in spring, increased by cuttings, grown in light rich soil. *Bot. Mag.*, 1857, pl. 4958.

A small and rather pretty species, belonging to the Gran-

adilla or eatable group of the passion flowers, having ovate leaves, and small flowers, somewhat in appearance like the alata, but not more than half the size. The fruit is described as "globose, yellow, of the size of an apricot, and is probably as excellent and well flavored as that of the other edible species. It is of easy cultivation in a moist temperature and flowers freely." (*Bot. Mag.*, 1857, Jan.)

General Notices.

HOW TO PREVENT MOSS FROM GROWING ON TREES.—How am I to prevent moss from growing on my apple trees? Shall I scrape it off? Can I kill it with any sort of wash? Will it come again? Does it do much harm? Such questions as these, though often answered, are becoming so common that it seems desirable to bring them all under one reply, at this time of the year when whatever has to be done should be done quickly.

No explanation of the manner in which what is called "moss" can be dealt with is worth having unless the reason why it comes is clearly understood. We will therefore at once say that moss or lichen grows on the bark of trees for three reasons:—1, The bark is dead; 2, the bark remains without change; 3, the air around it is loaded with moisture.

It is an invariable law of vegetation that the surface of a tree dies after a time; this may be seen even in young branches, the skin of which has become brown, for brownness is among plants an absolute indication of death, ferns and some seaweeds excepted. As the branch grows older, superficial death becomes more evident, the bark cracking or crumbling away. In this state it is physiologically speaking mere humus or mould, upon which anything will grow, the seeds of which can attach themselves to it and subsist upon the elements of the atmosphere. Lichens fulfil such conditions; their invisible seeds floating in the air fall on trees and hold to them by the mere force of attraction; sprout there, incorporate themselves with the bark, and at last grow up into visible plants. Hence all trees may be attacked by lichens, mosses, and similar plants.

But all trees are not attacked, or at least we perceive no sign of their being so. This arises from the rapid decay, or the frequent sloughing, of the surface of certain trees, the consequence of which is that the ground, so to say, on which the mosses stand is perpetually slipping from under such incumbrances and carrying them away. The ceaseless expansion of the wood brings this about. This year a branch is an inch in diameter, or three inches round, the next year it is one and a quarter inch in diameter,

or three and three quarter inches round. The original surface must therefore occupy three quarters of an inch more than before; but having been already fully formed it has undergone no additional growth, nor will it have stretched beyond a very small amount; it merely gives way beneath the internal distension, cracks, peels off or crumbles away. Under such circumstances the seeds of any lichens that may have attached themselves to the bark must also fall away without having discovered themselves. It is when the bark undergoes change very slowly, if at all, that the lichens have time to establish themselves, and to form the shaggy beards that load some ancient orchard trees; this absence of a sufficient expanding force is owing to the tree having ceased to grow with sufficient vigor; to grow is to form wood, to grow vigorously is to form wood abundantly, to form wood abundantly is to lose surface rapidly; to grow fast is, therefore, to render the presence of lichens impossible. But we may reverse the description; to grow slowly is to form wood slowly, to form wood slowly is to lose the power of casting off the surface bark, to grow slowly is therefore in the highest degree favorable to the presence of "moss."

Now trees grow slowly because either of ill health or extreme old age. The latter is without cure; for the former there is a remedy. Young trees (from seven to seventy five years old) get into bad health from the soil in which they grow being too poor, or too wet, or in some other way unsuited to their constitution. If too poor, manure is a remedy, but this is seldom the case; men rarely plant orchards in sand or peat. It will almost always be found that the fault of the soil is its wetness and its impermeability. The first is attended by a low temperature, and moreover gorges the system of the tree with water, which it can neither throw off as perspiration nor decompose; the second cuts off the requisite supply of atmospheric air, stops rain when the roots most want it, as at fruiting time, and renders it impracticable for the roots to wander freely in search of food. For all this the remedy is deep digging and deeper draining. A moss-grown orchard trenched two spades deep, and drained four feet, will, in any soil fit for fruit trees, rapidly recover its health and keep it. Under such circumstances wood will form fast, bark will peel off, or crack or crumble away, and with the surface the lichens themselves will also go. At the same time the health of the trees will be restored, and good fruit will follow.

But it is not merely because draining relieves the soil of water when injurious, and brings it when the roots most want it, that it is indispensable to the health of orchard trees; it also acts by rendering the air that rests upon the branches itself too dry to suit the constitution of a lichen. Bark may be dead, and may remain in its place for years, and nevertheless the lichens cannot grow unless they find themselves surrounded by a moist atmosphere; getting no nutriment, or very little, from the bark itself, they of necessity feed upon whatever the air contains, and on nothing more greedily than on the water there, without which all other agents are useless. It is needless to point out the enormous difference in the amount of water floating in air which rests upon undrained and thoroughly drained land.

Such being the true history of "moss" on fruit trees it is obvious that

scraping, and washing, and painting, can have no permanent value, if any. When spending time upon removing it it is assumed that the moss is itself injurious. We do not believe that it does any harm whatever. It is merely a symptom of decrepitude removable or irremovable as the case may be, and a natural warning to gardeners that their trees require better treatment. It may, indeed, like rifts in bark, harbor insects, and in such a way be injurious; but that is a small matter, and easily removed by a scraper. It will, however, be found that as soon as the improved soil begins to act, no further care beyond skilful pruning and thinning is demanded.—(*Gard. Chron.*, 1857, p. 3.)

MUSHROOMS.—Having cultivated mushrooms successfully for some years, I may perhaps be permitted to say a few words relative to a system which I have lately adopted; the amount of success resulting from which may perhaps be regarded by some as incredulous, but for the accuracy of which others, if necessary, can vouch.

A bed was spawned on the 15th November, from which a quantity of buttons was gathered on the 12th of the present month, just twenty-seven days after spawning, a circumstance I believe without parallel in the cultivation of this most useful esculent. The system of culture adopted on the occasion was different from that usually pursued, inasmuch as the spawn was not introduced in large pieces as is usually done; but was broken fine, the largest bits not exceeding a small marble in size. Thus prepared it was sown (if I may use the term) over the surface of the bed, which was then immediately beaten firmly down and soiled; the temperatures of the bed being about 90°.

This plan I consider superior to that usually adopted, as it does not require more than half the quantity of spawn; the mushrooms are equally diffused over the whole surface of the bed, and consequently no loss is sustained in gathering, as is the case when they are produced in clusters, a result which naturally follows when the spawn is inserted in the ordinary way. I am justified I imagine in attributing the early productiveness related above to the particular system pursued, as the house was kept comparatively cold for some time in order to retard a quantity of seakale, which is now in daily use. It might perhaps be satisfactory if other growers would give the plan I have just been describing a trial, and report the result. I am of opinion that if the system is carefully followed the most successful results will ensue. Perhaps I ought to observe that the soil used should not be too wet, but should rather be verging towards dryness than otherwise. Two beds now in full bearing for productiveness and quality perhaps cannot be excelled.—(*Gard. Chron.*, 1857, p. 4.)

CULTURE OF ORANGE TREES.—As you have been pleased to pass some complimentary remarks on the oranges with which I took the first prize at the Horticultural Society's meeting of November 25th, I take the liberty of forwarding for insertion in your paper an account of the system I have hitherto pursued in cultivating the citron family.

The conservatory in which my trees are grown is attached to the mansion. It stands south and north with south and west aspect, being span-roofed, twenty feet high, and supported by eighteen cast-iron pillars. It is situated on a slight eminence, overlooking the beautiful valley of Terne. It is ventilated by means of perpendicular lights upon the south and west aspects, and is heated with a conical boiler and 4-inch pipes.

Being rather elevated it is naturally well drained, although extra provision was made to secure perfect drainage from the bottom of the beds. The interior is divided into four compartments (or beds), and in the centre is a fountain. For the encouragement of creepers a narrow border runs all round the house, supported by a 4-inch brick wall, the hot-water pipes are laid close to the brick-work; the whole is neatly covered with a portable trellis-work; the top being two feet wide is used for pot plants in flower.

Orange culture I have found hitherto to be the easiest portion of all my troubles in the fruit department. Each of the four beds or compartments were dug out to the depth of about four to five feet. After being well drained, about a foot of broken bricks, &c., was put into the bottom to make the drainage more complete. The soil was carefully prepared, the main body being a brown alluvial loam, the top spit from an old pasture; also leaf-mould, road grit, and wood charcoal; one load leaf soil to three of loam, with about the same quantity of road grit, one load of wood charcoal to six of the loam—those are about the quantities required to give porosity to our loam. When all had been thoroughly incorporated it was then ready for use.

My trees, sixteen in number, were imported from Italy. It will be eight years next spring since they were planted. They appeared to be about two years from the bud. They were worked upon very strong stocks, from three to four feet high. What bit of soil adhered to their roots was a very adhesive yellow clay, which almost made me wish that a stronger soil for the main body had been selected.

I am sorry that I cannot give any information as to the names of the varieties, the labels were so mutilated that we could not make any thing of them. There appears, however, to be two distinct sorts of orange, not including the myrtle-leaved variety, together with citron, lemon, and shaddock.

When the borders had settled down pretty well the trees were planted and well watered, to consolidate the soil about their roots. From that day till now they have had nothing given them but pure rain-water, with two or three surface dressings of old melon mould from off the dung-beds.

As regards watering, we have no fixed time for that operation; during the height of summer they get a hearty soaking once a fortnight; throughout the winter, or in fact at all times, we are chiefly guided by the appearance of the surface of the borders, never at any time giving them a light watering. I may as well say that with very few exceptions since the trees were planted I have poured the water upon the borders (or beds) with my

own hands to insure a good soaking. I give credit to that worthy old gardener, Mr. George Sheills, gardener to the Right Hon. the Lord Blyth, of Erskine House, Renfrewshire, who spared no pains or trouble in initiating me into the proper method of watering inside borders.

In pruning, I do not imitate those trees that have the appearance of being clipped. I leave them in general as natural as possible, only stopping rampant growing shoots, always taking care to leave the small and well-ripened wood for flowering. They will soon monopolize the whole, as we keep cutting in everything that comes in their way.

During summer every amount of ventilation is given during the day that is available, and a portion is left on at night; at all times when the weather permits we ventilate freely. We never fire unless the thermometer falls below 40°, and there is a likelihood of frost or damp weather.

Insects we are not troubled with, beyond an occasional green-fly during the summer months. These are destroyed by the fumes of tobacco.—(*Gard. Chron.*, 1857, p. 4.)

Gossip of the Month.

DELAWARE GRAPE.—Mr. Editor,—Agreeable with a promise made you, I give an account of the manner in which my Delaware grape vine has stood the past winter, without the slightest protection. The result has been all that could have been desired, not even a single inch of the weakest shoot has been injured, while many Isabella and Catawba vines, in my immediate neighborhood, have been killed to the ground.

This is the second winter in which my Delaware has been out, so that I shall look forward with the expectation of making a display of the fruit, at even an earlier day than our Annual Exhibition will come off.

Who will say now, that, with the Rebecca, Delaware, Diana, Concord, Union, Curtis, (Stetson's Hybrid Seedling, No. 4,) and the Allen, (Allen's Hybrid,) we cannot have grapes in plenty without the aid of glass—and in quality, equalling many varieties which cannot be grown in open culture?

Now is the season for you to kill off, with your readers, the Northern Muscadine, Charter Oak, and like humbugs, which are being palmed off on the public.—*Yours*, E. W., *Dedham*, March 20, 1857.

We are pleased to hear so good an account of the hardiness of this new grape, which has been doubted by many cultivators, several of whom have believed it to be a foreign grape. Its hardiness, if there were no other proof, settles this point.

We agree with our correspondent, that now is the proper season to "kill off" the worthless varieties that are palmed off upon the public. We only wish that our advice might aid in doing this; but the truth is, the greater the

humbug the greater the desire to possess it. We know hundreds of individuals who have bought wild grape vines, dug out of the woods, and called by some great name, at \$2 to \$5 each, when they would not pay half the price for the very best variety that could be offered. Our American people have a large bump of the marvellous, and seem to delight in buying wonderful productions.

We believe, however, that so far as our readers are concerned, very few of them are likely to be taken in with novelties of this class. They are generally too well informed to do this, but the mass of the people have not learned better. We can only hope that the time is coming when they will have obtained such information as will put them on their guard against such humbogs as the Charter Oak, Sage's Mammoth, and similar varieties. Our list of hardy native grapes has had great accessions, and it is best to select the tried kinds rather than hazard time and care with unknown sorts.—Ed.

BETULA POPULIFOLIA.—Your able and intelligent correspondent, Mr Wilson Flagg, in your February number of the Horticultural Magazine (article on Birches) makes a great mistake when he says *Bétula populifolia* is supposed to be the same as the European *Bétula álba*; they are entirely distinct. The foliage of *populifolia* is double the size and a much more rapid growing tree than the *B. álba*, the European species. I have seen this species growing abundantly all along the St. Lawrence, also at Niagara Falls; it is also abundant all through the lower part of the state of New Jersey. The *papyræa* or canoe birch, if distinct, is nearly allied to *populifolia*. I have endeavored to procure the *papyræa* several times, but have not been able to get as yet for it anything but *populifolia*. If you know any person having plants of the canoe birch, distinct from *populifolia*, I would be much gratified to get a few plants. We have the Yellow and Black, but not the Red, in this section of country.—Yours, WM. REID, *Elizabethtown, N. J., March, 1857.*

Massachusetts Horticultural Society.

The following is the Report of the Finance Committee, read at the Quarterly Meeting in January, and omitted in our last for want of room.

RECEIPTS FOR THE YEAR 1856.

Balance in the Treasury, December 31, 1855,	.	.	\$939 31
Interest from Hospital Life Insurance Company,	.	.	220 00
Dividends from 53 shares Boston and Worcester Railroad,	.	.	344 50
Rent of store,	.	.	1050 00

Rent from new purchase,	\$775 00
Rent of hall,	690 00
Assessments collected,	770 00
Coupons from Passumpsic Railroad bonds,	270 00
Half amount of taxes refunded,	173 25
Receipts from Mount Auburn Cemetery,	4923 79
Interest on 20 shares Portland and Saco Railroad,	120 00
Miscellaneous receipts,	83 04
	<hr/>
	\$10,358 89

PAYMENTS FOR THE YEAR 1856.

Taxes on Real Estate,	\$456 00
Interest on Mortgage, to Josiah Bradlee,	450 00
Premiums and gratuities,	2066 00
Salaries,	500 00
Insurance,	152 24
Printing, Publishing, Advertising, &c.,	485 84
Allen's Victoria Regia,	100 00
Paid for two Statues, (Hebe and Dancing Girl,)	150 00
Mechanic and Miscellaneous Bills,	839 87
Paid Josiah Bradlee for half of Mortgage,	5000 00
Cash in the Treasury, December 31,	168 94
	<hr/>
	\$10,358 89

The estimate of the Society's property is as follows:—

Original and new purchase,	\$48,000 00
Appleton, Lyman, and other funds,	13,500 00
Furniture and Library,	4,000 00
20 shares Portland and Saco Railroad,	2,000 00
	<hr/>
	\$67,500 00

The Liabilities of the Society are:—

Balance of Mortgage due Josiah Bradlee,	\$5,000 00
	<hr/>

Leaving a balance of \$62,500 00

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

The Treasurer reported that \$2000 had been paid on the Bradlee Mortgage.

A letter was received from A. H. Ernst, presenting a package of seeds of the *Nysa sylvatica*.

A package of seed for distribution was received from the Patent Office.

W. P. Perkins of Roxbury was elected a member.

Adjourned to March 7th.

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

The President presented a resolution relative to the appointment of a committee to take into consideration the subjects embraced in the same. And it was voted that a special committee of five be appointed by the President, who should act as chairman. The President will report the members of the committee at the adjourned meeting, the first Saturday in April.

Horticultural Operations

FOR APRIL.

FRUIT DEPARTMENT.

THE early part of March was cool and unpleasant, with the thermometer nearly down to zero, accompanied with squalls of snow, and it continued so up to the 20th of the month. Thus no outdoor work of any consequence could be undertaken. As we write it is milder and more springlike.

In consequence of such continued cold, spring work will again be crowded into a short space, and more energy will be required on the part of the gardener to complete his labors. He must proceed at once to its accomplishment, and work all the more diligently till it is done. Fruit trees should yet be pruned, manured and cared for. Trenching for new plantations should be immediately attended to, and the smaller fruits, such as currants, raspberries, gooseberries, &c., which push early, be manured, and the ground spaded. Seeds of fruit trees, if any are to be planted, should be got into the ground at once, or they will lie till next year before they vegetate. Grafting should be proceeded with in order to get a vigorous growth, and insects should be looked after, and all trees infested with them washed, as directed in our last number.

GRAPE VINES will now be ripening off their fruit in the very early houses, which should be kept dry in order to maintain their high flavor. Vines in the greenhouse will now be in bloom, and will require attention to keep up a good temperature till the fruit is well set and begun to swell. Stop all rambling laterals, and tie in the spurs carefully. Maintain a warm and genial atmosphere by repeated damping off the walks. Vines in cold houses may be at once uncovered, and the vines set to work; syringe daily in good weather, and close up early in the afternoon to aid in giving the vines a strong break. Vines in the open air should now be trained neatly to the trellis, and new plantations made.

CURRANTS, GOOSEBERRIES, RASPBERRIES, &c., may be set out this month. Prune and train, or stake old plantations, and manure and dig the ground.

STRAWBERRY BEDS should be uncovered at once; rake and clean, and put in order for the spring. New plantations may be made towards the last of the month; it is not best to do this before the vines begin to make young leaves.

SCIONS should be cut at once, as it will soon be too late.

PEACHES, FIGS and VINES, in pots, bearing fruit, should be liberally watered.

GRAFTING should be proceeded with as rapidly as possible. Cherries and Plums, unless grafted early, are apt to fail.

FRUIT TREES may now be transplanted with safety.

SEEDS of Fruit Trees should be sown in well-prepared ground, liberally manured, and deeply spaded. Cold clayey land, or a thin sandy soil is unsuitable for seeds.

FLOWER DEPARTMENT.

The conservatory and greenhouse will continue in beauty throughout the month. As plants go out of flower their places should be filled with fresh specimens from other houses, if there are such; and if not, by removing the hardier kinds to a frame, to make room for the others. Roses will be conspicuous ornaments, and Calceolarias will begin to display their gay flowers. Fumigate often to keep down insects, and syringe the houses to clean and wash the foliage, and maintain a moist atmosphere, more needed at this season than heretofore. Continue to repot all such plants as need it. Remove all the hardier things to cold frames. Sow seeds of annuals for bedding out, and prepare Verbenas, Geraniums, Salvias, &c., for removal to the open ground as soon as the weather will admit.

PELARGONIUMS will be coming into bloom; keep the shoots tied out carefully, and cut away such branches as crowd the plants after the operation is done; water more liberally, and syringe occasionally, but cautiously.

CAMELLIAS will now be making their new wood, and will require a humid atmosphere. Syringe every fine day. Repot young plants if they require it.

FUCHSIAS are showy plants; and if brought forward early make better specimens. Repot as often as they require it, and stop the terminal shoot to make bushy compact plants.

AZALEAS will commence their growth. Repot all that need it. Head in strong rampant shoots, and tie down the others, if handsome specimens, covered with foliage, are desired. A little attention to this fine flower will render it one of the greatest ornaments of the conservatory.

ACHIMENES AND GLOXINIAS may be potted for a succession; those first set to work should now have a shift into larger pots, and they will soon be in bloom.

CALCEOLARIAS should again have another shift into larger pots. Use a very light, rich soil.

CINERARIAS, brought forward and repotted, will keep up the show of their pretty flowers till June.

HEATHS AND EPACRISES, to be kept in pots, should be shifted, pruned, and removed to a cold frame, or the coolest part of the house.

MONTHLY CARNATIONS, in full bloom, should be liberally watered. Give a larger pot if the roots are crowded.

CISSUS DISCOLOR, and other climbing plants, should be headed in rather short, in order to get up a vigorous growth of young wood.

HELIOTROPES AND LANTANAS, herbaceous and other bedding plants, should be hardened off in cold frames, protecting them against chilly rains and frosty nights.

STEVIAS, and other winter flowering plants, should now be propagated, in order to get them strong and stocky before cold weather.

CHRYSANTHEMUMS may be propagated from cuttings, or division of the roots.

PLANTS OF ALL KINDS, intended for the decoration of the house during spring, or through the summer, will need shifting into larger pots.

FLOWER GARDEN AND SHRUBBERY.

April is the season of busy work in the flower garden and pleasure ground. As the object should always be to have either place in the best condition as early as possible, that the effects of winter may be speedily obliterated, and everything put on the aspect of *la belle* season. Our spring is short enough, even with all the attention that we may give to extend it, and nothing detracts more from the enjoyment of a suburban home, at this early period of the year, than uneven and muddy walks, dirty lawns, and rough borders. It should be the first object of the gardener to see that everything is made neat about the grounds, that they may at all times invite exercise and recreation in the open air.

LAWNS should be rolled and raked, and if poor have a top dressing of guano or superphosphate of lime. Cut as soon as the growth will admit.

BORDERS AND SHRUBBERIES should be slightly dug and neatly raked. Box edging may be repaired.

WALKS should be repaired with fresh gravel, and have a good rolling; if the grass edgings have encroached upon them they should be neatly cut, avoiding a raw edge.

HYACINTH, TULIP AND LILY BEDS should be uncovered; and, as soon as the soil is in good order, loosely stir the surface, and rake and clean the walks.

CARNATIONS AND PICOTEES, wintered in frames, should be removed to their flowering beds as soon as convenient; early planting secures the best bloom.

ANNUAL SEEDS of all the hardy sorts, such as Larkspurs, Sweet Peas, Clarkias, Chryseis, &c., should be planted in the borders, or beds, where they are to bloom.

HERBACEOUS PLANTS of all kinds may be transplanted this month.

GROUND intended for bedding out plants should be well manured with very old compost, and thoroughly dug, so as to be in readiness for use when the weather is favorable.

ROSES should be well pruned, heading back the old wood to encourage a young and vigorous growth.

DANLIAS, for early blooming, may be started in a hot bed, or cold frame.

THE HARDY EVERGREEN TREES.

THE great value and importance of evergreen trees for ornamental grounds, is but just beginning to be fully appreciated by our countrymen. The immense forests of pines and firs which abound everywhere throughout the country, even within a few miles of some of our thickly populated towns, have made them, as a class, so familiar and common, that in planting our rural residences we have not introduced them as abundantly as they should be, for fear that they would give our grounds the forest aspect which a ride into the country, near by, will give all an opportunity to admire, or else subject us to the inquisitiveness of those who, having no appreciation of real beauty, wonder why we should plant such common things. But it is unfortunate that such objections to evergreen trees have so long been general, for it has greatly retarded their more extensive introduction around our dwellings, and into ornamental plantations, and rendered many otherwise beautiful residences cheerless and bare, save in the summer season, when the deciduous trees afford ample foliage and render their absence less noticeable than in the dreary period of winter. It is then that the evergreens throw such a picturesque air about every suburban home, their spiry tops towering up amid the leafless spray of other trees, presenting a deep green verdure which is perennial.

But if objections have been made to the introduction of our own native evergreens, which still number among them the finest in the world, it is gratifying to know that there are foreign kinds that are equally hardy and well adapted to our severe climate, which may take the place of the common sorts, and thus obviate one cause of complaint. If the white pine is too familiar, the Austrian may be substituted; and for the Balsam fir the noble Norway spruce may be taken; if the arbor vitæ is objectionable, the Siberian or

Golden may occupy its room ; and for the red cedar, the European juniper can be chosen. These are each quite distinct from the other, and even to an unpractised eye will at once be recognized as exotic in their origin. It is since the more plentiful introduction of the Norway spruce that the taste for evergreens has greatly increased, and no doubt with the knowledge that there are other equally hardy and fine trees, they will be sought after and planted less abundantly, perhaps, than the former, but to a far greater extent than has yet been done.

The growth of evergreen trees for shelter, in our severe and rude climate, must be attended with the best results. Every suburban residence of any extent should be protected by a thick growth of evergreens in every direction, but more especially in such a way as to be sheltered from the North and East winds. Those who have no actual knowledge of the fact, can scarcely realize how much warmth and comfort they add to any place. If simply outdoor exercise and recreation are all that are desired, they offer the readiest means of obtaining these at the more inclement season of the year ; and if the possession of a fine garden and the rearing of choice fruit is an object, they are then doubly valuable. We have in an article in a former volume some years ago, given an account of Mr. Tudor's experiment at Nahant in fencing out the winds, and the consequent success of his fruit culture on that bleak peninsula. If so much has been accomplished in this way, may we not predict that the natural shelter of trees will effect the same object, while it will not only add to the picturesque character of every residence, but be the means by which we may secure the possession of that which has been only attained at great labor and cost, the best fruit in the greatest profusion.

Singular as it may seem, while European collectors are penetrating the mountain regions of every country for the discovery of evergreen trees, and while, for so many years, the possession of our Northwestern and California species has been so great an object, we have scarcely thought of planting our own trees near at hand, so highly valued

abroad; or of adding others of such easy introduction since the addition of California to our national domain. According to Loudon, the whole number of North American evergreen coniferous trees in 1835, was forty, while the entire number of all other countries was only forty-three. Since then, however, many new species have been introduced, but still the larger part have been from the high altitudes of South America and Oregon; a very small number are from Africa and the Himalaya range. With so many native trees it is to be regretted that we have overlooked their attractions and neglected their cultivation.

We only need some good examples of all the hardy species to give an impetus to their immediate introduction into our gardens. In England the late Earl of Harrington spent a fortune in making an evergreen plantation which covered many acres and was filled with the finest and rarest specimens procured at great expense. Until his death no one was allowed to see it. Fortunately his successor is a more liberal-minded man, and the grounds are now accessible to all who wish to inspect the most complete collection in the world.

These remarks are prefatory to a brief description of several of the most ornamental evergreen trees which we have found to be quite hardy after several years' trial, including the severe ordeal of the winter of 1856 and 1857. No better test could be had than this. Others we have on trial which will be reported upon at a future time. We note only such as are beyond a doubt quite hardy, standing without any protection, and now forming specimens eight to twenty feet high. We offer it as a guide for the selection of trees suitable for the latitude of Boston, feeling assured that all may be safely planted without danger of injury by our winters. We commence with the pines:—

PINES.

1. THE SCOTCH PINE, (*Pinus sylvestris*.)—A large vigorous growing and long-lived tree, attaining the height of 60 to 100 feet in good soil. It is extensively distributed through-

out Europe, from the Mediterranean on the south to Norway on the north, and is one of the most valuable timber trees. Its growth is pyramidal, and the trunk is furnished with branches to within a short distance from the ground. The leaves are in pairs, about the length of the white pine, and of a bluish or glaucous hue. The bark is of a reddish tinge. The cones are one and a half to two inches in length, and one across. When of some age, the trees have a dark and sombre hue at all times except the summer season. It grows rapidly, attaining the height of 20 or 25 feet in ten years.

There are one or two varieties of the Scotch which are more dwarf in their growth.

2. THE JERSEY PINE, (*Pinus inops*.)—A tree somewhat similar in general habit to the Scotch, but with less glaucous foliage, shorter leaves, and less lofty in its growth, not usually attaining a greater height than 30 or 40 feet. It is abundant throughout New Jersey. The leaves are in pairs, and the cones two and three-fourths to three and a half inches long. Michaux considered it one of the most interesting species in the country. Its leaves give out a strong and grateful fragrance, and on this account, as well as its ornamental appearance and hardiness, deserves very general introduction. Its rate of growth is 10 to 15 feet in ten years.

3. THE LARCH PINE, (*Pinus Laricio*.)—The Larch pine is a native of Corsica and other parts of Europe, growing to the height of 100 feet and upwards, and forming a regular pyramidal head. The leaves, which are usually in pairs, and nearly twice the length of the Scotch pine, are twisted in a lateral direction at the ends, by which it may be readily distinguished; they are dark green. The bark is similar in shade to the Scotch. Its annual growth is from two to four feet, and trees twelve years planted attain the height of twenty feet. As a rapid growing tree it has few equals, and deserves, says Loudon, "to be planted extensively for its regular and handsome form, and the intensely dark green of its foliage."

4. THE AUSTRIAN PINE, (*Pinus austriaca*.)—A hardy

looking, vigorous and handsome tree, a native of the forests of Austria, growing at high altitudes, and one of the hardiest of all pines. The leaves are two to five inches long, stout, stiff, and stand out horizontally, of a deep glossy green hue. Its rate of growth is about the same as the Scotch, though stouter in proportion to its height. It flourishes in almost any soil or situation.

5. THE PYRENEAN PINE, (*Pinus pyrenaica*.)—A “majestic pine,” growing on the Pyrenees, within a limited space, and at an almost inaccessible elevation. The leaves are long, and of a very deep green. Its growth is regular and pyramidal. Captain Cook, who examined it in its native locality, remarks, that from “its noble appearance, the beauty of its form, and the clear transparent color of both bark and foliage, it will be a vast acquisition to our park scenery.” The cones exude a delicious balsamic odor. From its more recent introduction, there are few large specimens in Great Britain.

6. THE RED PINE, (*Pinus resinosa*.)—This is one of our native species, growing from Canada to Pennsylvania, but more common in New England. It does not grow in forests, but occupies small tracts, either alone or mixed with the white pine. Its usual height is 60 to 80 feet. The bark is of a clearer red than any other of our native species. The leaves are in pairs, five to six inches long, light green, and somewhat glaucous. The form of the tree is pyramidal, and its general habit more open than other pines. Its nearest resemblance is to *P. Laricio*. It is a free grower, hardy, and a good ornamental species.

7. THE CEMBRIAN PINE, (*Pinus cembra*.)—The Cembrian pine is a native of the Alps of Siberia, Tartary and Switzerland, and consequently one of the hardiest of pines. Its usual height is 40 or 50 feet. But its growth is very slow, averaging less than a foot a year. Those in England, forty years planted, are only 38 feet high. Its form is very erect and symmetrical, with ascending branches. The leaves are in threes or fives, and inclining towards the branch, of a deep green, and more tufted than in the other species. Its

uniformity of shape is objected to by Loudon, while Lambert considered it "one of the handsomest of the whole genus." All who like the regular shape of the Norway, will be pleased with the Cembrian pine. It prefers a deep soil, and a dry subsoil.

8. **THE WHITE PINE, (*Pinus strobus.*)**—So common throughout our forests as to scarcely need a description, but so beautiful that it deserves especial attention. Its usual height is 100 to 180 feet; its form is somewhat conical. The bark is very smooth and polished; the leaves are three to four inches long, straight, upright and slender, of a light bluish green, with silvery longitudinal channels. Its growth is not so rapid as the European pines, but it is a vigorous tree, the annual shoots being a foot or more in length. Trees ten years planted are about fifteen feet high. It adapts itself to all soils, but prefers a loose humid one, where it alone attains its fullest proportions. It is extensively planted in England, and deserves introduction into every ornamental plantation. Our correspondent, Wilson Flagg, has so well described this and other of our native evergreens in our last volume, (XXII.), that we shall only enumerate them here.

9. **THE LOFTY PINE, (*Pinus excelsa.*)**—This is a beautiful tree, allied to the white pine, and might be mistaken for it by one unacquainted with the two. The leaves are, however, in fives, much longer, being from five to seven inches in length, and slightly drooping at the ends. The branches are also drooping as the tree attains age, and by travellers in Asia, is called the "weeping fir." It is a native of the Himalaya. It grows with about the same rapidity as the white pine; and, though not quite so hardy as that fine tree, is sufficiently so to stand our climate. It should have, however, a situation with a dry subsoil.

SPRUCE FIRS.

10. **THE NORWAY SPRUCE FIR, (*Abies excelsa.*)**—So well known as not to need a description. It is the most popular and admired of all evergreens; growing rapidly, transplanting

easily, thriving in any soil not too wet, and as hardy as our hardiest native pine. Its splendid pyramidal head and spreading branches, clothing the trunk entirely to the ground, even in old age, render it a noble tree, and particularly adapted to every variety of ornamental plantation.

11. **THE WHITE SPRUCE FIR, (*Abies alba*.)**—This is our common spruce, growing throughout northern New England, attaining the height of 40 or 50 feet. Its foliage is of a very light green. As a single tree it is not much valued, but for plantations for shelter, it adds to the variety, and is well worthy of attention.

12. **THE BLACK SPRUCE FIR, (*Abies nigra*.)**—This is another of our common trees, but far more beautiful than the white spruce. It resembles, in its growth, the Norway, retaining its lower branches well, and only distinguished from that tree by the glaucous hue of its dark green foliage. It grows rapidly, and should be more extensively planted.

13. **THE HEMLOCK SPRUCE FIR, (*Abies canadensis*.)**—Of all evergreen trees, the hemlock, in our opinion, stands at the head; the gracefulness of its drooping branches, and the verdant hue of its delicate and tufted foliage, surpass all other trees, and leave the deodar, funebral cypress and other evergreens, which have been so much praised, far behind. Unfortunately, it is not so easily transplanted as others of the tribe, which has retarded its more general introduction into ornamental grounds, but it is worthy all the pains and expense which it may cost to secure fine specimens.

14. **THE SILVER FIR, (*Picea pectinata*.)**—This is a truly picturesque and beautiful tree, though not symmetrical enough for the majority of planters. It is perfectly hardy. The branches spread out horizontally, and are of irregular length. The broad shining foliage has silvery lines beneath, which give it a conspicuous appearance, from whence its name of silver fir. It grows slowly until the sixth or eighth year, but then advances more rapidly, and, at the age of fifteen or twenty years, makes shoots two to three feet long. It likes a good soil. It is a native of central Europe.

15. **THE BALSAM FIR**, (*Abies balsamea*.)—The common fir of our woods, a good tree for shelter in large plantations, but scarcely worthy of a conspicuous place as a single tree. It is apt to lose the lower branches as the tree attains age.

ARBOR VITÆS.

16. **THE ARBOR VITÆ**, (*Thuja occidentalis*.)—One of the most useful trees, entering into the composition of all ornamental plantations. It grows freely, transplants as easy as a willow, and is useful for screens or belts, or as single trees. It will grow in any soil, but loves a moist situation.

17. **THE Plicate ARBOR VITÆ**, (*Thuja plicata*.)—A native of Nootka Sound, and makes a pleasing variety. It is loose in its habit of growth, but the foliage is finer than the common, and of a much deeper green in summer. It does not grow quite as fast as the last named, and makes a rounder head.

18. **THE CHINESE ARBOR VITÆ**, (*Thuja orientalis*.)—From the apprehension that this was a very tender tree, being a native of China, it has been but little planted. It is, however, quite hardy, if the situation is not too damp. The fineness of its foliage, the flat disposition of its branches, and its lively green color, render it a most desirable tree.

19. **THE SIBERIAN ARBOR VITÆ**, (*Thuja Warreana*.)—We do not know the origin of this tree. It is one of the most beautiful of the tribe, more compact in its growth, and holding its color better in winter than either of the other species. It forms a complete cone in its growth, which is slow, not being more than half that of the common arbor vitæ. It cannot be too extensively introduced.

20. **THE GOLDEN ARBOR VITÆ**, (*Thuja aurea*.) a new variety of great beauty, with much of the habit of growth of the Siberian and the foliage of the Chinese, but of a peculiar light yellow hue, from whence its name. The plants are yet too small to speak of its growth, but it has proved quite hardy, and will undoubtedly be a favorite tree.

There are several varieties of the arbor vitæ besides these, which appear perfectly hardy, but which are yet too new to enumerate in this list.

CYPRESS.

21. **THE WHITE CEDAR**, (*Cupressus thyoides*.)—A rather pretty native tree, growing in low, damp situations throughout the Middle and Southern States. The foliage is somewhat like the abor vitæ, and the growth is loose and open. Though not remarkable for any particular ornamental properties, it forms an agreeable variety in plantations of evergreen trees.

JUNIPERS.

22. **THE COMMON JUNIPER**, (*Juniperus communis*.)—This Juniper, according to botanists, is indigenous to both Northern Europe and North America. It grows from ten to fifteen feet high, in a conical form; the leaves are narrow, bright green; as a small low tree it forms a pretty addition to our gardens.

23. **THE IRISH AND SWEDISH JUNIPERS**, (*Juniperus hibernica and suecica*.)—Both beautiful, small, fastigate trees of slow growth, and rarely exceeding a dozen feet in height; branches very erect and close, and foliage of a dark green. For small gardens they are among the most desirable trees.

24. **THE RED CEDAR**, (*Juniperus virginiana*.)—One of our commonest trees, growing in every exposed and mountainous locality, and conspicuous at all seasons for its sombre hue. It is of pyramidal form, and often attains the height of 35 or 40 feet, but, as usually seen, it is rarely more than 20 feet.

25. **THE CHINESE JUNIPER**, (*Juniperus chinensis*.)—A very fine, hardy species, with bright green foliage, which retains its color throughout the winter. It is of a somewhat spreading habit, and forms a roundish conical head.

These comprise the principal trees. There are several varieties of the above species which are equally hardy, but which our limits will not allow us to enumerate at this time. There are also several others which we have on trial, that will no doubt be added to the list hereafter.

COLOR OF THE OUTSIDE OF BUILDINGS.

A great deal has been written of late concerning the propriety or the impropriety of certain colors for the outside of buildings. White was formerly, in this country, the fashionable and almost universal color for this purpose. It was ridiculed by Sir Uvedale Price, in his work "On the Picturesque," and afterwards by Mr. Downing. Thereupon it became the fashion to use paints almost black, varying from a drab to a dark brown or bronze. Many a pretty little white cottage was transformed into something that resembled an unpainted *shanty*. Such dismal hues prevailed in the outside colors of the majority of our dwellings, in certain places, especially in the suburbs of our cities, that the spectator was affected with an actual depression of spirits, by looking at them. These gloomy colors were justly ridiculed in their turn, and gradually gave place to lighter tints, consisting of white, slightly tempered by a mixture of brown, yellow, olive or other sober tints. The dark, sombre paints are now universally condemned and rejected.

A very great latitude may be permitted in the choice of colors. Good taste would reject none whatever, except those which are very glaring, very sombre or very peculiar. Dark colors may sometimes be admissible, when relieved by combination with such as are light and brilliant. We have often been very agreeably impressed by the sight of a plain cottage, which was of a dark stone color, from having never received a coat of paint, while the window sashes, window-frames and corner trimmings were painted white. The sombre effect of the dark surface was pleasingly relieved by the neat and cheerful appearance of the white window frames and other light colored woodwork. Some artists and connoisseurs affect an abhorrence of such contrasts; but we must not allow our judgment to be misled by the prejudices of men who are wedded to certain established notions. Though we would not recommend the practice, once prevalent, of painting houses red, yet we have often been delight-

ed with the appearance of a neat farm house of this color. with the trimmings of white, notwithstanding its supposed violation of rules. The reasons for condemning this color and its accompaniment, are not very intelligible; and if any man should choose it for a plain dwelling, we have no doubt he could prove the correctness of his taste by as just a course of reasoning as may be adduced in favor of any other tint.

White, though a glaring color, serves better than any other to reflect the light from the surface, and to prevent it from receiving injury from the intense rays of a summer's sun. Dark colors, on this account, are the worst, inasmuch as they absorb the sun's rays, and expose the surface of the building to an almost burning heat. A little settlement of white cottages presents nothing disagreeable to the sight, and in the winter season they harmonize with nature, because they are of the color of snow. At other times, white paint is said to make a house a too conspicuous or prominent object in the landscape. There may be some justness in this remark; but it is not necessary that a house should be concealed from observation, like a tree frog, which is colored like the bark of the tree, that it may elude the sight of its enemies. Almost all that is said of the harmony of colors is dogmatical. Let us prefer those tints, and those combinations of tints, which are the most permanently agreeable to the eye, even though condemned by some whimsical rule of art. There are many hues, such as a light drab, yellow or straw color, that might be preferred to white, as less glaring and equally cheerful. We would discard those only which are sombre or extremely odd.

It is fashion chiefly that leads men astray in these matters. White became a general and almost universal color for dwelling-houses, not only on account of its neat and cheerful appearance, but also on account of its superior durability. All people are disposed to be imitators, and few could bear to be so singular as to mix any other color with their paint, until fashion suddenly issued a decree that white must no longer be used, and that henceforth the darkest hues,

which are not absolutely black, must be the outside colors of every respectable dwelling-house. As soon as the novelty of this fashion was over, every body was displeased with these gloomy tints. In a crowded settlement of buildings painted in this manner, it was not always easy to perceive that there was any sunshine upon them, so indistinct were the shadows under the broadest light of day. Brilliant as our climate is compared with that of other countries, we do not understand the course of reasoning which would prove that we must, on that account, paint our houses more soberly than other nations do. On the principle of harmony which forms the basis of this reasoning, the opposite rule should govern our practice, that the bright colors of our dwelling-houses may correspond with the splendor of the sunshine, the distinctness of the shadows and the brilliancy of the hues of the sky and the landscape.

No circumstance, that is independent of moral causes, contributes in so great a degree to promote an internal cheerfulness and serenity of mind, as the sight of neatly painted dwelling-houses, glittering in the sunshine and surrounded by well-dressed but not highly decorated grounds. The lighter the colors of the outside, if not purely white, the more pleasing is their aspect at all seasons. They are brilliant but not dazzling in the sunshine; they are cheerful in dull and cloudy weather; they are beautiful in the clear moonlight. When an American visits England, he is struck with the sober appearance of the dwelling-houses, in all parts of the country; but he finds the same sobriety pervading the sky and the landscape. The aspect of combined nature and art, on the continent of Europe, is less sober than that of Great Britain, and less brilliant than that of America. The great masters of landscape painting, basing their rules of art on familiar scenes, established a very different set of canons from those which would spontaneously arise in the minds of American artists. Hence the ideas of an American in regard to the picturesque, differ very essentially from those of an European. But while we freely admit the superiority both of the theory and practice of for-

eign artists, we ought not to be slavishly governed by their rules.

The architect is generally swayed by his ideas of the picturesque, in designing both the forms of his buildings and the color of their exterior. But the laws that govern the painter do not apply to all the objects in real landscape. Any one who gives particular attention to these studies, soon learns that many a beautiful scene in our villages would be entirely unattractive on canvas. But when we are designing a dwelling-house, and studying the rules for painting it, we should consider its appearance in real landscape rather than its picturesque effects. In real landscape we look for the indications of neatness, cheerfulness and comfort; in a picture we are better pleased with scenes that suggest romantic and poetic images.

Those buildings are generally the most pleasing to the eye which are not painted entirely of one color. Among our predecessors in New England, it has been customary to use two or three different tints for the same house. When the general surface is light, the window sashes are often painted dark, and when the general surface is dark, some other portions are painted white. The majority of our dwelling-houses have green blinds; and the contrast made by them, when joined to a white painted house, has been very generally ridiculed. Experience proves that there is nothing really offensive in this contrast, though we are inclined to believe that were the white paint sobered by a slight mixture of some other color, the effect would be more generally pleasing. An entire uniformity of color is tiresome and blank, and should be relieved by contrasts more or less distinct, according as the main surface is glaring or sober. If the window frames and window sashes are light when the house is of a dark tint, the effect is more lively and cheerful. A reverse of this soberes the glaring appearance of a light groundwork. It is difficult to establish any very explicit rules on this subject. We would leave these matters chiefly to the taste of individuals, recommending, as

a general rule, to avoid glaring colors and glaring contrasts, and to prefer light and even white to any very dark or sombre tints.

THE LATE MR. DOWNING.

BY A. D. G.

WE do not suppose that our feeble tribute can add anything to the reputation of Mr. Downing. But having lately reperused several of his works, we desire to express some views of his life and writings which that perusal has suggested. The literature of our day records too often the deeds of eminent bad men, the influence of which cannot fail to be disastrous. Poor human nature is fascinated by bad examples, if only they are brilliant. Milton's "Satan" is confessedly attractive, because, although an "archangel ruined," he yet exhibits so much of the port and speech of an undaunted hero. We want not the lives of bloody warriors and princes; nor are the biographies of great statesmen, orators and poets the only ones which should be written. Men in humbler spheres, who have lived honorably and usefully, may furnish examples of greater practical interest and value. Of this last named class, was the subject of this sketch. The son of an honest nurseryman on the banks of the Hudson, and pursuing the same calling himself a portion of his life, he yet rose, by his own exertions, to an honorable place in the eyes of his countrymen; and, at his death, was not without a transatlantic reputation.

Mr. Downing was a self-made man. His mind was not remarkable for depth or brilliancy; his early education was limited; his health was delicate; he was left fatherless in childhood, and had few friends to direct his early training, or to introduce him to high social position. Yet he pressed forward, resolved to make the most of himself. He wrought up the elements of the education he had received, and added to them from year to year, until at length his mind was not

wholly undisciplined and unfurnished. His taste ran in the line of the natural sciences, chiefly of botany and mineralogy; and while he was still young, he had made collections of all the minerals and plants in the neighborhood of his home. The scenery amid which he lived helped to form his character. That noble river, and those hills and mountains, all hung about with revolutionary memories, could not be looked upon, year after year, by the sensitive youth, without leaving an impress on his intellect and taste.

It was in circumstances like these that he began his life-work. He entered upon the business of a nurseryman, devoting, however, all his leisure to study. When about twenty years old, he began to direct his attention to landscape gardening and architecture. He mastered the treatises of European writers on these subjects. He visited numerous country seats in the Northern States, and made notes of his observations. He began to theorize, and to form independent opinions. It did not seem to him that all had been done in these departments which might be accomplished. He thought that the theories of foreign writers were not universally adapted to the demands of our country, climate and society. He resolved to write a work which might better meet the wants of his countrymen. It was a bold resolve, but it was not made in vain; for, in a few years, when he was only twenty-six years of age, he produced his "Treatise on the Theory and Practice of Landscape Gardening," which has been an eminently successful publication. It has now reached its ninth edition. In the following year, he published a smaller book, entitled "Cottage Residences," in which some of the principles of the former volume were further developed and applied. This book also was well received, and met with a wide circulation.* He now turned his thoughts awhile from ornamental gardening and architecture to the fruit garden, and, after about three years'

* We are happy to see that a new edition of this work has just been issued by Wiley and Halsted, New York. Several chapters of additional matter are embraced in it, taken from his miscellaneous writings, or furnished by a friendly and competent hand. This edition is also embellished with several new engravings.

labor, published "The Fruits and Fruit Trees of America," a work which soon became an authority in its department, and whose influence was felt in every part of the country. We understand that Mr. Charles Downing, brother of the author, is now engaged upon a revision of this work, adding whatever principles and facts have been discovered in fruit culture since its first publication. It is doubtless a labor of love with him, and will be well performed. It was an excellent thought in him to come and renew the slightly faded inscription on his brother's monument. Posterity will inscribe *his* name on the same stone, and transmit both to coming generations.

In the year 1846, Mr. Downing became editor of the *Horticulturist*, a monthly journal devoted to the various branches of rural art, which soon obtained a wide circulation, and exerted an important influence in its department. In 1849, he prepared an edition of Wightwick's "Hints to Young Architects," accompanied with hints and notes of his own. In 1850, he published a larger work, entitled "The Architecture of Country Houses; including Designs for Cottages, Farm Houses and Villas." This was, in many respects, his most important work. It was more practical than his earlier volumes, and better adapted to the wants of the country at large. In the following year, he edited Mrs. Loudon's "Gardening for Ladies." He had projected a new and larger edition of his "Fruit Trees," and a work upon "Shade Trees," but these he did not live to finish. During the later years of his life, he was chiefly occupied in furnishing plans for residences in various parts of the country, and laying out the grounds about them. In 1851, he was employed by Congress to prepare designs for embellishing the public grounds in Washington, and to superintend the work on the same. His plans were finished, and much of the work executed, before his decease. In the following year, in July, occurred his untimely death, by the burning of the steamer "Henry Clay."

The influence of Mr. Downing, in developing the public taste in gardening and rural architecture, deserves special

notice. Before his day, comparatively little attention had been given to these matters, at least, except among the very few. The public sense was dormant. Men bought land chiefly for farming purposes, or to sell again. They built houses simply to answer their immediate, pressing necessities, or to sell again to advantage. What had such prudent, sensible men to do with velvet lawns, graceful trees, gothic gables, and vine-clad porticos? Such things brought little hard cash in market, and had better be let alone.

The correction, in some degree, of this perverted public sentiment, was one of the excellent fruits of Mr. Downing's life. He tried to make men feel that the beautiful is not to be despised, but rather to be sought out and cultivated; that it is not the whole of life to eat and sleep and get rich, nor even to engage in pursuits that are simply useful. He showed that there is a moral influence in good houses; that he who builds a tasteful dwelling, and surrounds it with a garden of trees useful and ornamental, is likely to be a contented and happy man, a good father and a good citizen, and that his family is likely to grow up a happy and virtuous household. He showed, also, that "true taste is an excellent economist;" that the working-man's home might be made comfortable and attractive, without adding to its costliness; that ornamental gardening might be practised in an inexpensive way, and that the fruit garden and kitchen garden might be made sources of income as well as of pleasure.

His precepts were widely put in practice. Handsome houses, from the splendid villa to the laborer's cottage, sprang up over all the land, and many of them copied from his own designs. Some of his plans, it is true, were sadly *improved* upon, so that, in many sober minds, the new style of architecture was brought into disrepute; but the effect, on the whole, was good and lasting. Stately, clapboard Grecian temples for dwellings large and small, gave place to the more home-like rural Gothic, Italian and bracketed modes. And cold, glaring white paint gave place to various soft, neutral shades, more pleasing to the eye, and in better har-

mony with the surrounding landscape. Ornamental grounds set with trees, shrubs and flowers, each in stiff rows, or describing squares, hyperboles and ellipses, gave place to the natural method, in which lawns were planted with trees at unequal distances, and shrubs and flowers were grouped here and there to give life and freedom to the whole scene. Orchards were planted with the choicer varieties of fruit, and were managed with more skill and care. Public parks and cemeteries were laid out in accordance with the principles developed in his writings. In short, the public taste in respect to architecture and gardening was awakened and improved, and an impulse given to the various pursuits of rural life which will never die, so long as man loves his home and the land which gave him birth.

We do not maintain that Mr. Downing's writings are faultless. His style of composition might, perhaps, have been mended in some respects. Experience has shown that a few of his theories were not well based. Some of his principles were only partially developed. Others, too, have since been wrought out, which are an advance upon his. But in this very thing we find a most valuable result of his labors, viz., the impulse he gave to other minds in applying his principles, or in modifying them when needful, and in developing new ones. Some of his successors in this department have improved upon him in simplifying the subject of landscape gardening, and in applying its principles further than he did, to ornamental grounds of the smallest dimensions. It has been objected by some critics, that the minute and precise rules given by Mr. Downing for the planning of grounds, the position of shrubberies and flower gardens, the scientific grouping of trees according to their color, form, size, smoothness or roughness of leaf and bark, his "Newtonian analysis of the lights and shades upon a landscape," must lead to stiffness of execution, and give ornamental grounds a starched air, widely different from the easy grace of natural scenes. But we do not see why the same objection will not lie against all rules. Besides, it was not Mr. Downing's wish that his directions should be servilely fol-

lowed. He desired, rather, to lay down general principles, and to imbue his readers' minds with so correct a taste, that they would not go far astray, even though they entirely forgot the letter of his rules.

But we have not the time or space to pursue this subject. We can only bear our humble testimony to the usefulness of Mr. Downing's labors. We often wonder that he was able to accomplish so much in so short a life. If such were the fruits of his youth, what might not have been expected from his prime! But while we lament his brief career, let us rejoice that other laborers in the same field, stimulated by his example, are rising up all over the land, seeking to make the earth more fruitful, our landscapes more beautiful, and our homes more comfortable, tasteful and happy.

THE CULTIVATION OF DWARF PEARS.

THE cultivation of dwarf pears is, at the present time, attracting much attention, arising in part from communications which have appeared in some of the Horticultural and Agricultural papers, adverse to their success, and denouncing them as unfit for general cultivation. We have already referred to the views of some of these writers, in a note to a most excellent article, (Vol. XXII, p. 500,) answering all the objections which have been made to trees of this kind, and do not deem it worth the time and space we might occupy to enter into a defence of dwarf trees again. All that has been written is the result of mere tyros in pear culture, whose experience changes every three or four years, and upon whose opinions no reliance can be placed. Both the success and the failure of such cultivators are alike to be feared and doubted, for in either case, if the views of these writers are to be followed, they may lead every inexperienced man into errors which a life time would not be long enough to correct. For instance, supposing, in reality, that the pear would not succeed upon the quince,—that there was

real evidence of this,—now how much would that cultivator's opinion be worth, who, after "four years' trial, from 1848 to 1852," should write a "laudatory article on dwarf pears," with the view to induce everybody to buy and plant them? And if it is well known, as the experience of a hundred years has proved, that they will succeed upon the quince, how much is the same cultivator's opinion worth who, "before two years had elapsed," became convinced that dwarf pears were only "very nice toys," but not fit for culture on an extended scale?

Truly Horticulture can have but a slight claim to the name of a science, if such results proceed from those who profess to be its followers; "four years' experience" and one dash of the pen obliterate all that has been written in pomological works for a century. Duhamel, Quintinye, Lelieur, Poiteau, Dubriel, and other distinguished French cultivators who devoted their lives to the subject of fruit culture, and left us the rich legacy of their labors, in their experience and years of observation, seem as unknown to these writers as if they had never lived. One would suppose, from all that has been written against dwarf pears, that they were never heard of till the New Jersey and Long Island cultivators took them in hand.

And what is the result of the conflicting views of these cultivators? Why, while the Boston amateurs who have had THIRTY YEARS' experience, and place some reliance on the experience of foreign cultivators, are enjoying the luxury of delicious pears in great profusion, the New York and Philadelphia cultivators are setting out their trees and digging them up again after "four years' experience," or else they are "waiting" patiently, no doubt, for their standards to bear, which fifteen or twenty years hence they will probably do. In the mean time it will afford amusement if nothing else, to have "a talk" upon the subject, unaware, no doubt, that such a place exists as la Belle France, where, from the use of the quince stock, pears are the most abundant of all fruits save the grape. The editor of the Horticulturist speaks for our Philadelphia friends and says very truly "that

not one in a thousand has yet *tasted* a good pear," though "they occasionally see a good one in Newton's window at from 50 cents to \$1." It will be a great many years before they see them any more plentiful, if they abuse dwarf pears as they have done of late. Undoubtedly they believe in the old adage, "patient waiters," &c.

These few remarks are prefatory to the introduction of an article which has appeared in a Cincinnati paper by Colonel Wilder, upon this subject of dwarf pears, in answer to a communication by Wm Stoms of Cincinnati. A portion of it is from an article in our pages (above referred to) of last year, but we make no apology for introducing it again, believing that considerable interest is felt in regard to the subject.—ED.

I notice in the columns of your valuable journal, an article upon the cultivation of "Dwarf Pears," by Wm. Stoms, Esq., which also seems to have been read before the Cincinnati Horticultural Society, and in which he reviews an opinion expressed by me on a certain occasion, relative to the cultivation of the pear on the quince stock.

I have not the pleasure of an acquaintance with that gentleman, but from the confident manner in which he writes, it is to be presumed that he has had better opportunities, and much larger experience, than the cultivators of New England. As to the accusations which he brings against me of "bloviating," "bobbin," "veering," "backing out" from the culture of "*dwarf pears*"—"jumping at conclusions without practical experience," advocating "moonshine theories," and similar denunciatory phrases, I yield to him all the honor which attaches to such courteous and classic language, agreeing with him "that amenity and courtesy to opponents should always characterize deliberations."

The grave charge he makes is, that I did say, in open meeting, and before the world, "*that the pear, upon the quince, should be planted deep enough to cover the place of junction, three or four inches below the soil, and then the pear will throw out roots from itself, and the result will be*

not only early fruiting, but also, longevity." Mr. Stoms further says: "When Col. Wilder shall have tried this new project some twenty years, then it is that he can speak with some truth and confidence as to early fruiting and longevity." Now this direct proposition is encouraging, and induces me to inform Mr. Stoms, that I have tried this "new project," not only "twenty," but more than twenty-five years; and although I would not arrogate the riper experience which he claims, yet I will venture to assert, that I have in my grounds many pyramid pear trees from ten to seventeen feet in height, with trunks twenty inches in circumference, and branching at the base ten to twelve feet—that hundreds of these trees are from twelve to fifteen years of age—that several of these are thirty years old—that they have borne regular crops from the third or fourth year after planting, and that in some instances I have gathered from the aforesaid trees, "not five or six beautiful pears," *only*, but from one bushel to one barrel per tree. I do further aver, that these trees were originally upon the quince stock—that some of them remain in that condition now, but that most of them have rooted from the pear stock, and that Mr. Stoms may believe that there is "some truth" in this statement, (for "verily, we speak that we do know, and testify that we have seen,") I would really make oath to these facts, were it necessary to convince him of my veracity.

That there may be no misunderstanding of terms, let it be remembered that when I speak of *dwarf* pear trees,—a term which I did not use in the quotation he has cited,—it is in contradistinction to those which are on the pear root; for we of Massachusetts do not allow our pear trees, even those on the quince, to remain *dwarfs* or "monkeys." No, no, Mr. Stoms; we not only make our pear trees grow, *even on the quince*, into beautiful, large pyramids, but we make them bear five to seven years earlier on the quince than they would on the pear stock. And, as to planting deeply, so as to allow the pear stock to root, as many varieties will, it is no "new thing with the intelligent Colonel," for he has *always* practised this system, a fact well known to his Ohio friends, and to every one who has visited his grounds.

Mr. Stoms asks, "Why graft on the quince stock at all?"

Answer. To obtain "early fruiting;" and the pleasure and profit of regular crops, for many years, before the trees would produce fruit on their own stock.

Agam he inquires, Will the pear, under the circumstances he (Mr. Wilder) describes, (that is, rooting from the pear stock,) continue to be a "*dwarf*"?

Answer. No; nor do we desire that it should; for, having commenced fruiting and furnished itself with fruit-spurs, it will continue to bear, whether on the pear or quince root, or on both; and, as to "longevity," it is generally admitted that the more roots a tree has, the greater will be its strength, and the longer its duration of life.

Hence we plant the tree deep enough to allow it to root from the pear stock, and thus we keep the quince stock soft and emollient, also, causing it to swell evenly with the pear, and to emit roots throughout its stem, which it will do, if kept below the surface of the soil.

Mr. Stoms further says, "When the friends of dwarf pear culture shall come forward, and, with 'bills of particulars,' show me an orchard of five hundred dwarf pear trees, that have been ten years planted, which have borne fruit *successfully* and *paid cost*, I will give up the contest."

Now we cannot carry our orchards to Ohio, but if friend Stoms will take the cars next August for Boston and advise me of the time and at what depot he will arrive, I will have a carriage in readiness, take him to my house, have a good chat with him in the evening on Pomology, give him the best bed and board we have, and in the morning he shall see my pear trees and the memorandum of my sales of fruit for the past few years.

I will then take him to my neighbor Austin's, the Treasurer of the Massachusetts Horticultural Society, who has *five hundred and ten pear trees*. All these are on the quince root, with the exception of one or two dozens, which are on the pear root; but as these latter have borne but little fruit, Mr. S. will not object to their being counted in the lot. These trees are from eleven to thirteen years of age. One

hundred of them are Louise Bonne de Jerseys. These trees commenced bearing about three years after planting, have borne regular and abundant crops ever since, and are now in a very vigorous and healthy condition. No account of the crops were kept until the year 1851, but Mr. Austin has kindly furnished me with the amount of his sales since that date:—

Sales of pears in 1851,	- - - - -	\$161.00
“ “ 1852,	- - - - -	406.00
“ “ 1853,	- - - - -	731.72
“ “ 1854,	- - - - -	630.61
“ “ 1855,	- - - - -	648.43
“ “ 1856,	- - - - -	831.00

Total sales for six years, - - - - - \$3,408.76

The original cost of these trees was about fifty cents each, or \$250, (two hundred and fifty dollars.) Mr. Austin is a merchant, and goes to the city every day, and the only help he has had, is the service of a man who also takes care of his stable and grounds. He has, however, given them his personal attention, and good cultivation, but I think, without further estimate of “*cost*,” we may reasonably conclude that these “*five hundred trees*” have “*borne successfully, and paid cost.*” We will then take a ride over to the Messrs. Hovey’s, where we shall find a much larger number of *pear trees, on the quince root*. Their beautiful avenues are lined with them, some of which are from fifteen to twenty years of age, but as it will occupy, perhaps, too much time to examine all of them, we will take one walk as an example. How delighted Mr. S. must be to see 220 pear trees, 110 on each side, loaded with their luscious fruit, only eight or nine years planted, and all independently on the quince root. The product of those trees in 1855, was twenty barrels—in 1856 twenty-five barrels. The highest price obtained was twenty dollars per barrel, the lowest eight dollars. Then we can call on Mr. Stickney and look at his “*dwarf*” pear trees. We shall see some magnificent specimens of Urban-

ists and Louise Bonne de Jerseys. The crop of the latter he sold the last season at ten dollars per bushel. Then we will go to Mr. Manning's, who has some pear trees on the quince of very large size, being from thirty to forty years old, and which "still live," and produce annual crops. Then we will pursue our journey and call on Mr. Cabot, the President of the Massachusetts Horticultural Society, Messrs. Bacon, Downer, Richardson, Johnson, and others who have splendid collections of "dwarf" pear trees, which have been "*planted ten years.*" By this time Mr. Stoms will be satisfied whether "life to them is a mere shadow, and like a brief candle soon goes out;" and having seen thus much of the "*absurdity of exuberant bearing,*" perhaps will be able to "*jump at conclusions without practical experience,*" be willing to "bloviate," "veer round," and without any more allusions to "moonshine theories," and "humbugs," acknowledge that whoever else is to "*back out,*" it is not the cultivators of Massachusetts.

As my object has been to bring *practical experience* to bear on this subject, I cannot close this article without adding a few extracts from the remarks of the celebrated Mr. Berckmans, formerly of Belgium, but now of New Jersey. He has spent a long life in the study of pomology, and his opinions are, therefore, worthy of confidence. To the question, "*Will quince-grafted pears succeed?*" he replies:

"I have no hesitation in replying, Yes, they will, and often better than on pear stock; and they are less subject to blight. I know that I do not agree with the opinions of my late friends, Van Mons and Esperen, who never would admit a quince stock in their experimental gardens. I respect their memory, but cannot help considering their opinions as a prejudice. They had not found out the good quince stock, and perhaps did not know how to plant quince-grafted trees. I myself did not know it then. At present, my best trees are on the quince; and my best fruit also. Those who would successfully cultivate these must pay attention to the following rules:

“1. Have a good, substantial, rather deep soil, with porous or drained subsoil.

“2. Select the good Angers, or Orleans quince, for stock.

“3. Plant no other varieties than those which succeed on the quince.

“4. Plant the trees deep enough, so that the place where they have been budded shall be at least three inches below the surface of the soil.

“5. Keep the weeds down.

“6. Keep the branches low, and make a pyramidal tree, by judicious pruning once or twice a year. If well pruned, the tree requires no pinching.

“Much has been said about the *short-living* of the quince stock. If properly planted in genial soil, which is not exhausted or impoverished by intervening field crops without a reasonable supply of manure, as most of our apple orchards are, the quince-grafted tree will thrive for fifty years or more. Some actual facts will prove what I state. Hon. M. P. Wilder has in his garden in Dorchester, trees which he bought from the widow of Mr. Parmentier, Long Island, some twenty years ago. They have yielded fine crops almost every year; and there is no reason to anticipate a diminution of growth of crops. These trees are *on the quince*, but they have been planted by a man who knows how to manage trees.

“In the same garden are some fine Urbaniste trees,—a part on the pear, and a part on the quince,—planted in the same spot, in the same year. Those on pear roots are now beginning to bear some spare fruits, while the others, on quince, have yielded bushels of fruit for the last seven years, and are actually loaded with a splendid crop. All are equally healthy.

“He who wants large crops of pears, indifferent in size or quality, may plant all his trees on the pear stock; but he has to wait from ten to fifteen years. If you want large, fine fruit, which, in fact, pays better, with less trouble and expense, select your varieties on the quince. These will often bear the first year, and always the third or fourth from

their planting. If I had thirty trees to plant, twenty should be on the quince, the balance on pear stock.

“Some varieties will not grow upon the quince, but even these do well *double worked*, that is, budded or grafted upon a variety worked already upon the quince and succeeding upon it. The French call it *intermediary grafting*.

“In planting orchards, the same care and the same digging is required for a standard as for a quince stock, but how different the result? Ask Mr. Hovey, and others around Boston, from which they derive their largest profits. They all agree that the quince root has paid the soil, the expenses, tree and all, long before the *pear stock* has shown any sign of bearing.

“*Will quince roots do for orchards?*”

“For orchards, as we find them on most of our farms, a promenade ground for cattle, badly cultivated and shallow soil, stagnant water, injudicious selection of varieties, and more injudicious pruning, no, sir! No fruit tree of a refined class, no tree of any value, will do in such conditions.

“Let us look at some fine nurseries or orchards (schools,) where specimen trees are cultivated with care, and in proper soil and localities, and facts, those stubborn things, will soon bring conviction in the place of doubts.

“Messrs. Elwanger & Barry, and others, in Rochester; Mr. Wilder and Mr. Hovey, near Boston; Charles Downing, in Newburgh; Dr. Grant, near Peekskill; Mr. Reid, Elizabethtown, N. J., and many others, cultivate the pear on the quince stock with the best results.

“When one expects to reap the fruit of industry, he needs to give the proper attention to it; if he expects a fruit tree to yield crops of the most refined fruit, and to grow as a maple or a cedar in the woods, he is badly mistaken.

“Let the quince stock be abused, we shall do as the philosopher of Greece. When Pythagoras denied *motion*, Zeno went *walking*. Let the quince be slandered, it will remain one of our best friends. Our profits in fruit raising are mostly derived from *quince stock*. The best fruits of our splendid exhibitions are from the *quince stock*.

“Let gentlemen have their own way in stating contradic-

tory experiments, based upon improper or bad management, drawing from these unsatisfactory conclusions. 'On we shall go;' and by a judicious selection of varieties, and proper cultivation, we shall fill our shelves, and walk among our well-shaped, healthy pyramids with a blessing for the unknown genius who first tried the quince as a stock for the pear, and made really, in the pear cultivation, the same revolution as steam has done for our travelling."

Well does an editor remark :

"A more satisfactory answer to the tirade of nonsense which is going the rounds of the papers in reference to the cultivation of "dwarf pears," viz., the pear upon the quince, could not well be given. It is to the point, and coming, as it does, from one amply able, after many years of observation in France and Belgium, where the pear has so long been cultivated, as well as in our own country, to give an opinion, will have the influence to which its sound common sense entitles it.

"It is one of the most serious drawbacks to all progress in horticultural art, that those who do not know the first principles of a science should attempt to teach those who have made it a life-long study. These attempts to write down the quince stock are a sample of a thousand similar attempts, in the literature of gardening, to assail some of the soundest principles of physiological science and practical art; and it will end, as all similar attempts have, in more thoroughly convincing those who resort to the proper sources of information, how egregiously they have been deceived in following the notions of those who write well enough, or criticise wonderfully wise, but whose practice is as barren as some of the ideas which they attempt to advance."

To this Mr. Wilder adds an extract from his address, delivered before the Pomological Society at Rochester, last fall, in which he states, "that he has trees on the quince which, *twenty-five years* since, were obtained at the nursery of Mr. Parmentier, where now is the most populous part of Brooklyn, N. Y., and which have borne good crops and are still productive and healthy."

THE WILLOW.

BY WILSON FLAGG.

THE willow is of all trees the most celebrated in poetry. Its habit of growing by the side of ponds and rivers, and of spreading its slender branches over wells in the solitary pastures, has given it a peculiar significance in poetry, as the accompaniment of some of the most pleasing objects in the landscape. Hence there is hardly a song of nature, a rustic lay of shepherds, or any descriptive poem, that does not make frequent mention of the willow. The piping sounds from wet places, in the spring of the year, the songs of the earliest birds, and the hum of bees, when they first go abroad after their winter's rest, are all delightfully associated with this tree. We breathe the incense of its blossoms before the meadows are spangled with violets, and when the crocus has just appeared in the garden; and its premature flowering makes it a conspicuous object, when it comes forth under an April sky, gleaming with its drapery of golden verdure among the still naked trees of the forest and orchard.

When spring has closed her delicate flowers, and the multitudes that crowd around the footsteps of May have yielded their places to the brighter host of June, the willow sheds its fragrant aments, and appears in the deeper garniture of its own green foliage. The hum of insects is no longer heard among its branches, but the voices of the grassfinch and the summer yellow bird that delight to nestle in its spray, may be heard from its green shelter on all summer noondays. The sweet and peculiar incense of the peat meadow, with its purple carpet of cranberry vines, the glistening of its still waters, and the sight of the little fishes that gambol in its clear depths, are circumstances that accompany the willow, and magnify the pleasure with which we behold it, either in a picture or in real landscape. We prize the willow for its intrinsic merits no more than for its ideal relations; for it is not only the beauty of a tree, but

the scenes with which it is associated, and the ideas and images which it awakens in the mind, that constitute its charms.

The name of the willow suggests to the mind at once a thousand images that are poetical and romantic. There is a softness in its sound that corresponds with the delicacy of its foliage, and the peculiar flexibility of its slender branches. The syllables of the word must have been prompted by the mellow tones which are produced by the wind when passing through its airy spray. The writers of romance have always assigned the willow tree to youthful lovers, as the most appropriate place for their rustic vows, which seem to have a peculiar sacredness when spoken under the shade of the most poetical of all trees.

The willow, though tenacious of life, cannot flourish in dry places. Its presence is a sure indication of water, either on the surface or a little beneath it. The grass is green at all times beneath its shade, and the herds that delight to browse upon its foliage and young branches find beneath it the most grateful pasture. In the New England States it has long been customary to plant willow trees by the way-side, wherever the road passes over wet grounds. Some of the most delightful retreats for the pedestrian are found under these way-side willows. When he is panting with heat and thirst, the sight of their green rows gives him new vigor, as they indicate the presence of water and of cooling shade. The same comely rows of willows are found skirting the pools and water-courses in our pastures and arable meadows. These trees, which are mostly of the golden osier species, (*Salix vitellina*) were introduced from Europe, and are far more beautiful than any of our native willows. They are planted along the banks of streams and canals, and serve, by their long, tough roots, to consolidate the banks, and by their leaves and branches to afford shelter to cattle. These willows constitute one of the most conspicuous ornaments of our landscape in April, just before the elm and the red-maple put forth their blossoms; and so lively is their appearance, on account of their light green foliage and their

golden aments, that when we meet with a group of them on a cloudy day, we seem to be greeted with a sudden gleam of sunshine.

Nearly all our indigenous willows are shrubs. I have never been able to distinguish many of them, and have learned only from those who are skilled in noting botanical differences, that there is a large number of species. The public is indebted to Dr. Barratt, of Middletown, Conn., for an excellent description of this family of trees, in his work on the American willows. I have studied them more as ornaments of the landscape, than as subjects of botanical investigation. As one of the beautiful gifts of nature, the willow claims a large share of our admiration. Though it is not an appropriate ornament for our enclosures, yet the absence of the willow from our waysides, from the banks of quiet streams and glassy waterfalls, overhanging the small rivers and shading the brink of fountains, would be most painfully felt by every lover of nature.

With the weeping willow, there are somewhat different associations. This tree is not found in rude, wild and unfrequented places. It is planted in our enclosures and our grave-yards, and is associated with funereal scenes and with high cultivation. Notwithstanding its drooping character, there is no expression of melancholy in the aspect of this tree. It is rendered peculiarly lively by the light hues of its foliage and young branches, and its floating, graceful spray. The weeping willow is also highly poetical, on account of the frequent mention of it in sacred history and prophecy. It is a native of Palestine, and of the banks of the rivers of Babylon, where the Israelites sat down and wept, and hung their harps upon its branches.

It is probable that the drooping trees acquired the epithet weeping from their resemblance to the attitude of a person in tears, who bends over and droops. This is the general attitude of affliction in allegorical representations. But this peculiarity is far from giving the drooping trees a melancholy appearance, which is more commonly the effect of dark, sombre foliage. The long drapery of lichens, that hangs

from the branches of the southern cypress, reminds one of the drapery of mourning more vividly than the drooping of the willow. These festoons of lichens produce a more solemn effect when hanging from the pines, which have a darker foliage and branches than the cheerful and light-green cypress.

The weeping willow is supposed to have been first introduced into England by Alexander Pope, who, having received a basket of figs from Smyrna, and finding some green twigs in the basket, set them down in his garden in Twickenham. One of these produced a weeping willow, and, from scions of that tree, it is supposed that many of the trees of this species in England and America were derived. As the weeping willow is a native of a warm climate, it frequently suffers from the severity of our New England winters. It does not always ripen its wood before it is overtaken by the hard frosts, by which the terminations of its slender branches are destroyed. The climate of the Middle and Southern States is well adapted to it, and many large and beautiful weeping willows may be seen in those sections of the country.

The wood of the willow is soft, like that of the poplar; but as it has generally less length of shaft, it is not so well calculated for boards. Its small branches have a superior flexibility and toughness, and have always been extensively used in basket-making. The bark in some countries is woven into matting and cloth. It possesses also valuable tonic properties, resembling those of Peruvian bark. It may be on account of its tonic qualities, combined with nutritive fibre, that cattle so greedily browse upon the tender branches, after grazing in the pasture. Willow wood, when used for fuel, burns with little smoke, and emits a peculiarly agreeable fragrance.

OUR ORNAMENTAL TREES.

BY THE EDITOR.

12. THE SNOWDROP TREE. (*HALESIA TETRAPTERA.*)

THE SNOWDROP tree, or Silver Bell, as it is now commonly called with us, is one of the handsomest of our large flowering shrubs, and has generally found a place in choice collections of beautiful trees. The habit of its growth, the neatness of its foliage and the abundance of its pendulous white bells, succeeded by its large four-winged capsules or fruit, render it ornamental both in summer and autumn. Still it is by no means so well known as it should be. A native tree with so many fine qualities, and withal of easy cultivation, should be at least as common in our gardens as any exotic species, surpassing, as it does, the greater portion of them in attractiveness.



14. THE SNOWDROP TREE.

The *Halesia* (FIG. 14) is a native of the United States, growing in the Carolinas in abundance, along the banks of rivers, where it attains a large size. It was introduced into Europe as early as 1756, and seeds and plants were subsequently sent in large quantities. It is there considered

“one of the most ornamental of the American deciduous trees,” and very superb specimens are to be found at Syon House and other extensive pleasure grounds. One specimen at Syon measured in 1835, 29 feet high, and 120 feet in the circumference of its head. As usual the old Bartram garden has fine specimens, the largest of which is **FIFTY FEET HIGH** and three feet six inches in circumference. Its rate of growth is rapid while young, and in a favorable soil it attains the height of 15 feet or more in ten years, which is about the size of specimens in our grounds.

The *Halesia* is a native of river banks, and loves a moist and rather loose soil, in which it thrives with great vigor. Usually it is planted in situations less favorable, and is then only a moderate sized shrub. Its growth is regular, with a spreading habit, forming a broad head; the leaves are ovate lanceolate, acuminate and sharply serrated. The flowers, which are pure white, appear upon the branches of the old wood, are bell-shaped and pendulous, and somewhat resemble the snowdrop. These are succeeded by the seeds, which are large, four-winged, and remain upon the trees till winter. It blossoms in May, and is then one of the most conspicuous objects in the shrubbery.

Its cultivation is simple. It should have a good moist soil to produce large specimens, though it will grow in any ordinary locality. It is either raised from seeds or by layers. The seeds are usually two years in vegetating; if gathered in the fall, they may be immediately planted, and the second spring afterwards they will make their appearance. The quickest way is to raise it from layers, which, if put down in summer, may be taken off from the parent plant the second year, and planted out in nursery rows, where they soon, with a little care, make fine trees. It transplants easily.

As a single tree for lawns or pleasure grounds, the *Halesia* has few of the smaller class which equal it. It is also suitable for belts or shrubberies, and ornamental plantations of larger or smaller extent, its silvery blossoms forming a beautiful contrast with the varied colors of other shrubs which bloom in May and June.

General Notices.

GARDENS AND GARDENING AROUND PARIS.—The city of Paris was enshrouded in a dense fog when I departed from it, by the Lyons railway, for Fontainebleau; and I could not but notice the great difference between our smoky, stinking London fogs, and the one in question. It was the 20th of October, and one of those very heavy mists prevailed which so often herald a really fine day at that season. Starting at 6 A. M., it was very dense through the suburbs of the city; but, as we progressed, it rolled gradually away, and revealed the sun in all its glory, with a bright ethereal sky. I reached Fontainebleau to breakfast, distant from Paris forty miles. It is a quaint old town, and, judging from appearances, it seems to have got out of the march of progress.

My first object was to see the kitchen garden, which is upon a palatial scale—and I here beg to express my great obligations to the head gardener, from whom I received every possible attention. Proceeding there, I saw some very good pines, fruited in very small pots for the size of the fruit; they were commencing to force the Alpine strawberry for Christmas. In a deep pit Prince Albert peas were just sown, and there were immense ranges of pits for forcing French beans and strawberries, heated by dung linings, and having a flow and return copper pipe passing along the front of them. Their fuel is wood, and the fires must want unremitting attention, owing to the rapidity with which such pipes give off their heat. There were many cloches, with lettuces under them, and Batavian endive (*escarolle*), cardoons and spinach, formed the staple crops of the garden for winter use.

I saw nothing novel in the training of the fruit trees here. Perhaps one of the most remarkable features of French gardening, is the rude and simple manner in which they do things. For instance, almost all their forcing is done in little moveable frames, which are made out of old ship timber purchased at a cheap rate, and these are never painted. Looking at how little paint costs, and how invaluable it is when put upon really dry wood, I cannot but think their practice in this respect short-sighted. Perhaps I may be pardoned for a slight digression here on the subject of painting frames, &c.

It is much too common an error, in places where better practice might be expected, to allow both houses and frames to go three or four years without painting them. In the interim, the putty cracks, and rain insinuates itself, causing decay of the sash bars. This is sought to be remedied by giving three coats of paint, and cutting out the old putty—a process which breaks a good deal of glass—but we will suppose it fresh puttied and painted, and as it generally is put up without sufficient time to harden, to endure the scorching rays of the sun, and an internal moist atmosphere,

with a temperature of from 85 to 90°, what is the result? Why, the paint is all in blisters, and the new putty cracks; and wherever there is a fault, the water finds its way. Now, the object of paint is to preserve the wood, and it should present an uniform smooth, glossy surface, which will reject the wet. My own practice is to give one coat every year. I find it much the most economical plan, and I think it possible to preserve houses for an indefinite time by so doing.

The French hothouses are all most clumsily constructed, and many of them are of the rudest materials. The most extravagant thing I saw in them, was the universal use of copper boilers and pipes, instead of iron. On inquiring why these were preferred, the answer was, that they were worth more when old than iron pipes are. There is one peculiarity about their pipes; instead of being round, they are flat-sided, high and narrow, thus [], a flow and return of this shape traversing the front of the structure.

For grape forcing, they have no such houses as we have; the Chasselas de Fontainebleau is forced in pits. They are constructed of wood, which is in no case painted, and are about four feet in height at the back, and two feet in the front.

The wall of Chasselas grapes, thirteen hundred yards long, and from twelve to fifteen feet in height, is indeed a fine sight to see, as I saw it, covered with ripe fruit, which, in this charming climate, is of an exquisite color and flavor.

I entered the pleasure ground at the back front of the palace, where the grounds are arranged in the picturesque style, and noticed some extensive pieces of lawn, and, for the first time in France, some fine trees, with a noble lake of water. Large masses of dahlias prevailed in the vicinity of the palace, and never have I seen this plant so artistically used as it is here. The arrangement of color was most effective, and the quantity, perfection and brilliancy of the flowers formed a *coup d'œil* of singular beauty, and was much the result of the dry and genial climate of Fontainebleau. In the lake were many hundreds of voracious carp, which congregated in large numbers at a place where they are fed by visitors, and it was truly amusing to see their scuffles and gambols after pieces of bread. We now went to what may be called the back front of the palace.

The palace itself is a vast irregular aggregation of building, with no particular design, excepting that next the town, the frontage resembles half of the letter H, the sky outline of the whole being broken by towers of all kinds and sizes, with pointed roofs. The entrance from the town is through an immense court, formed by the half H. The garden front has a most magnificent sunk terrace, the beds of which were filled with dahlias and gladioli, which were of dazzling brilliancy. I thought, looking at the immense scale of it, that the arrangements were most admirable. In a large reserve garden were some handsome kinds of gladiolus, a flower which attains to great beauty in this delicious climate.

I did not see the interior of the palace, which I was informed is very fine, but preferred going to drive in the celebrated forest. We therefore set off *en route* for it, and soon reached its commencement.

It did not at first present any very striking objects, but, as we progressed, we noticed occasionally some gigantic beeches and oaks standing out in bold relief from the entangled thicket of underwood. Some of these trees were named, and two of the finest were called *La Reine* and *Charlemagne*. Proceeding on, we came presently to a spot which was charmingly picturesque.

We stood upon a bold projecting rock, and looked upon an enchanting scene. The spot commanded a view over the forest, and the foreground was lovely; looking around us, we saw gigantic boulders of the sandstone rock of the most grotesque forms, now an enormous mass poised on some tiny point, and everywhere large rocks overlaying each other in such a manner as dame nature's hand could alone effect; while, intermixed with these, were gnarled and contorted oaks, and pretty picturesque masses of them. It was a scene that the eye of taste could revel in—one that is still fresh in our memory.

We again mounted the carriage, and, after driving through some miles of forest scenery, arrived at another magnificent aggregation of rocks. Here we dismounted, and wended our way through a narrow, tortuous path, till we came out on the brow of a rock, commanding a fine view of the adjacent country. Here, too, we were shown a brigand's cave, happily without its tenants or any traces of them, save the smoke-stained roof; after seeing it, and thanking our lucky stars that there were no real, living robbers there, we retraced our steps, and, after driving through a vast extent of wood, now descending into the bosom of a dell and anon ascending to some elevated ground, occasionally stopping to admire some gigantic tree, and paying a visit to some other rocks, we reached Fontainebleau, after one of the most delightful days "in search of the picturesque" which it has ever fallen to my lot to enjoy.—(*Gard. Chron.*, 1857, p. 37.)

VIOLETS.—In reply to the request of "J. S." for information how to have violets the same time as Covent Garden, permit me to state that I think he will find no difficulty, if his plants are prepared in the following manner. The first week in May, take the earliest runners that can be procured, give them a dusting of sulphur to kill and prevent red spider, plant them one foot or fifteen inches apart, on a well prepared piece of soil. When they make runners, pinch off all but three to each plant; as those extend, pinch them back to the first joint, and peg them, at equal distances, round the parent. These will make fine stock for planting the following year. They may either be taken off when the plants are taken up in August or September, or remain on, as they sometimes produce very fine blooms; but the better way is to prick them out in a spare frame. Should the season prove dry, a liberal soaking with weak manure-water may be applied advantageously. Care should be taken, when taken up, that good balls of earth are secured. Some may be potted under a frame in 6-inch pots, and plunged in coal ashes on a gentle bottom heat, while others may be planted out; they should be placed as near the glass as possible, and have plenty of air given them on fine days. Should the weather be severe, they will

require a slight covering to keep out frost, but five or six degrees won't hurt them with a bottom heat.

To have violets in winter, your correspondent must plant the kinds I name, and manage them very skilfully: taking situation particularly into account, he will be sure to succeed. I often wonder how it is that more is not said about violets. With the exception of the Neapolitan, for the last two years there has not been a remark made in your pages about them, and yet there is not a lady in existence at all fond of flowers, who would not look on the violet as her chief pet through the dreary winter months. They should be grown with sufficient length of stem to enable them to be formed into bouquets; but if of no other use, the perfume they give off would amply repay their cultivation. "J. S." grows the single blue spring blooming variety; what he calls the double Russian, is no doubt the old double spring blooming kind, a beautifully perfumed sort while in season, which is, however, so short, that this violet is now almost extinct. The double perpetual, or tree violet, has superseded it; the latter is a most beautiful kind. Where it does well, it will bloom freely eight months out of the twelve. Some imagine, that because it is called a tree violet, it naturally produces a trunk-like stem, but it has not the least inclination to do so, unless "trained to it." It is the work of years to get a good specimen tree violet, requiring a deal of skilful care and management, as it is so liable to be attacked by red spider. The varieties which "J. S." must grow so as to have them through the winter, are the old Russian, which blooms freely from September to the end of March. They may be bought cheaply of almost any nurseryman, but care should be taken to get the true variety; for there is scarcely any one that has not got them, mixed with the spring blooming kind, from which, unless pretty well acquainted with their foliage, it cannot be distinguished. It is my belief that where violets have been once grown, they will come up for ages afterwards. Hedge violets, for instance, in a garden, soon become a complete nuisance. One remark I wish to make concerning the Neapolitan; it will grow without the help of glass, under a S. S. E. or S. W. aspect, at the foot of a wall, almost covering the ground with bloom for the next month, and perfuming the air for a great distance. My Russian superb, a seedling from the old Russian, is, perhaps, the best sort in cultivation, but it requires good management, and, when "well done," is quite an attraction. It blooms from September to March, but it is liable to lose its foliage shortly after Christmas, unless it is protected from the wet under glass. Be careful to give plenty of air. My white Russian is a beautiful clear white, and blooms all through the winter, but it gets splashed with the rains unless covered. It won't bear confinement, and for that reason I would not recommend it. The double white is a beautiful double clear white; its principal time of blooming is in May—a good compact variety. The white tree violet is a semi-double kind, which no doubt would form a tree if "trained to it," but it is of no other use, having a bad habit for borders. The double perpetual tree violet is a beautiful variety, either for pot or borders. The old Russian, the most useful of all, is the kind with which Covent Garden is supplied through the

winter. It will grow in almost any climate or situation, and blooms most profusely all through the winter, if kept thin and clean of weeds during the summer previous. Now, and for the next three weeks, is the proper time for planting all kinds of violets, either runners or divisions of old plants. They should at least be nine inches apart in the rows; should there be more than single rows, they should be fifteen inches at least from row to row. They are not particular as to soil, provided it is rich with manure; if poor, they are apt to get attacked with red spider, which causes the foliage to die down in winter, and makes the plants so short in the stem. Violets should be fresh planted every year; the runners should not be cut off, as they bloom on the top of them.—(*Gard. Chron.*, 1857, p. 235.)

COLORING OF THE SKIN OF APPLES AND PEARS.—Duhamel, in his *Treatise on Fruit Trees*, says that, to encourage the coloring of kernel fruits, it is merely necessary, when they have attained their full size, to remove the leaves which shade them, first from one side, then from the other, and finally all round. He adds, that their color may be rendered more brilliant by marking the side next the sun with a hair pencil dipped in cold water. This passage applies more especially to pears. It suggested to M. de Flotow experiments, the results of which he has detailed in a lengthened article on kernel fruits in general. He selected some favorably situated fruit of the *Napoléon*, *Beurré d'Hiver*, *B. Diel*, *Merveille de Charneux*, and more particularly of the *Poire longue blanche de Dechant*, on which he had never observed, at the time of ripening, the least degree of redness, whilst the other varieties had several times exhibited a little red, approaching to yellow or brown. He moistened these fruits in the morning, and repeated the operation several times during the day, when the sun shone upon them: and he continued this treatment as long as the weather permitted. The result of this experiment has justified the assertion of Duhamel. All the fruits thus moistened were remarkable among others of the same variety and on the same tree, by a more brilliant red. The *Poire de Dechant*, in particular, exhibited a decided red tint, while the fruit usually presents no such appearance.

M. de Flotow had remarked, but without being able to account for the fact, that in apples and pears which were striped on both sides, the rays or stripes were longitudinal, that is, from the eye to the stalk, but never transversely, although he says that in several works on pomology, fruits are figured with the stripes in the latter direction. The results of the experiments have led to the conclusion, that the action of the sun's rays upon the skin of fruits, wetted or moistened by dew, is the cause to which the production of these red bands is to be assigned. If, says he, fruits wetted by dew are observed whilst the rays of the rising sun strike upon them, it will be seen that the moisture collected in drops on the edge of the cavity in which the stalk is inserted, and on the sides, forming lines of moisture, of greater or less length, according to the size of the drops, and according as the sun evaporates them with greater or less rapidity. It will be understood that there must be great differences in the streaking, according as the dews

are more or less frequent, according as they are light or heavy, and according to the power of the sun's rays and the fineness of the skin. It is likewise probable, that the difference between the day and night temperatures has some effect in this respect; and streaked fruits are generally autumn or winter varieties. Pears are seldom streaked, or at least not distinctly so.

To throw some light upon the coloring of fruits, M. de Flotow has tried the action of acids and alkalies upon the skin. The following are, briefly, the principal results of his experiments. Strips of skin, removed from the fruit and cleaned, became intensely red when treated with dilute sulphuric acid; at the same time they yielded a red juice. The color only became brighter and more beautiful, when treated with diluted hydrochloric acid. Ammonia restored the original color. Other pieces of skin having been, in the first place, treated with ammonia, became brown, and their color darkened to such a degree that they appeared black; on the application of diluted sulphuric acid, their natural color was speedily restored. The Pomme douce d'Amérique, which is streaked with bright red and pale yellow, underwent no particular change when treated with sulphuric and hydrochloric acids, the red lines only becoming a little more conspicuous; and, with ammonia, they became of a blackish-brown color.

Whilst leaving to botanists and chemists the explanation of these facts, and several others contained in his memoir, M. de Flotow believes, however, that he can conclude from them, that the matter which reddens the skin of fruits is totally different from the green matter which is also found there; and that it likewise extends to the flesh immediately under the skin.—(*Gard. Chron.*, 1857, p. 151.)

EFFECT OF A BLACK SURFACE ON FRUIT TREE BORDERS.—In the course of some experiments with different colored paints on wooden fences to which fruit trees were trained, it occurred to me that the absorbing power of black might be beneficial to fruit tree borders, and more particularly to vine borders. Impressed with this idea I cast about for the best material to give a black surface to a border in front of one of my vineries; peat charcoal occurred to me as convenient, and so on one of those hot days we were visited with last August, I proceeded to give a surface dressing nearly 2 inches in thickness to a small space, for the purpose of testing the heat-absorbing qualities of a black surface. I had scarcely, however, spread the dressing before it occurred to me (as it ought to have done earlier) that charcoal, being an indifferent conductor of heat, or almost a non-conductor, would neutralize the effect of color, but I proceeded with my experiment under a hot sun, with the thermometer at 85° in the shade, and the results were as follows:—

A thermometer 6 inches deep beneath the coat of charcoal stood at 82°; within 6 feet of this spot one placed at the same depth without the charcoal dressing stood at 84°, thus giving two degrees in favor of the absorbing power of the bare surface. I then placed a thermometer laid flat in the charcoal—it stood at 118°; another placed on the bare surface within 6 feet of the above, stood at 124°, giving 6 degrees of heat in favor of the bare

surface, a calcareous sand. I consequently gave up the idea of dressing my vine border with peat charcoal. I have, however, since thought that I ought to have tried a thin coat of charcoal—say one-quarter of an inch in thickness—and then to have seen if the color would not have neutralized the small non-conducting power of so thin a coat of charcoal. I dare say these experiments have been tried, and that there is nothing new in them. I merely relate what I did to call forth information which, doubtless, some of your numerous correspondents can furnish. If by any simple means we can add heat to our vine and fruit borders in the summer, it will be a step forward. The following account of another charcoal experiment I have just received from a reverend friend, whose peaceful leisure is devoted to fruit culture; if you knew how active he is in his researches you would be inclined to call him as I do, the “philosophical fruit grower.”

“I must tell you an experiment I made this year. It began in November, 1855. Having got my orchard all pruned, and digging time being at hand, I selected two Louise Bonne pears on the quince, growing side by side. They were both well manured (for every year I manure all my trees.) Then I formed a five-sided figure, and at about 2 feet from the bole I drove down pegs at the corners, to which I nailed thin boards, about 4 inches in breadth, which thus enclosed a space around the tree. This space was considerably raised by the dung which had been applied. I then filled it flush with small charcoal dust; all I wanted with this was its color, for I expected it would become heated by the sun’s rays and give heat to the roots, and through the sap to the tree. I had never before observed any difference between the two trees. Last spring the tree treated with charcoal in November was in bloom a week earlier than the other; it carried seven dozen of fruit, and the other not quite one dozen, and the charcoal tree, as I may call it, had fruit, on an average, twice the size of the other.”

I am by this reminded of an experiment with soot on my own pears, but with no thought or calculation as to the heat absorbing qualities of a black surface. In the winter of 1854--'55 I gave my plantation of Louise Bonne pear trees on quince stocks a dressing of soot instead of manure. I did this to correct the effects of the soil in which they are planted, it being too calcareous, giving to the leaves a yellow tinge, (soot always promotes a dark green tinge to the leaves of corn as well as trees.) About half a peck was given to each tree in a circle round the bole of 3 feet in diameter. The following season I had the finest crop of pears ever seen, and the most beautiful and perfect fruit. I have reason to believe that such a beautiful “lot” of Louise Bonne pears were never before seen in Covent Garden market. I am now inclined to think that this at least was partly owing to the black surface of the soot. I am now about to give the trees the same amount of soot on the surface, and shall watch narrowly its effect.

It would appear from the interesting experiment quoted above that, although my charcoal covering depressed the thermometer in both instances placed on it and under it, much heat must have been absorbed by it and conveyed to the pear tree, if we may judge from its apparent effect in

forcing the tree into comparatively early blossom and in giving enlarged fruit. The experiment may be tried with great facility on trees with their roots near the surface, such as Pear trees on quince stocks, apples on Paradise stocks, and peach and plum trees, which are always inclined to root near the surface. So let us hope that we shall hear more about the effect or non-effect of a black surface on fruit tree borders, towards the end of the forthcoming fruit season. Charcoal dressings may be given at once; the effect, if any, will be the same as if given in November.—(*Gard. Chron.*, 1857, p. 36.)

RASPBERRIES.—I quite agree with the opinion advanced in your leading article at page 819, 1856, that the raspberry has not been so much improved in point of quality as its relation, the strawberry; but I cannot think that the method of culture represented in your first figure is calculated in any degree to effect that desirable object. In that figure the plants appear to be at least 3 feet asunder in the rows, and there are no fewer than 12 bearing canes left upon each root after pruning. Now it might fairly be questioned whether with the advantage of the most fertile soil a plant trained upon the plan in question could long continue strong enough to carry good crops of good fruit. Twelve bearing branches will yield a considerable weight of fruit, and in addition to that drain upon the plant, it is also expected to furnish an equal number of fruit-bearing shoots for the following season, which will be found too heavy a tax upon its strength. For this and other reasons it is better to place the plants closer together in the row. My practice (the soil being naturally very poor) is to plant one foot apart, and to allow each plant to carry one bearing cane and one growing shoot for the next year; during the growing season, therefore, the canes when tied to the wire will be 6 inches asunder. But as it is not possible to keep all the plants in an equal state of vigor, it will occasionally happen that a root will fail to throw up even one shoot long enough and strong enough for taking its proper place as a fruit-bearing cane at the autumn pruning, in which case it becomes necessary to substitute a cane from one of its more robust neighbors which has been retained for this purpose at the summer training. In good loamy soil, such as the raspberry delights in; 2 feet apart will not be too near together for the plants, because they will then grow vigorously enough to carry two or three bearing canes each, as may be required. This system properly carried out ensures to each shoot a fair supply of light and air, without which it is vain to expect large and well flavored fruit. With respect to the quality of the different varieties of raspberry, I have never yet tasted one superior to the true red Antwerp. The true white Antwerp seems to be very scarce. I have never seen it growing in this part of the country, and have failed in procuring it from one of the most eminent fruit tree nurserymen. Although the white raspberry is a very nice dessert fruit, yet not being used for any other purpose in a gentleman's establishment, it is less valuable than the red kinds. Some one of the varieties of what is known as the "Double-bearing" raspberry ("autumn-bearing," would be a better name,) will be found very

desirable in a gentleman's garden, and perhaps the best of them is "Rivers's large-fruited monthly." As the fruit of none of this class is equal in quality to that of the best summer-bearing sorts, they should be prevented from fruiting at that season, which can be done by cutting off the canes close to the ground at the winter-pruning; this will also cause them to yield a more abundant autumn crop. My remarks, it will be observed, refer only to the cultivation of the raspberry in its present state. Your suggestions in the article above alluded to, for the future improvement of this most useful fruit, will, I trust, be acted upon by some lover of gardening who has plenty of leisure for the purpose; and possibly such a person might be further stimulated to make a beginning if I remind him of what has been effected within these few years by florists. In the case of the raspberry (and I might add the currant,) the harvest, although slower, will be equally sure.—(*Gard. Chron.*, 1857, p. 38.)

CALYSTEGIA PUBESCENS.—Having observed one or two articles in your paper concerning the double convolvulus, and as the parties have evidently been disappointed in their wishes, perhaps *Calystegia pubescens*, or double Chinese convolvulus (which I have seen twice in blossom), may answer the purpose just as well. The first time I saw it was at a country gentleman's house, whither a few friends and myself had gone to see an ancient British tumulus that had been opened. The plant was growing by the hall door, and struck me by its singularity and beauty. The owner was absent by accident, and the ladies of the family did not know the name, but gave me a blossom and part of the root. On looking over the Horticultural Society's Journal for 1846, a wood cut of this very plant presented itself, to my great delight, of which I send the description:—"Calystegia pubescens, raised from a small portion of the root found in a dead pæony root, in box No. 22, from Mr. Fortune's mission in China. The box was sent from Shanghai, and stated to contain a plant of the double convolvulus, which was supposed to be dead when received at the garden in June, 1844. This curious plant approaches very nearly to the *C. sepium* or larger bindweed of our English hedges, from which it differs in having firmer and smaller leaves, much narrower bracts, and a fine pubescence spread over every part. It is the first plant of its order that has been mentioned as producing double flowers. They are about as large as those of a double anemone, but the petals are arranged with the irregularity of the rose; they are of a pale very delicate pink, and remain expanded for some days. The calyx is quite unchanged. The exterior petals are very much lacerated and irregular in form; those next the centre are narrow, drawn together in a kind of cone; the next central are completely concealed by those without them, and diminish until they are mere scales, analogous to those which may be found in the first buds which burst in spring. Not a bract can be found in stamens or pistil. It is probably quite hardy if planted in a dry situation. It requires a rich loamy soil, and is easily increased by the roots. The roots very much resemble those of the common bindweed (*Calystegia sepium*). It flowers freely in July and August. It is a very handsome climbing plant,

with large double flowers, which are produced freely.—Sept. 19, 1845.” Such is the account in the journal quoted above. Again, I saw the same kind of plant growing up the stem of a half standard rose, (which it concealed admirably), and looking very handsome, in the gardens of the Hon. Robert Clive, Oakley Park, near Ludlow, which he kindly throws open to the public at the Bromfield Flower Show. An acquaintance tells me it has only one fault, and that is, it will scramble all about a garden if the soil is light, on which account he always grows it in a tub, otherwise I should say it would make an admirable bedding plant.—(*Gard. Chron.*, 1857, p. 134.)

Gossip of the Month.

BETULA POPULIFOLIA.—I am glad to see Mr. Reid calling attention to the very popular error of *B. populifolia* and the European *B. alba* being the same species. Gray makes the former synonymous with the latter; but I do not think his description of it perfect. His description certainly approaches *B. alba*. He writes of *populifolia*, “leaves smooth and shining on both sides;” with us the petioles and veins are quite downy, and the surface of the leaf itself is so in its youngest stages.

He also writes, “glandular, dotted when young,” but it is very indistinctly so; while the English species is much, and, indeed, the young shoots have quite a verrucose appearance. When I first noticed these discrepancies, I was afraid I had got hold of *B. papyracea*, which is admitted to be a little hairy beneath its leaves; but the characters I have described are so constant on all the trees I have examined, that are scattered so plentifully through New Jersey, where I believe the paper birch is rarely, if ever, found, that I think no mistake has been made on that point.

It is very easy to distinguish the English from the American white birch by its much more twiggy habit of its long, slender and warty leaf stalks; its smaller and more deeply toothed leaves; its short and thick fertile catkins—and especially by the wings of its seeds, which are set quite horizontal and are regular in shape.

I believe with Mr. Reid, that there is far more danger of confounding *B. populifolia* with *B. papyracea*. The leaves of the paper birch, however, are very downy, and the scales of the ripe catkins are nearly triangular; while those of the *populifolia* resemble a bird in miniature, with its wings extended.—*Yours*, T. MEEHAN.

SPLENDID COLLECTION OF PLANTS FOR SALE.—The celebrated farm and country seat, the residence of T. Cope, Esq., eight miles from Philadelphia, on the Bristol road, will be offered for sale, with the hot-houses, conservatories, green-houses, &c., and the complete collection of plants, on the 20th of May, at 11 o'clock, A. M., and continue till the whole property is dis-

posed of. Mr. Cope will make his future summer residence on his property in Westmoreland County, Pa.

The greenhouses, conservatories, &c., are fourteen in number, and include a cactus house, lily house, orange house, orchard house, camellia house, vineries and nectarine house. These are all stocked with the choicest specimens of plants, many of them rare and of large size, particularly the century plant, palms, cactuses, camellias, &c. A pamphlet, containing a description of the houses and some of the plants, by our correspondent, T. Meehan, formerly gardener to Mr. Cope, may be had of the auctioneers, Messrs. Thomas & Sons, Philadelphia.

We regret to record the sale of such a fine collection, fearing it will pass into the hands of some one who may not have the taste and zeal of Mr. Cope to keep it up to its present condition. We trust, however, that among the wealthy gentlemen of Philadelphia, some one will purchase the place, who will maintain it in all the beauty which has given it so high a reputation under the ownership of its present proprietor.

CHINESE SUGAR CANE.—This newly introduced plant is attracting much attention among our farmers throughout the country, and large quantities of seed will be put into the ground this spring. Its value as a sugar-producing plant remains to be tested. It, however, yields a large quantity of saccharine matter, which affords a superior syrup, and, as a forage plant, no doubt it will become a staple product of our farms. The present month is the time to sow the seed, and we advise all to give it a trial.

EXHIBITIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—The first exhibition of the season, on opening of the Hall, will be held on Saturday, the 23d of May, when prizes will be awarded for plants in pots, cut flowers, bouquets, &c.

The next Annual Exhibition of the Society will be held in September next, commencing on Tuesday the 22d, and continuing till Friday evening. No place has yet been selected for holding the exhibition, but it will probably take place in the Music Hall in Winter Street.

Societies.

HARTFORD COUNTY HORTICULTURAL.

DEAR SIR: I send you the list of the officers of the Hartford County Horticultural Society for this year, for publication in your valuable journal.—T. R. DUTTON, *Cor. Sec.*

At the annual meeting of the society, held April 4th, 1857, the following officers were elected for the ensuing year:

President—William W. Turner.

Vice Presidents—Dr. G. W. Russell, Dr. J. S. Butler, H. W. Terry,

Hartford; Henry Mygatt, Farmington; Charles L. Porter, East Hartford; N. W. Stanley, New Britain; Norman Porter, Berlin; Salmon Lyman, Manchester; E. A. Holcomb, Granby; Dr. H. A. Grant, Enfield; S. D. Case, Canton; Sheldon Moore, Kensington; T. C. Austin, Suffield.

Recording Secretary—D. S. Dewey.

Corresponding Secretary—T. R. Dutton.

Treasurer—P. D. Stillman.

Auditor—H. L. Bidwell.

Standing Committee—Wm. F. Tuttle, S. H. Clark, George Brinley.

The Society's Committees were also chosen, as follows:

On Fruits—W. F. Tuttle, M. C. Weld, Geo. Brinley.

On Flowers—D. S. Dewey, E. Goodridge, James Stubbins.

On Vegetables—C. T. Webster, N. Hollister, J. H. Goodwin.

MARYLAND HORTICULTURAL.

President—Edward Kurtz, Esq.

Vice Presidents—Thomas Winans, W. C. Wilson, Hamilton Easter, Nicholas Popplein, Rev. F. Wilson, Ross Winans.

Treasurer—Capt. C. D. Snow.

Corresponding Secretary—W. D. Breckenridge.

Recording Secretary—Samuel Feast, Jr.

Committee on Flowers—W. C. Wilson, Capt. C. D. Snow, Wm. Fowler, Geo. McKimminie, Edward Kurtz, John Feast, T. Fairley, O. Kemp, James Pentland, James Galloway.

Committee on Fruit—W. C. Wilson, Edward Kurtz, W. D. Breckenridge, John Feast, John Hilbert.

Committee on Vegetables—C. U. Stobie, J. Pentland, John Feast, Jr., John Register, Edward Whittemore, C. Campbell, W. Lusby.

Committee of Arrangements—S. Feast, John Feast, Thomas Fairley, Charles Campbell.

Horticultural Operations

FOR MAY.

FRUIT DEPARTMENT.

April has been a cool and very variable month, with an unusual quantity of rain, and snow to the depth of from three to six inches, with many frosty mornings. The constant saturation of the ground with moisture, together with uncomfortable weather, has put back all out-door work, which the anticipated warmer season will render necessary to complete with all the greater dispatch. Planting should be proceeded with as rapidly as possible, that time may be left to do other work so necessary at this season. The same operations which we noted in our last, will still require attention.

GRAPE VINES in the early houses will now have their fruit fully ripe, unless the later varieties. Keep the house dry, with plenty of air, until the crop is gathered. Vines in later houses will now be swelling their fruit, and will need much attention to be given to thinning, tying up the shoulders topping laterals, &c. Maintain a good temperature, and keep a moist atmosphere by repeated damping off the walks or borders. Air freely in good weather. Vines in cold houses will be advancing rapidly, now that the weather is milder. Keep up as even a temperature as the season will admit, and syringe freely till the vines begin to show flowers; top the laterals if growing too fast.

STRAWBERRY beds may be made this month. Keep old beds clear of weeds, and dress with straw to keep the fruit clean when it begins to ripen. Water freely if dry weather.

PEACHES in pots should be liberally watered as the fruit swells, and have an abundance of air preparatory to removing them to the open air in June. Thinning should be attended to when large fruit is desired.

GRAFTING may be continued throughout the month.

PRUNING dwarf or other trees may be continued if neglected or omitted for want of time. Mulch and water trees intended for producing large specimens.

GOOSEBERRIES should be mulched with *salt* hay or seaweed, to prevent mildew.

INSECTS, particularly caterpillars and canker worms, should be carefully looked after and destroyed before they injure the foliage and spoil the crop.

FLOWER DEPARTMENT.

As the plants go out of bloom, in the greenhouse or conservatory, they should be removed to a frame or some sheltered place to make room for others now in season. All the summer blooming kinds should receive every attention to make them fine plants. Repot all that need it, and bring forward others for a succession. Keep up a good temperature while the Camellias and Azaleas are growing freely, and syringe often.

PELARGONIUMS will now begin to bloom, and should be more liberally watered. A little shade in the middle of the day will keep up the bloom for a long time. Fumigate if the green fly appears.

AZALEAS now growing rapidly, should be freely watered and often syringed. Top all rambling shoots in order to have compact plants. The abundance of the bloom next year depends upon the attention given to the plants at this season.

CAMELLIAS will be growing rapidly, and will require an abundance of moisture, both at the root and on the foliage. A little shade is also beneficial till they have made their growth.

ACHIMENES AND GLOXINIAS, now coming into bloom, like a warm situation and a slight shade.

MONTHLY CARNATIONS, intended to bloom in the house, should now have a shift into larger pots.

FUCHSIAS will need another shift. Keep them tied up to neat stakes, and give them plenty of room if large specimens are wanted.

CINERARIAS will be still in bloom, especially late potted plants. Keep down the green-fly, which at this season is very troublesome.

CHRYSANTHEMUMS may yet be propagated by cuttings or division of the roots.

CALCEOLARIAS may have a shift into larger pots; water carefully and air freely.

JAPAN LILIES growing rapidly, may have their last shift into their blooming pots. Tie up the stems to neat stakes.

HEATHS AND EPACRIS should be headed in and removed either to a frame or the open air. Repot young stock at once.

GARDENIAS may have a place in a good hotbed, where they will soon swell up their flower beds.

RUNNING PLANTS of various kinds growing in pots and intended for fine specimens, should be kept neatly trained to a good trellis. Syringe often and keep down insects.

WINTER BLOOMING PLANTS of all kinds must not be forgotten. Propagate and bring forward young stock for this purpose.

FLOWER GARDEN AND SHRUBBERY.

An abundance of work will now require attention; the season will advance with all the more rapidity after the cool month. Give attention at once to the most important things. Prepare and arrange grounds for annuals, perennials or bedding plants. Sow seeds of the hardy annuals. Prune roses, if not already done; clean and weed tulip and hyacinth beds. Set out summer flowering bulbs.

Attend to the walks and lawns; the recent rains have given the grass a good start, and from this time it will require cutting every week or ten days. Rake and roll the walks, and lay edgings of grass, thrift or box.

DAHLIAS for early flowering may be set out the middle or last of the month.

PÆONIES, as they advance to bloom, should be tied up neatly to good stakes.

CARNATIONS AND PICOTEES may now be planted.

DAISIES, wintered in frames, should be removed to the beds or borders.

GLADIOLUSES may be planted the last of the month.

SEEDS of many annuals may be planted for late blooming.

BEDDING PLANTS of all kinds may be set out after the 20th of the month. It will be unsafe to risk them earlier, unless means are provided for protecting them from frost.

PANSIES may be set out in beds, selecting a cool aspect, away from the midday sun if possible. Sow seeds for a succession.

ROSES, in pots for summer blooming, may be turned out into the ground.

NEAPOLITAN VIOLETS may be divided and planted out in frames so as to secure good plants for winter bloom.

THE IMPORTANCE OF WATER IN VEGETATION.

“WATER,” says Loudon, “whether as a source of nutriment, or a medium of effecting various other objects, is one of the most important agents in cultivation.” It is, perhaps, quite unnecessary that we should make this quotation from so eminent a writer as Mr. Loudon, who undoubtedly has said only what others have said before him, as the basis of our remarks, or that we should suppose any cultivator, who knows anything about vegetation, would have any other idea in regard to the importance of water in the growth and culture of trees and plants, than that contained in the above extract. Without water, all vegetation would cease at once. The simplest individual understands this. No plant could perform its necessary functions for any length of time, unless we except the cactæ and some other peculiar tribes; and hence its use and value are, to a certain degree, appreciated and acknowledged by all. But it is only in degree—for very few even among intelligent cultivators really know how great an agent it really is, and a still less number who understand the principle of its application, or the requisite knowledge to attain the best results from its use.

A chapter on this subject we have thought not inapplicable as we are entering upon the warm period of the year, when the brilliant rays of our almost tropical sun, and the warm blasts of our southerly winds, have such a trying effect upon all kinds of vegetation. Our ideas of gardening have, in the main, been derived from the works of English cultivators,—our own horticultural literature being, of a necessity, yet scanty, and, in the main, borrowed from the former. So far as general principles are concerned, there is no difference in this respect, whether we study the one or the other; but in regard to details there is a vast difference, and they are as widely unlike in many things as can well be imagined. But though we follow so nearly in most instances the prac-

tice of English writers, in one we fall short—far short of them. And this one is in the use of water. Though, with an average temperature several degrees higher, a bright sunshine far stronger, and a fresh breeze direct from the tropics, we think far less of the importance of water than they do, and scarcely use it, except when necessity requires, only for the growth and perfection of plants in pots.

It is not necessary that we should enter into a statement of the difference between the climate of Great Britain and the United States, as we have done so before, in our previous volumes, and have shown how much more mild and cool the climate of the former is in summer. The average quantity of rain is nearly the same as our own, varying from thirty-five to forty-five inches; but it is distributed much more evenly, falls in smaller quantities and much oftener, and is more effective from the better condition the plants are in to receive it, their leaves not being so much affected as by the higher temperature and atmospheric dryness of our warm summers. True, occasional seasons of drought occur in Great Britain, as in our country, but they are only comparatively dry, and vegetation does not suffer as during one of our July or August droughts, when it would seem as if every particle of moisture was exhausted from the soil. While with us agricultural crops are often severely injured by excessive droughts, in Great Britain they are only damaged by excessive dampness. This difference of atmospheric moisture, though understood by many who are conversant with the climate of that country, is not sufficiently known to render our remarks understood without this brief comparison.

As we have above stated, while we follow so implicitly many of the directions of English cultivators, we fail in one of them, viz., the application of water. Why this is so, we are not able to say. We rarely water garden crops of any kind; occasionally we look after some favorite plant, and see that it is duly supplied with this element till well established, when it is left to itself,—but no systematic attempt is made here, as in Britain, to water whole crops of

either fruit or vegetables. Recently having occasion to look over some of the horticultural works of the most experienced English writers, we were struck with the frequent repetition of the advice to apply water to almost every fruit tree, plant or vegetable; and, as a sample of such advice, we quote the following:—

Marshall, an old and experienced author, remarks, “that strawberries and cauliflowers should generally be watered in a dry season; strawberries more particularly when in bloom, in order to set the fruit—and the cauliflowers when they show fruit, in order to swell the head: in a light soil this ought never to be omitted. In very dry weather, seedlings, asparagus, early turnips, carrots, radishes and small salads, will need an evening watering.” He adds, “Water to the bottom and extent of the roots as much as may be. The wetting only the surface of the ground is of little use, and of some harm, as it binds the earth, and so prevents showers, dews, air and sun from entering the soil, and benefiting the roots as they otherwise would do. The ground about plants which are frequently watered should be occasionally stirred and raked. Many things are impatient of being kept wet about the stalks, and therefore watering such plants should be generally at a little distance.” He recommends “watering the roots of wall trees in dry weather effectually; watering wall trees with an engine in the evening refreshes them much, and helps to rid the trees and wall of insects and filth.”

Our cultivators complain of the mildew upon the gooseberry. Read how English gardeners treat their bushes: “By preparing,” says Loudon, “a very rich soil, and by watering and the use of liquid manure, spading and thinning, the large fruit of the prize collection is produced. Not content with watering at the root, and over the top, the Lancashire connoisseur, when he is growing for exhibition, places a small saucer of water immediately under each gooseberry, only three or four of which he leaves on a tree. This he technically calls suckling.”

“Water,” says Loudon, “is essential to a good crop of

strawberries in dry weather, and may be performed on a large scale by means of a barrel fitted in a proper manner, or, on ordinary occasions, by a common watering pot. Some amateurs grow their plants in beds having small open-built channels as alleys, and then, the beds being formed on a perfect level, by filling the alleys with water, it penetrates the soil of the beds on each side."

Hollyhocks.—"If dry weather sets in," says Turner, "keep them well watered after mulching." "Continue," he again says, "to water dahlias over the foliage every evening during dry weather, and practice a good root watering once a week, according to the weather." "Phloxes," says one of the best cultivators of this fine flower, "should receive a good watering once a week."

We might multiply these quotations to any extent, but they will be sufficient to show to those, not familiar with English gardening, the extent to which watering is used on some particular crops, and more or less on all, when superior culture is an object. If all this is required in the climate of that country, how much more need that it should be resorted to in our own, where evaporation is carried on with double the rapidity that it is in that cool, drizzly and humid isle?

Having suffered much the last two dry years from a scarcity of water for our plants, we have seen the ill effects of short supplies of this important element in vegetation; and now, with the means for its more liberal use, we have already seen how much plants are improved. A sprinkling of water is oftentimes attended with real injury, for the top soil is kept damp, which deceives all but the skilful cultivator; and hence the bottom roots are constantly dry, while the surface roots are constantly soaked. The effect of this kind of watering, which is quite too general, is, that the roots at the bottom are dried up, and those at the top rotted off. When water is given, it should be in sufficient quantity to thoroughly moisten every particle of soil.

Our finest fruits are oftentimes a failure, from the want of a liberal supply of water; the cracking and splitting of our

large and fine varieties arises, as we have before frequently stated, from the absence of a proper degree of moisture. If the soil is not naturally deep, so that the roots can penetrate and find the moisture which they need, this deficiency must be supplied, or the fruits will not attain their full size. It is useless to expect any other result. Not only should it be supplied at the root, but, if possible, over the foliage and fruit. The crop of strawberries would be, undoubtedly, in many instances, doubled by half a dozen liberal waterings. The roots lie near the surface of the ground, and when this is exhausted by long continued dry weather, how shall the plants receive their nourishment if not by artificial aid? We wonder at the size of the large strawberries which are occasionally seen at the London exhibitions, but if we knew the pains which were taken to produce them, they would cease to be wonders. The wonder rather is, how we raise such large strawberries in our own climate, where often, during the entire ripening of a crop, not sufficient rain falls to moisten the soil to the depth of an inch.

Vegetables of many sorts, particularly lettuces, cauliflowers, broccoli, &c., can only be grown to perfection with the aid of liberal waterings. To have them large, tender and succulent, they must not be cut off from a constant, steady supply of water; and, when the rains do not supply this, it must be done by artificial aid. It only needs a trial of those raised with proper attention to moisture, with such as are produced without it, to decide which are the best.

Every garden should, therefore, have the means of commanding a ready supply of water. It cannot be considered complete without it. There should be cisterns, or wells, or reservoirs of ample capacity to afford an abundant supply through the longest drought. Not that we would confine watering to seasons of drought alone, but that then, when it is more needed, there should be no want. Watering, we are convinced, is not half enough attended to in what is generally termed moderately moist weather,—for, though occasional showers may invigorate the plants, cleanse the foliage, and keep the surface-soil moist, there is a deficiency

beneath, which a good watering will replace, and the color and growth of the plants will surely attest its presence.

Of the details in regard to watering, we have not time and space to enter into at this time, but shall reserve them for a future article, trusting that what we have written will have shown the importance of water in all successful horticultural operations.

CHOICE OF A SITUATION.

IN choosing a site for a dwelling-house, one should never omit to regard, as of primary importance, its healthfulness and its comfortable exposure. Elevated sites are not always the most healthy, nor are valleys invariably less exposed to winds than high places. A dry tract in a sheltered valley is usually healthy, while one that is cold and damp, how great soever its elevation, is always unhealthy. It may be considered an axiom, that a dry situation is in every country preferable to a damp one, being less exposed to pestilential vapors in a warm climate, and to the predisposing causes of pulmonary complaints in a cold climate. A large proportion of the coughs and catarrhs to which our people are subject, might be avoided, if our dwelling-houses were placed upon dry and protected situations. When it is not in the power of the proprietor to choose such a site, he should obviate the evils arising from a damp soil, by a thorough system of drainage. If his pecuniary resources are too limited for the expense that would attend it, he would be wise to finish the interior in a plainer style, and use the money thus saved to pay for his draining operations.

The dryness of any tract depends more on the character of the soil and the subsoil, than upon its elevation. A subsoil of clay, and a foundation of rock, are unfavorable in this respect. Slopes of either description are commonly wet and springy. Those swells of land which are termed by geologists *morains*, are mostly free from springs and from

superabundant moisture, consisting of pebbles, gravel and loam. All these circumstances affect our comfort and convenience, no less than our health. Mud is abundant in wet weather around a house which is placed on a clay foundation, unless it be drained and covered with gravel; and the most disagreeable dust in dry weather is produced by clay.

There are other considerations worthy of particular notice. No little circumstance puts the female members of a well ordered household so greatly out of humor, as the bringing into the house the mud from the streets and enclosures. When, therefore, the soil and the subsoil are both of clay, they ought to be covered with eight or ten inches of good gravel, and subjected to complete drainage. The children of a family are more comfortable in a place that has a sandy or gravelly foundation, natural or artificial, and they annoy the housekeepers less by bringing mud into the house upon their feet. This evil is not avoided by simply raising the house upon a terrace, if the grounds are left in their natural condition outside of the embankment. The best method of avoiding mud and dampness, is to elevate the house, if it be placed upon a flat, and build a gravel slope, extending several rods in all directions from the house. The more gradual the slide the better, as a steep descent is liable to be furrowed by the streams that come from showers.

In our climate, it is also highly important to obtain a location that is well protected from the cold winds, by hills or woods on the northern boundary, and lying open to the south. These conditions are not always attainable in a crowded village, but apart from the town, either the hill or the wood may generally be found. Though in such an exposure the occupants may suffer more from the heats of summer, it is to be considered that the latter is of short duration, compared with the long period when we need protection from chilling east winds and northern blasts. There are other points that deserve our attention. On a general level we may make our calculations with considerable accuracy with respect to the winds; but in hilly regions, the currents of the atmosphere are determined by the

relative position of the hills and valleys. A house may seem, in a certain situation, to be well protected by a hill or a wood on its northern boundary, while a hill of a particular conformation, on the opposite side, may expose the south side of the house to every north wind, by reverberation. These local currents ought to be studied with care. It is better to be exposed, on an open plain or a solitary swell of land, equally to the winds from all points, than to be exposed in a narrow valley or gorge, to a perpetual current of wind, which is strengthened by position.

A good protection may be obtained in a few years, in an open and level tract, by planting a grove of evergreen trees around the northerly bounds of the estate; and this bulwark is as important for the garden and orchard, as for the house. Some rapid-growing trees should be interspersed with the evergreens, and a high fence of rough materials should be erected, to protect the young plantation from the winds. If a grove or a belt of trees already stands rightly situated on one's estate, it would be the height of folly to neglect to take advantage of it, or to cut it down for the sake of tilling the ground, which could produce nothing so valuable as the trees already standing upon it. It is unwise for any purpose whatever, to demolish a wood on the north side of one's house or estate. A mere belt of trees, with a dense undergrowth, circling round one's estate on the north, from east to west, is of incalculable value; and it is surprising that so little regard is paid to its importance. People who are able to select the most desirable site for a dwelling-house, seem to forget that a wood is of any value, except as timber or ornament, and do not reflect on the importance of it, both for the protection of their estate and the shelter of their domestic animals.

Under the head of location, position may be very properly made a theme of discourse, for a house may stand on an excellent site, and yet be so inconveniently placed, as to lose many of its advantages. A house on the slope of a hill, is liable to be exposed to the water that flows from the summit. Hence it should not be set on a level or in a hol-

low, but on a gentle swell of land, causing the streams that run from the hill to circle round it. Many of these points, which would seem too obvious to need mention, are frequently overlooked or disregarded, while the proprietor squanders his money upon needless embellishments and ostentatious follies.

A dwelling-house ought to be conveniently accessible from the street; and it is better to forego some advantages of prospect, than to place it so far upon a declivity as to render it difficult to be reached, either on foot or in a carriage. Neither should a house in the country stand directly on the roadside: it should be placed far enough from it to escape the dust, without causing inconvenience to the occupants on account of distance. The most of our New England dwellings stand too near the street; but it would be folly to go to the other extreme, and submit to the expense and inconvenience of a long drive from the public road. Such an arrangement is proper only for summer residences, which are calculated for seclusion, and for those cottages and farm-houses which are necessarily placed at a considerable distance from the highway.

It may be further remarked, without encouraging that idle propensity that causes certain persons to prefer the opportunity of seeing the objects in the street, to any other circumstance connected with location, that it is confessedly, at certain times, an agreeable and rational amusement, to look out upon this varied procession of moving objects. In winter especially, after the female members of the family have passed several weeks in the seclusion of their home, an occasional sight of other human beings in the street affords a cheerful recreation. To an invalid, likewise, who is confined to the house, these scenes are important trifles that may seriously affect his spirits: and they furnish points which are not unworthy of our regard, in the choice of a site for a dwelling-house.

Mr. Loudon remarks, that a house ought to stand, with relation to the points of the compass, so that the diagonal line of its general plan should point north and south, and

thus obtain the sun on every window, on some part of every sunny day throughout the year. Its corners, and not its sides, should point directly east, west, north and south. After this, it may be added, that the outbuildings should be annexed to the house in such a manner, facing south, south-east or south-west, as to protect the enclosures from the winds, and reverberate the heat of the sun.

In the majority of cases, it may be supposed that the individual who proposes to build a house, cannot choose a location. He is obliged to select the spot which is most convenient for his business; and the pecuniary circumstances of but few persons will allow them to be governed by their preferences. Still, it cannot be denied, that at least half the proprietors in the community have placed their houses on a less desirable location than they might have selected, if they had understood those general principles which should guide their judgment. Land speculators, if they were familiar with these general principles, might render their labors more advantageous to the public, and more profitable to themselves, by avoiding unhealthy and disagreeable locations, and laying out their streets and house lots in the most eligible part of the township.

We have seen the principal part of certain villages built upon one of the least agreeable situations, on account of some errors of judgment committed by the original planners of the settlement. At the distance of half a mile, on a more genial exposure, the village might have been laid out, without the sacrifice of any commercial advantages, and the inhabitants would have been favored with a greater share of the advantages of climate and prospect.

In conclusion we may remark, that in a densely populated village we must generally be governed by circumstances which are beyond our control, in the choice of a site for a dwelling-house; but a careful study of the principles which are the theme of this essay, might be highly advantageous to any one who has the power of selecting either one of two different situations.

GRAPE VINE PROTECTOR.

EVERY expedient by which the foreign grape may be brought to perfection in our climate is worthy of attention. Its culture in the open air has long been abandoned as impracticable only in thickly settled cities, and there only the early kinds, and these with some considerable care. Nothing short of the greenhouse or cold grapery has enabled those who would possess good grapes, to have them in anything like the excellence which they attain in southern Europe.

The time is, we trust, at hand, when we can have fine grapes as easily as we now have fine peaches or pears. We see no reason to doubt this. Our native vine is yielding to the ameliorating influence of cultivation, and ere long will, no doubt, afford us new kinds quite equal to most of the foreign grapes. But notwithstanding this, the latter will always be a favorite fruit, especially the Muscats, whose splendid berries and delicious aroma no process of culture can probably ever bring out of our indigenous stock. So long, therefore, as the foreign grape receives attention, it may be well to examine any new modes for raising it to perfection, especially if attended with less expense than the ordinary plan—the only bar to its more extensive culture throughout the country.

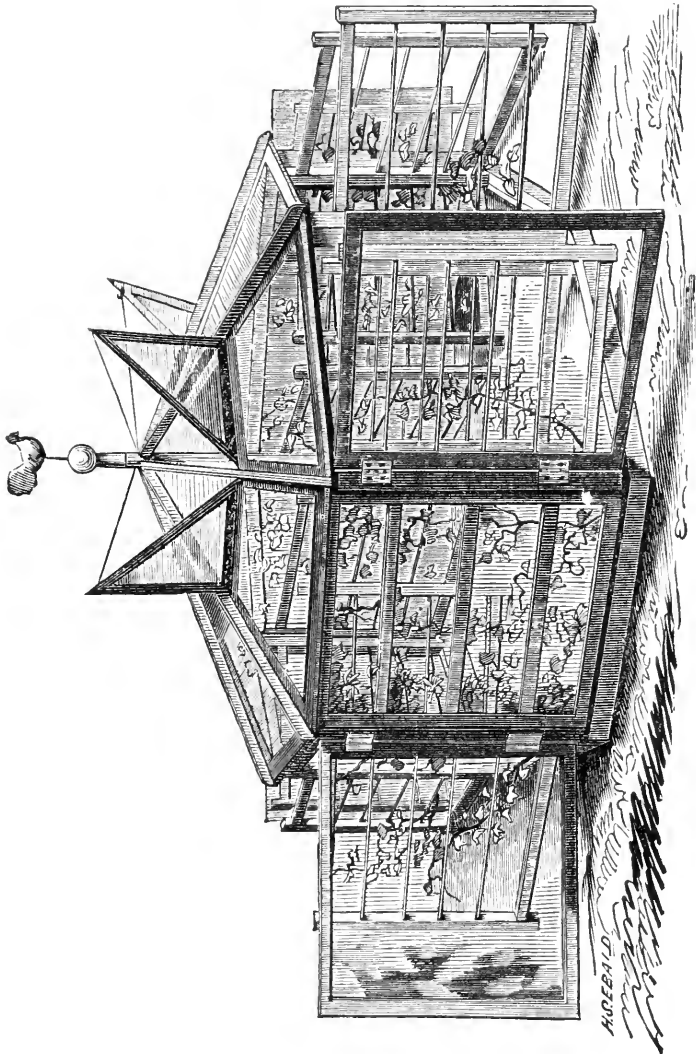
To accomplish the objects of the ordinary grapery, a structure has been invented and patented, which the inventor calls a "vine protector." The model has been exhibited at various fairs, and has attracted considerable attention. We recently examined it ourselves, and were so much pleased with the ingenuity of its construction, as well as the public spirit manifested by the inventor in his attempt to furnish a ready means of obtaining grapes in greater profusion, that we offered to bring his "protector" to the notice of our cultivators, that they might have an opportunity of testing its capability of performing what the inventor thinks can be done, trusting some lover of fine grapes will avail himself of Mr. Grennell's inventive genius, and give the protector a fair

trial. If it can be erected cheaply, it will remove one great obstacle in the way of grape culture,—the cost of properly built houses for their growth. We have labored to this purpose for a long time, and have given plans of cheap grape houses in our past volumes ; that of Mr. Johnston, of Wiscasset, Me., (Vol. XVII., p. 204,) being so simple, and put up at such slight expense, as to be within the reach of nearly every one who possesses a garden.

The accompanying description of the vine protector of Mr. Grennell is sufficiently plain to be understood by all who read it ; and, with the engraving, will convey a complete idea of its construction. What the cost may be will depend upon the size—Mr. Grennell does not give us any estimates—but probably the cost of its erection would not be large, while the space it covers will afford room for a great many vines. The movable trellis will enable the cultivator to expose a great surface of vines to the light and air.

There are, of course, some objections to this mode of vine culture. The principal one is that in regard to ventilation. In ordinary cases, the admission of such strong currents of air as would result from the opening of the side doors for swinging out the trellises, would be likely to bring on mildew, just as they are affected in the open air. Perhaps, by inuring the vines gradually, and keeping the side doors closed during the prevalence of cool, dry winds, this might be obviated ; we only mention it as one of the things which should be kept in view in trying this plan. Probably Mr. Grennell knows very little of the practical details in vine culture, and undoubtedly supposes that protection alone is all that is required to produce fine crops of fruit. An experienced gardener would no doubt be enabled to raise fine grapes with the "vine protector ;" but whether those who have not such experience can do so, remains to be tried. Mr. Grennell describes his protector as follows :—

The accompanying engraving (FIG. 15) represents a vine protector, patented April 15, 1856, by Abel H. Grennell, of Springfield, Vt., for raising choice varieties of grapes, such as cannot be matured in our climate without protection.



15. GRAPE VINE PROTECTOR.

This is in the form of an octagon, but may be square, or in any other style, to suit the taste. This one has eight sides, with a post six inches square at each corner, sills and plates; there is a space of eight feet between the posts; the plates are eight feet from the sills. In the centre of the building is a post, one foot square, set firmly in the ground, and twelve or fourteen feet high. At each corner is a rafter, one end of which is fastened to the plate directly over the post, the other to the centre post, three or four feet higher than the lower end. By this means the building is firmly braced, and strong. The sash for the roof are made to correspond with the space between the rafters, the lower end being eight feet wide, the other running to a point at the centre, and fastened to the rafter with screws.

The house may be ventilated by having a joint in the sash, about three feet from the top, to be raised, as in the figure; or there may be a space left open at the top, with a cap fitted on, and so arranged as to be raised for the purpose of ventilation. The sides are made of glazed sash doors, two in each space, hung to the posts, and closing in the centre of the space against a temporary standard set for that purpose, which is to be removed to swing the vines into the open air. The cut represents only one door for each space, but it is more desirable to have two. The northerly sides may be constructed of wood, instead of glass.

The frames upon which the vines are trained are in the form of a gate or swinging trellis, nearly eight feet square, light, but of sufficient strength to support the vines when swinging in or out. There are two of these frames in each space, hung on the same posts, and inside of the glass doors; and so arranged as to swing out through the open space, so far that when open the ends will be four or five feet apart. When closed, there are two rows of frames and vines round the interior of the building.

The vines are planted near the hinges, and trained along the bottom of the frame or trellis; from this arm, canes are trained up in sufficient number to fill the frame.

The advantage of this protector over the old form is, that

the vines are trained upon movable frames or trellises, hung on hinges, so as to swing out into the open air in warm, favorable weather, when they need no protection, where they receive the full benefit of the sun, light and air, which are necessary for the health and growth of the vine, and the maturity of the fruit. When the weather is unfavorable, the vines are swung round under the glass, where they are protected from cold and storm.

With this arrangement, nearly twice the amount of vines and fruit may be raised in a building of the same size, and at about the same cost. We consider its capacity for raising grapes double that of the old kind.

Farther information and explanation may be obtained in regard to the cost, construction, &c., by applying to the inventor.

POMOLOGICAL GOSSIP.

SOUTHERN APPLES.—Much has been said recently of the beauty and excellence of the Southern apples, those which have originated in Georgia, the Carolinas, Tennessee, &c. Our northern apples, with few exceptions, even what we consider our best winter keeping sorts, prove to be little better in that climate than fall apples, and cannot be depended upon for a supply through the winter. This deficiency of winter fruit for that region has induced the pomologists and fruit cultivators of the south to look to their own climate for their best fruits, and to collect together all the chance seedlings which have been abundantly produced by the early settlers of that fertile country. Long ago a few kinds were known of much excellence, and we have in our early volumes given some account of them. The long keeping qualities of these compared with the northern fruits created a greater interest in their cultivation, and a desire to discover others. This has resulted in the acquisition of a large number of varieties, some of which surpass in size, beauty, and

long keeping as well as excellence, if we may credit our southern friends, any that have been found in our own boasted region of superior apples.

A most welcome present of half a dozen drawings of some of the choicest of these seedlings, executed by himself, was recently received from Mr. J. Van Buren, of Clarksville, Georgia, accompanied with descriptions of the fruits. These were furnished at our request in order that we might make known their excellence. But the drawings represent apples of such immense size, that we should have to enlarge our page to a folio sheet to give some of them an insertion, particularly the Junaluskee and Equinately, which measure nearly five inches in diameter. Besides, engravings would give but a faint picture of the varied dottings, spots and delicate tints of the former, or the brilliant color of the latter. We prefer rather to give Mr. Van Buren's description without them, leaving the imagination of the pomologist to idealize their beauty from his accurate account of them. If, after a trial of the fruits themselves, they sustain their reputation, we shall hope to give a truthful copy of Mr. Van Buren's paintings in our *Fruits of America*, which we mean shall illustrate the best fruits in the United States.

Without farther remark, therefore, we present Mr. Van Buren's descriptions of four of the best southern apples:—

Dear Sir,—In compliance with your request I send you a few drawings and descriptions of some of our choicest southern varieties of apples. I have a collection of about one hundred varieties of southern seedling apples, some of which are very fine, also many others not yet proved, both of pears and apples. The drawings I send are from about the largest sized specimens, but are not of unusual size; they are at your disposal for publication or otherwise, as you may think best. *Respectfully yours, &c., J. VAN BUREN.*

1. EQUINETELY.—*Sol Carter (synonym.)*—This noble and beautiful apple is said to be an Indian seedling from Vancey Co., North Carolina, and has been known for some twenty-five or thirty years. It is of large size, frequently

very large, nearly globular in form, narrowing a little toward the eye, of a bright carmine color, marbled on a pale yellow ground, never striped ; skin very smooth and thin, which, for as good a keeper as this is, is very unusual ; stem about three quarters of an inch long and fleshy, cavity narrow and yellow within ; calyx in a moderate sized smooth basin ; flesh yellowish, tender, very juicy, rich and melting, and of a mild subacid flavor, never becomes mealy by keeping. Ripens in November and keeps until June. Quality, best.

2. JULIEN.—*Juling (syn.)*—The Julien is a great favorite at the South. It was brought from Western Virginia into S. Carolina some thirty years since, which is all that is known of its history.

In size it is medium to large, nearly globular in form ; color, a beautiful waxen yellow ground, striped and marbled with red ; stem three quarters to one inch long and slender, set in a moderate sized cavity ; calyx large and open, in a round smooth basin of ordinary size ; flesh white, tender, very juicy, rich, and of a fine sprightly acid flavor. Ripens 1st of August and good until 1st September. Quality, best.

3. HOOVER.—This singularly marked apple hails from Edisto, S. Carolina, and was raised by Mr. Hoover of that place. It is rather flat in shape, narrowing toward the eye ; size large ; color a fine red, sometimes dark, singularly spotted with round white spots about one-eighth of an inch in diameter ; these spots are simply an absence of the red color, and not caused by russet ; flesh white, hard, firm and juicy ; flavor a fine brisk acid ; stem three quarters of an inch long and slender ; cavity wide and green within ; calyx stiff, open and green ; basin rather small and a little ribbed. Ripens in November and keeps until March. Quality, *very good*.

4. JUNALUSKEE.—A magnificent apple from the orchard of Stephen Whitaker, Esq., of Cherokee Co., N. Carolina. It is of an irregular globular form with numerous warts of russet color upon it. It is of a dull yellow color, much specked with dark russet, marbled and spotted with pale red on the sunny side ; flesh yellow, juicy, tender, rich and of a pleasant

mild acid flavor. Size from large to very large, sometimes weighing from one to one and a half pounds; stem half an inch long and fleshy; cavity quite small and dark green within; calyx of common size in a small smooth basin. Ripens in November and keeps until March. Quality, best.

NEW PEARS.—In our volume for 1854, (XX., p. 232) we gave brief descriptions of more than thirty new pears, mostly of Belgian origin. Since then some of the kinds have produced fruit and have proved of superior quality, while others yet remain to be tested. As our object is to keep pomologists informed of everything new, we now briefly notice several additional sorts introduced into the catalogues, or described in horticultural journals since that time. Some of them have a high reputation, and come from some of the most successful pear cultivators, among whom are Gregoire, Gambier, Garnier, Durieux, and others, while a few are from the collection of Vans Mons, now in the possession of Bivort and Berckmans, the latter gentleman having thousands of them on his grounds in New Jersey. No doubt some superior fruits will be found among all these new varieties.

AGLAE GREGOIRE, (Gregoire.) Fruit medium size, of the first quality. Winter.

AUGUSTE ROYER, (Durieux.) Fruit medium size; flesh yellowish white, fine and melting; juice abundant, sugary, agreeably perfumed. Tree vigorous and fertile. November.

AVOCAT NELIS, (Gregoire.) The fruit has not yet been presented to connoisseurs for the examination of new pears. (Texte Van Mons.)

BARBE NELIS (Gregoire.) Fruit medium size, first quality. August and September.

BEURRE' DE JONGHE, (Gambier.) Fruit melting, buttery, similar to the Easter Beurré; wood large and strong; tree very productive and well adapted as a standard. December.

BEURRE' DE NIVELLES, (Boucqueau.) Fruit medium size. November to January.

BEURRE' D'HIVER NOUVEAU, (Gambier.) Fruit having all the qualities of the Easter Beurré. Tree very productive. November and December.

BEURRE' MAUXION, (MAUXION.) Tree vigorous; branches strong; color brilliant red. Fruit of an ovoide form, nearly four inches long, and eight inches in circumference; skin clear yellowish green, with reddish dots in the shade, clear yellow in the sun, marbled and spotted with red; flesh white, melting; juice very abundant, with a very savory perfume; a beautiful and excellent fruit. September.

BEZI GARNIER, (Garnier.) Tree vigorous and very productive; forms a pyramid on either the pear or quince. The fruit takes the place of the Winter Bonchrétien, so desirable and so productive, with which it has some analogy; very beautiful pyriform, five inches long; flesh white, breaking; juice very abundant and sugary. Keeps till April.

BEZI QUESSOI D'ETE', (found near Guérandé.) Tree vigorous and suitable for a pyramid. Fruit of the form of the Quessoi d'Hiver, but larger. Skin green, nearly covered with russet; flesh half fine, very melting; juice abundant, sugary, and agreeably perfumed; first quality. September.

COLMAR DELAHAUT, (Gregoire.) Fruit medium or large, irregular pyriform. Skin rough, dull yellow, spotted and striped with dark gray and strongly tinged with grayish brown; flesh white, half fine, melting, buttery, sugary and agreeably perfumed, of the character of the old Colmar. First quality. Tree very vigorous, suitable for pyramids on the quince or pear. December and January.

COMMISSAIRE DELMOTTE, (Gregoire.) Fruit large and round, form of the Bergamotte. Skin yellowish citron, spotted and striped with grayish brown; flesh white, half fine; juice sufficient, sugary, and of an agreeable perfume. Tree very vigorous, first quality. December and January.

CURE' DELMOTTE. Fruit has been studied by the society Van Mons.

DELICES DE LA CACAUDIÈRE, (Des Nouhes.) Fruit four inches in height and three in diameter; borne on a very strong peduncle, which is much swollen on one side; skin clear yellowish green at maturity, tinged with vermilion on the sunny side, and thickly covered with russet dots; flesh

white, little coarse, half melting; juice abundant and sugary. The principal trait of this beautiful fruit is, that it ripens early in August, and is well adapted for orchards.

DOCTOR LENTIER, (Gregoire.) Fruit medium size, pyriform; skin green, becoming slightly yellowish at maturity, spotted with brown and dotted with black; flesh yellowish white, fine, melting, buttery; juice abundant, sugary, with a delicious perfume; always first quality. Tree of medium vigor, very productive and suitable for pyramids. October.

DUCHESS DE BRABANT, (Capeinick.) Tree vigorous and very productive, for pyramids in exposed situations. Fruit medium size; flesh white; juice very abundant, perfumed, slightly subacid. September. A good orchard fruit, not very melting, and bears transportation well. Obtained the medal at Brussels and Tournay in 1853.

DUCHESS DE BRABANT, (Durieux.) Fruit large; flesh yellowish white, fine, melting; juice very abundant, sugary, vinous, with a most agreeable perfume. Tree very vigorous and productive, forming a beautiful pyramid. October.

DUCHESS DE BRABANT, (. . . .) Fruit of the first order, *gained* at Eughein. When the Duchess of Brabant entered the chateau of the Duc d'Areberg, this new pear was found so perfect, that the duchess willingly permitted that the fruit might be called after her name. September and October.

EDWARD MORREN, (Gathoy.) Fruit pyriform, of a golden yellow, broadly tinged with red on the sunny side. Tree vigorous and productive. October. This pear, introduced in 1854, is considered one of the most delicious and best varieties. The skin is so fair that any object with which it comes in contact is impregnated with its aroma. It is best to preserve it upon a marble tablet.

ELEONIE BOUVIER, (Bouvier.) Fruit medium size, exquisite. September.

EUGENE VAN BERKELAIRE, (Van Mons.) Very large, second quality.

FORDANTE DE CUERNE. Tree vigorous and productive, suitable for pyramids or espaliers. Fruit large and very fine, pyriform and pyramidal; skin yellowish color at maturity,

striped with brownish red ; flesh fine, melting, buttery ; juice abundant, sugary, slightly subacid, with an agreeable perfume, which has a slight almond flavor. First quality. September.

FONDANTE D'INGENDAEL, (Gambier.) Fruit medium size, exquisite, pyriform, shaded with carmine red in the sun ; flesh very melting ; juice very vinous, sugary, perfumed.

GENERAL BOSQUET, (Flon Grolleau.) Fruit large, nearly four inches long and three in diameter ; pyriform, smooth, of a beautiful green, more or less spotted with red ; flesh tender, very good. September.

GENERAL DE LOURMEL, (Comice Hort. de Maine et Loire.) Fruit round, swollen in the middle, three inches in diameter ; skin yellowish green, irregularly spotted and marked with red ; flesh fine, buttery, melting and sugary. First quality. November.

LEOCHINE DE PRINTEMPS, (De Hartwiss.) A very beautiful and good fruit, resembling a Doyenné. Very late.

LEON GRE'GOIRE, (Grégoire.) Fruit large or very large, roundish turbinate, very irregular ; skin rough, clear green, strongly marked with grayish russet, and spotted with large reddish gray dots ; flesh yellowish white, half fine, melting, buttery ; juice very abundant, sugary, vinous, with an agreeable perfume ; nearly always first quality. Tree very vigorous and productive, suitable for pyramids. December to February.

Some twenty or more other varieties we shall notice in our next.

THE ROSE.—No. 5.

BY PROF. C. G. PAGE, WASHINGTON, D. C.

It may not be unimportant to mention, that the successful seedling-bed, referred to in our last article, was covered by double-glazed sashes, which proved to be highly favorable to the young seedlings. Double glass will not suit all plants, but wherever it can be adopted, it possesses the advantage of continued light during the whole of every day, whatever

may be the weather, as it requires no protection from shutters, night or day. In this place, *glass is cheaper than wood*. A double-glazed sash costs here about one-third less than a single-glazed sash, with a well-made shutter, having two coats of paint. As the seedlings develop in the bed, *partiality for our own* should be restrained, and none but conspicuous and choice flowers should be preserved. Striking peculiarities may be kept for experimental purposes or private gratification, but in these times of critical selections and really exalted improvements in floral *generations*, it is not advisable to add names to the swollen catalogues of roses, unless for varieties of sterling merit. Let it be borne in mind, that probably as many as twelve thousand roses have been cultivated under name, and that from these a connoisseur would not now select more than five hundred for cultivation. Parsons & Co. of Flushing, Long Island, have the largest descriptive catalogue and trade list of roses in the United States, numbering over seven hundred varieties; Hovey & Co.'s catalogue for 1854 numbers over five hundred, and Buist's catalogue about four hundred. The catalogue accompanying Parsons' Treatise on the Rose describes nineteen hundred and sixty-six varieties. The Rose Fancier's Manual, by Mrs. Gore, published twenty years ago, describes over eight hundred varieties, and among them we recognize hardly a dozen now in cultivation. The catalogues of London and Paris nurserymen, in the year 1822, contained upwards of three hundred and fifty names, and Desportes' catalogue, published in France in 1829, described over two thousand varieties. Lastly, Paul's great work, entitled "The Rose Garden," published in England in 1848, describes about two thousand varieties. Probably the trade lists of our prominent nurserymen contain all the desirable *excerpta* from the great mass of rose editions; and, when we consider that twenty years ago the Hybrid Perpetuals first came to light, and that we cannot go back more than thirty years for any notable developments in Teas, Bengals, Noisettes or Bourbons, we must see the necessity of critical selections from new varieties.

If we have accomplished thus much in the inception of *modern* rose culture, what will be the progress of the next twenty years? I confess that my imagination will not tolerate any limits, not even an objection to the possibility of a *blue rose*, nor of any kind of fancied dress for Queen Rhodanthe. It cannot be thought chimerical to look forward for roses combining the qualities of constant-blooming, strong-growing, fine forms, colors and odors, entire hardiness and even thornless branches, where art shall reverse the lover's lament by stealing the thorn and leaving the rose. This latter quality has been fully attained in the hybrid perpetuals, Delphine Gay and Blanche Vibert, and nearly so in William Griffith, one of the most perfect roses grown. I have seen vigorous shoots of it, six feet high, without a thorn. As to hardiness, rapid advances are being made among the Bourbons, Teas and Noisettes. Paxton, a strong-growing, great-blooming and seed-bearing Bourbon, has not been injured in the least in this place during the two past severe winters. It will serve as a climber. Gloire de Dijon, nearly as fragrant as *Devoniensis*, has also escaped injury without any protection whatever, and is of most rapid growth. As to colors, we have already attained high excellence and developed such marked versatility in the rose, that we reasonably expect to arrive at almost every desirable variety of hue, combination and variegation, judging from the results of hybridization now progressing with other popular flowers of the day.

After this little episode upon the potentialities of our flower let us recur again to the subject of raising seedlings. One enjoyment we shall expect in new American productions will be in names euphonious to us at least. How General Washington would sound to a Russian we cannot say, but it seems as if the French growers have gone far out of the way in inflicting upon us such names as Bachmetoff, Kotschouby, Chipetouzikoff, etc., and such tiresome distinctions as *Souvenir de la Reine des Belges*. We have our own heroes, statesmen, poets and men and women of distinction, and General Taylor, General Scott, General Pierce, etc.

ought to *read, write* and *sound* full as well as General Chagnarnier or General Jacqueminot, to any nation. A very sensitive amateur in England, last year, was so terrified at the thought of being obliged to repeat such *tetanic* names as the above to all of his inquiring visitors, that he resorted to the following ingenious labor-saving expedient. He had large labels printed in a legible manner, which were fixed conspicuously about the bushes. One of them read as follows: "Prince Leon Kotschouby, hybrid perpetual, ask no questions." In addition to our national resources for names, we must not forget that many of our Indian names are quite melodious.

We have, thus far, a very small list of American productions, but nevertheless very choice and important. Recently some excellent novelties have been offered, and it is believed that every year henceforth will contribute something to our stock. It takes from four to five years to prepare, test and "*bring out*" a new rose, and, doubtless, many are now in progress. Last year we had a charming rose—Tea Cornelia—from Mr. Koch of Baltimore, a seedling from Devoniensis. It is nearly white, very full, strong grower, very fragrant, tolerably hardy, and has something of a Noisette habit. He has, also, sent out some others, which I have not yet seen in bloom. Mr. Pentland of Baltimore has also sent out two new roses—Beauty of Greenmount and Woodland Margaret. The former is a valuable acquisition to the Noisettes, forces remarkably well, and is prettier than the colored portraits which he distributes with the rose. Woodland Margaret I have not yet seen in bloom. The best American seedling of this season which I have seen, is "Thorburn's Combatant," raised by George C. Thorburn of Newark, N. J.—a finely scented Tea, large and full, color blush and pale flesh, and will average about eighty large petals.

[Perhaps our correspondent is not aware that several of the new Hybrid Perpetuals are American seedlings, raised by Mr. Boll, of New York, and sent to France for sale.—ED.]

THE OAK.

BY WILSON FLAGG

If the willow be considered the most poetical of all trees, there can be no doubt that the oak is the most useful. But with all its utility, it is far from being unattended with poetical interest, as the ancient superstitions associated with it yield its name a peculiar significance to the poet and the antiquarian. It is not surprising, when we recollect the numerous benefits conferred upon mankind by the oak, that this tree should always have been regarded with veneration; that the ancients should have held it sacred to Jupiter, and that divine honors should have been paid to the oak by our Celtic ancestors. The Druids who offered sacrifices beneath its shades, and the Romans who crowned their heroes with green oak leaves entitled the civic crown, were actuated by the same estimation of its preëminent utility to the human race. And, whether we consider the peculiar form of the oak tree, the wide and horizontal spread of its lower branches that symbolize the idea of protection, or the excellence of its fruit for the sustenance of our domestic animals, and the many purposes to which its bark, its timber and even its excrescences may be applied, we may easily understand why it is represented as the emblem of hospitality. The ancient Romans planted it to overshadow the temple of Jupiter: and in the adjoining grove of oaks—the sacred grove of Dodona—they sought those oracular responses, which were prophetic of the result of any important adventure.

One thing that is apparent to a student of nature, immediately on entering an oaken wood, is the absence of uniformity in its general aspect. The irregular, contorted growth of individual trees, twisting fantastically in all directions, and the want of precision in their attitudes, cause an endless variety in the appearance of the assemblage. We do not see, in a forest of oaks, whole acres of tall, slender trees, extending upward with a smooth, perpendicular shaft, as we observe particularly in a pine or poplar wood. The

shaft of the oak is seldom both straight and smooth, even in a dense forest. Every tree has more or less of a gnarled growth, and is seldom clear of branches upwards to any considerable height. If the side branch of an oak meets with obstruction, it twists itself round, until it obtains light and space, while that of any soft-wooded tree would perish, leaving the trunk from which it issued unbent and comparatively smooth. There is, also, less uniformity in the size of the trees in an assemblage of oaks, than in woods of other species.

Another remarkable feature of the oak, is its disposition to send out its branches horizontally from a central shaft, that rapidly diminishes in size above the junction of the lower branches. There are but few exceptions to this peculiarity in any of the common species of oak. No other tree in our forest is so irregular in its ramification, except the tupelo; and the beauty of its spray, which is very knotted and angular, proceeds from this variety. Yet the oak which, on account of its irregular and fantastic growth, seems peculiarly adapted to rude and rocky situations, is equally attractive on an open plain. This tree forms a singularly noble and majestic standard; and, though surpassed by the elm in grace and beauty, an oak of the same size would gain the most general admiration, on account of its sturdiness and manifest power of resisting the tempest. In a large tree we are more deeply affected by the exhibition of strength, than by the expression of beauty.

The oak is also distinguished by its leaves, which are neither even at their edges, nor serrate, but deeply scalloped and divided into several lobes. They are of a fine deep green, of a firm texture, and very glossy on their upper surface, like the leaves of evergreens. The foliage of the oak is beautiful at all seasons; coming out in the spring in neatly plaited folds, exhibiting a variety of hues, intermingled with a general cinereous tinge. An oak is, on this account, a very attractive object, when its leaves are only half developed, having a silvery lustre, intershaded with crimson, purple and lilac. In midsummer it is unsurpassed in the depth

of its verdure, which it retains to a late period in the autumn, when the different oaks, and different individuals of the same species, assume a great variety of shades, containing a predominance of red, crimson and orange. The oaks are the glory of our forests, for some time after the maple and the tupelo have shed their leaves: and the autumnal hues that render our woods so resplendent just before the fall of the leaf, were it not for the durable tints of the oak leaves, would be of very short continuance.

Oak woods possess characteristics nearly as strongly marked as those of a pine forest. They emit a fragrance which is highly agreeable and exhilarating, and very perceptible when we enter an extensive grove. The trees seldom grow so densely as pines, nor as the birch and the poplar, that spring up from numerous seeds, and send their shafts upwards with the greatest rapidity of growth. The oak is more tardy in its perpendicular growth, and has more inclination to spread. It has also a more abundant undergrowth than many other species, because its roots penetrate more deeply into the ground, and thus afford a chance for the growth of other plants on the surface and under its protection. A larger variety and number of wild flowers, both shrubby and herbaceous, are found, therefore, in an oak wood, than under other trees, because the roots of oak trees do not comparatively exhaust the virtue of the superficial soil.

The oak has been, from immemorial time, considered emblematical of fortitude; and the British describe the virtues of their soldiers by representing them as possessed of "hearts of oak." This tree is seldom overturned by a tempest, and yields only to the force of lightning, or to the insidious attacks of insects. It extends its principal root to a great depth in the soil, thereby obtaining a firm foundation; and the extent of its branches is small, compared with the size and strength of the bole. Hence it is not compelled to bend to the force of the winds. It stands firmly, as if in defiance of their attacks—neither bending, like the elm, nor, for its own safety, yielding up its branches like the poplar.

This tree is not confined to any continent, though it is not found in the tropics, or in far northern latitudes, being able to endure the extremes neither of cold or heat. The oak family is very extensive, embracing, according to Loudon, nearly one hundred and fifty species. There are more than thirty species belonging to North America, and Emerson has described eleven which are common in Massachusetts. Oaks of small size are very numerous in this State; but large trees, of full and ample dimensions, are rare. They have been destroyed, year after year, by that class of men who are *timberers* by trade,—men who, though very useful in supplying certain indispensable wants of the community, are the greatest living pests to our groves and forests. These men, who are constantly tempting our farmers to sell a noble tree by offering them a high price for it, remind me of pimps, who prize beauty only for its destruction.

There is an old English law that excludes butchers from sitting in the jury box: this law would be better applied to the timberer, who, of all men in the world, seems to have the least conscience. If his neighbor's land contains three or four majestic oaks, he leaves him no rest until he has consented to sacrifice them to his cupidity. Any remarkable singularity of growth in any tree, that renders it the more worthy of preservation, increases its importance for his uses; and there is danger that before the expiration of another twenty years, not a single standard oak will remain upon our soil, save here and there a solitary one that is owned and protected by a man of wealth. Wherever a set of timberers are known to be at their work, they should be as carefully watched by our tree associations, as a vigilant police would watch a gang of counterfeiters. The community is in the more danger from their operations, than from those of counterfeiters, because the law does not protect us from them. Were the elm as valuable as the oak for ship-timber, there would not have been one tree where at the present time there are fifty. They would long ago have fallen before the axe of the timberer, who is worse than Time with his scythe, who creates as fast as he destroys. Large, well

grown standards of every species, but especially of the oak, ought to be protected by the public, and the ship-builder's wants should be supplied from the forest. If the owner of a fine tree is tempted to sell it or to cut it down for its value in the arts, some individual should buy it, or call upon an agricultural society to buy it, and rescue it from destruction, to be held sacred forever afterwards.

According to Emerson, "The oaks found in New England naturally arrange themselves in four groups. To the first belongs the white oak, which is most nearly allied to the two varieties, as the continental botanists consider them, of the European white oak. Next to the white oak, are to be arranged, at nearly equal distances about it, the over-cup, the post and the swamp white oak, forming a second group, with qualities very nearly equal to those of the first. Of these, the last is most remote, and connects them with the chestnut oak group, to which the elder Michaux considered it as belonging. This third group includes the chestnut oak, the rock chestnut and the chincapin, with the chestnut white oak of a region farther south. All these slide, by almost imperceptible gradations, into each other. The fourth group, entirely distinct, includes the black, the scarlet, the red and the bear oak, so nearly allied as to be generally considered the *red oaks*; and in many places this single name includes them all."

THE CULTURE OF ROSES IN POTS.

FROM THE GARDENERS' CHRONICLE.

FEW plants are more poorly managed than the rose when grown in pots, particularly the hybrid chinas, mosses, and other annual flowering sorts. Even the tender roses are rarely seen in fine condition, being generally a straggling bush, with a few straggling flowers, and, separate from the individual blossoms, of no beauty whatever. Whether this is because it is more difficult to manage than other plants, or

because no pains have been taken to grow them, is not our purpose now to inquire. It is only the fact that we state, that a handsome shaped, vigorous rose bush, full of good sized, perfect blooms, as we see them in the open garden, is one of the rarest things to be found in any collection of plants. Even in England, till within a few years, fine specimens were almost as rare as they are with us; but, through the exertions of the horticultural societies around London, and the liberal premiums they have offered for the encouragement of rose cultivators, the difficulties in the way of the culture of the plants have been overcome, and magnificent specimens are now produced, which are the most attractive objects exhibited.

The rose is too beautiful a flower to be thus neglected: all the care which it requires is amply repaid by the profusion, the elegance and the fragrance of its blooms. Even the camellia, which we consider so magnificent a blossom, pales beside the rose, and becomes a prim and artificial looking flower. The rose never tires; its beauty and fragrance are renewed with every freshly opened bud, and, whether in winter, in spring, in summer or in autumn, is ever an object of the greatest interest.

We hope, therefore, to see it rescued from the neglect into which it has fallen with cultivators. Our excellent correspondent, Prof. Page, is aiding in this work by his interesting communications, though he has, thus far, said little of its cultivation in pots. To supply this information, whether he should do so or not, we copy the following valuable article, by an intelligent cultivator, and commend it to the particular attention of all who would possess this queen of flowers in all its grace, loveliness and beauty, at that period of the year when it can only be enjoyed by its cultivation in pots.

It is not very many years since it was considered impossible to produce good specimens of roses in pots; now, however, thanks to the prevailing spirit of improvement, things are altered, and it is not unusual, in well managed collec-

tions, to see specimen roses in bloom even at Christmas, which would not disgrace our public exhibition tables in May and June. The varieties best adapted for winter flowering, as well as for purposes of exhibition, are Bourbons, Teas and Hybrid Perpetuals, which are better on their own roots than budded, and they root very readily, especially when good strong cuttings of them can be obtained early in spring from plants growing under glass. When struck and well rooted, they should be potted singly in 4-inch pots, in good fresh loam and decayed leaf-mould, in about equal proportions, adding at the same time sufficient sharp clean sand to render the mixture light and porous. After potting, they should be placed in a close, moist atmosphere, until they have become thoroughly established in their pots. They may then be removed to a light, airy, and rather cool situation, with a view to induce close, stocky growth; there will be nothing gained, after they are well established in 4-inch pots, by keeping them in a higher average temperature than 55° . In order to secure a bushy habit of growth, it will be necessary to pinch off the top of the first shoot; but this should not be done until the plants are removed to a cool situation, nor while the eyes at the base are sunk and imperfectly developed, otherwise the probability is that the top bud only will start. As soon as the plants are well rooted in their first pots, shift them into others one or two sizes larger, as circumstances may point out, and when moderately well rooted after the second shift, remove them to a cool frame, and gradually inure them to full exposure, merely protecting them from heavy rains and cold drying winds. During the summer months, a liberal supply of water must be given, using weak manure-water twice a week, and the plants should be syringed morning and evening during bright weather, and shifted into larger pots as may be necessary. Stop any gross, over-luxuriant shoots, and have a constant eye to the formation of good-looking specimens. Also keep down green-fly by means of frequent fumigations with tobacco smoke.

During summer, plants that are established after the first

shift had better be moved to a sheltered corner out of doors, placing the pots on a bed of coal ashes to keep out worms. With good management, many of them will be nice, compact specimens, in 7 or 8-inch pots, at the end of the season's growth; and the Teas and Bourbons, if removed to a close pit or frame early in autumn, will continue growing throughout the winter and spring months. Where handsome specimens are desired, they must not be allowed to bloom, which would retard their progress the following season. Hybrid Perpetuals may be wintered in coal ashes, in which they should be plunged about an inch deeper than the pot. Those placed under glass should be kept cool, merely guarding them from severe frost, but fully exposing them when the weather is mild. The Hybrid Perpetuals may be cut back any time after Christmas; but the tender varieties should not be pruned until all danger from frost is over, and these will only require to have the weak shoots removed, so as to properly thin the heads, and the strong shoots should be slightly shortened. When growth commences in spring, give a moderate shift to all plants that require more pot room, replunging those that have been wintered out of doors. The tender sorts under glass should be kept cool, merely protecting them from frosts and heavy rains. During the summer, the same care as to watering, stopping and keeping clear of green-fly will be necessary as was recommended for last season, and all flower-buds should be removed as soon as they appear. It will be requisite, also, to afford some attention to training the specimens, which may be improved in appearance by drawing the lower shoots downward towards the edge of the pot, where they may be fastened to a piece of bast or wire made to pass beneath the rim; the upper shoots may then be drawn out to sticks. Thinning should, in a great measure, be superseded by disbudding.

When it is desired to have a portion of the plants in bloom at Christmas, they should be shifted into their flowering-pots in August; the size of the pots must be regulated by that of the plants, all of which should now require at least 12-inch, and the stronger growing varieties perhaps 15-inch pots. For

early blooming, the Teas and Bourbons are the best, as, if closely stopped and thinned in August, they will be ready to flower abundantly in December, and this without any forcing; for they will be well advanced by the end of October, when they should be placed in a cold frame or cool greenhouse, and given plenty of light and air on mild days. A temperature of from 45 to 50° will be sufficiently high. The whole stock of plants should be shifted into their blooming-pots about the end of September, and all that may be intended for flowering earlier than May, had better be removed to a cold frame, where they can be protected from rains, and the tender sorts from frost. As to pruning, the Hybrid Perpetuals may be cut back very much as is done with plants in the open ground. The Bourbons and Teas should be treated as they were last season.

To secure a succession of blooming plants, nothing more is necessary than a light pit or house, where the temperature can be kept at from 45 to 55°, and to introduce portions of the plants at about monthly intervals, beginning with the most vigorous. If convenient, plunge the pots in a bed of spent tan or sawdust. Sprinkle the plants over head on the mornings of fine days, when air can be given to dry the foliage, and maintain a moist, healthy atmosphere,—but this must not be over-done, or mildew will set in. The best remedy for this is sulphur, applied the moment the evil appears.

When the buds begin to swell, give weak manure-water once or twice a week. After the sun becomes powerful in spring, it will be found beneficial to afford the plants in bloom a slight shade during the forenoons of bright days. At all seasons, it will be necessary to keep a sharp look-out for the maggot, which will probably be busy even before the shoots are well out of the bud. The plants must not be rudely exposed after the beauty of the flowers is over,—and those blooming late should also be gradually inured to exposure to the sun and open air. By a liberal use of manure-water, attention to keeping the drainage in order, and giving a top-dressing of well decayed sheeps' dung

annually after flowering, the specimens will last good for several seasons; should they get weakly, they may be cut back, disrooted, and allowed a season to recruit.

The best soil for roses in pots is turfy-loam, rather strong than otherwise, mixed with about one-third two year old cow dung, and a small quantity of sharp clean sand. For delicate kinds, half loam, one-fourth dung, and one-fourth leaf-soil, with a liberal mixture of sand, should be used.

The following are the names of a few first-class kinds, either for "early work" or for the purposes of exhibition:—

TEA-SCENTED.

Comte de Paris
Devoniensis
Elise Sauvage
Gloire de Dijon
Madame de St. Joseph
Souvenir d' un Ami
Vicomtesse Decazes
Niphetos

NOISETTE.

Aimée Vibert
Ophirie

HYBRID PERPETUAL.

Auberon
Augustine Mouchelet
Baronne Prevost
Caroline de Sansal
Docteur Marx
Duchess of Sutherland
General Jacqueminot
General Castellane
Jacques Lafitte
Jules Margottin
La Reine
Madam Laffay

Louis Bonaparte
Souvenir de Leveson Gower
William Jesse
William Griffiths

CHINA.

Madame Bréon
Miellez
Mrs. Bosanquet

BOURBON.

Angelina Bucelle
Comice de Seine et Marne
Dupetit Thouars
Leveson Gower
Madame Angelina
Paul Joseph
Souvenir de Malmaison

HYBRID BOURBON.

Blairi, No. 2
Charles Duval
Chénédolé
Comtesse Lacepède
Coupe d'Hébe
Paul Perras
Paul Ricaut

FLORICULTURAL AND BOTANICAL NOTICES.

VERBENA IMPERATRICE ELIZABETH.—We noticed this exquisite little verbena in our last volume. Since then, we have seen it in bloom, and must again speak in praise of its

claims to the attention of every lover of this showy family. In addition to the striking character of its flowers, which are distinctly marked, it has a fine habit, with the most delicate foliage, and must make a rich bed when in full bloom. We hope to see other varieties with the same foliage and the varied colored blossoms which belong to the *chamædrifolia* class. *V. Imperatrice Elizabeth* should be added to every collection of verbenas.

BEDDING GERANIUMS.—The varieties now cultivated of this class are very numerous, and include a great variety of colors, both of foliage and flowers,—the former being at present a character of much importance. The silver-edged kinds are but little cultivated by our amateurs, though they add much to the beauty of a group. In England, they are extensively planted, and, in the ribboned style of flower gardens, form a peculiar feature as edgings to masses of deep green foliage. With the demand for this class of plants, and the love for novelty, cultivators have been active in raising seedlings, and have succeeded in adding some new sorts, with very remarkable foliage, as well as brilliant flowers. Nearly every shade of color, from white to the deepest scarlet, has been obtained, with very large trusses of flowers, and dwarf, compact habit of growth. Some of the best of the new ones are the following:—

Charles Domage, Rubens, Consuello, Nemesis, Lady Turner, Chepstead Beauty, Alma, Countess of Bective, Duchess of Kent, Lady Smythe, Gen. Pelissier, Silver Queen, Mrs. Lawton, Annie, &c., &c.

COUNTESS OF ELLSMERE PETUNIA.—This new petunia is a very pretty addition to our gardens, though it is far from being a “scarlet, with white throat.” The color is a rich deep carmine. The flowers are not very large, but the contrast in the colors renders it a striking variety.

352. *ASTILBE RUBRA* Hook. THE RED-FLOWERED ASTILBE. (Saxifragææ.) Eastern Bengal.

A half-hardy (or hardy) plant; growing four feet high; with pink flowers; appearing in summer; increased by division of the roots: grown in light, rich soil. Bot. Mag., 1857, pl. 4959.

A showy herbaceous plant, “with the habit and appear-

ance of a spiræa," from the Khasia mountains, where it was seen by Drs. Hooker and Thompson, who found it flowering in the month of June, at an elevation of 5000 to 6000 feet above the sea. Seeds were sent to the royal gardens of Kew, where it proves quite hardy, flowering in the late summer and autumnal months. It has a rhizome or root, horizontal in growth, about as thick as the thumb; the leaves are biternate. The flower stems are four to six feet high, covered with long flexuous hairs, and terminated with a panicle of rose colored flowers, very ornamental and showy. If it should prove hardy, it will be a most valuable addition to our perennial plants. (*Bot. Mag.*, Jan.)

353. LOBELIA SPLE'NDENS VAR. IGNEA *Wild.* SHINING LOBELIA, BLOOD RED VARIETY. (*Lobeliaceæ.*)

A half-hardy plant; growing four feet high; with dark scarlet flowers; appearing in summer; increased by division of the roots; grown in light, rich soil. *Bot. Mag.*, 1857, pl. 4930.

The original species of this variety has long been known in Europe, but was lost for a time, and recently has appeared again. It is a distinct species, but subject to variation in the color and marking of the foliage. This is a variety of it, with very deep atro sanguineous foliage, and rich, deep crimson scarlet flowers. Formerly it was treated a greenhouse plant, but it has proved quite hardy, and is considered a truly splendid ornament to every flower bed.

The lobelias are a favorite class of plants with the English cultivators, vieing in splendor with the salvias. Some, like our well known *L. cardinalis*, are hardy; but they are so easily kept in a cool frame, or even the greenhouse, that their great beauty entitles them to more attention than they have heretofore received by our amateurs. New and improved varieties are yearly produced, and quite a list of showy kinds now appears in the catalogues of English nurserymen. They are easily grown in any good garden soil, and should find a place in every flower border. (*Bot. Mag.*, Jan.)

354. *ADHATO'DA CYDONIÉFO'LIA* *Nees*. QUINCE-LEAVED ADHATODA. (*Acanthaceæ.*) Brazil.

A stove shrub; growing two feet high; with white and purple flowers; appearing in the autumn; increased by cuttings; grown in leaf-soil, peat and loam. *Bot. Mag.*, 1857, pl. 4962.

A very beautiful stove shrub, with downy leaves, and large axillary flowers, which are rich deep purple and white, forming a striking contrast in color,—the lower lip being pendent and purple, and the upper lip erect and white, tipped with purple. Though classed among the stove plants in England, it would, in our climate, we have no doubt, succeed admirably in the open ground in summer, or at least in an ordinary greenhouse, where it would display its showy flowers in the autumn months. (*Bot. Mag.*, Jan.)

355. *SCHEE'RIA LANA'TA* *Haustein*. WOOLY SCHEERIA. (*Gesneraceæ.*) Mexico.

A stove plant; growing one foot high; with violet flowers; appearing in summer; increased by cuttings; grown in sandy peat and leaf mould. *Bot. Mag.*, 1857, pl. 4963.

A showy plant, allied to the *Achimenes* and *Gloxinias*, and called in some catalogues *Mandiròla lanàta*. In habit it resembles the *gloxinia*, while the flowers are more like the *achimenes*, though with a longer tube and larger throat. The leaves are very wooly.

Introduced from Mexico to M. Verschaffelt's nursery at Ghent, from whence it has been distributed through other establishments.

This pretty plant will soon be in bloom in our collection. Its wooly leaves render it a conspicuous and distinct plant. (*Bot. Mag.*, Feb.)

356. *LOBE'LIA TEXE'NSIS* *Rafin*. TEXAS LOBELIA. (*Lobeliaceæ.*) Texas.

A half hardy plant; growing three feet high; with crimson scarlet flowers; appearing in summer; increased by division of the root; grown in light peat soil. *Bot. Mag.*, 1857, pl. 4964.

A Texas species, of vigorous growth and attractive appearance, with its dense spikes of scarlet flowers, with numerous bracts, which are longer than the flowers. Introduced from Texas, but by whom is not known. (*Bot. Mag.*, Feb.)

357. *STOKESIA CYANEA* *L'Herit.* CYANEOUS STOKESIA.
(Compositæ.) South Carolina.

A hardy perennial plant; growing three feet high; with blue flowers; appearing in summer; increased by division of the roots; grown in light rich soil. *Bot. Mag.*, 1857, pl. 4966.

One of the rarest plants of the United States, according to Messrs. Torrey and Gray; and, though a native of South Carolina, Georgia and Louisiana, rarely if ever seen in our gardens. In general appearance it looks like the *Centaurea americana*, having flowers which "vie in size and beauty with the celebrated Chinese *asters*." Notwithstanding its rarity, it was sent to the Kew gardens nearly a century ago, where it was recently sent again, and flowered the last season. It is described as a hardy plant; but possibly, coming from so far south, it may need protection in winter.

The beauty of the *Centaurea* is familiar to most amateurs. The *Stokesia* is similar, but has the great merit of being perennial. A native plant so showy should find a prominent place in every collection. (*Bot. Mag.*, Feb.)

358. *RHODODE'NDRON CAMPYLOCA'RPUM* *Hook.* CURVED-FRUITED RHODODENDRON. (Ericææ.) Sikkim Himalaya.

A half-hardy shrub; growing six feet high; with pale yellow flowers; appearing in spring; increased by layers; grown in heath soil. *Bot. Mag.*, 1857, pl. 4968.

Another of the beautiful Sikkim *Rhododendrons* which flowered last spring in the collection of Messrs. Standish and Noble. It is a native of rocky valleys, at an elevation of 11 to 14,000 feet above the level of the sea. At such an altitude it was supposed it would prove quite hardy in England. This is the case; but it flowers so early, that the blooms are injured by the spring frosts, and it requires the protection of a frame or cool greenhouse. Perhaps in our cooler climate, where vegetation would be retarded till all danger of late frosts is over, it would prove quite hardy. We hope to see the trial made.

R. campylocarpum has always been considered, by Dr. Hooker, as the most charming of the Sikkim species. The foliage is of a deep green, and the flowers, which are of surprising delicacy and grace, claim precedence over its more gaudy congeners. The plant exhales a honeyed flavor from

its lovely bells, and a resinous odor from the stipitate glands of the petioles, pedicels, calyx and capsules. The color of the blooms is a pale lemon or sulphur hue, and the corols are large and somewhat bell-shaped, and without spots. It is a fine species. (*Bot. Mag.*, Feb.)

359. HO'YA CORONA'RIA *Blume*. CORONATED HOYA. (Asclepiadeæ.) Java.

A stove climber; growing six feet high; with yellow and crimson flowers; appearing in summer; increased by cuttings: grown in light rich soil. *Bot. Mag.*, 1857, pl. 4969.

A new Hoya from Java, almost equalling in size the imperialis, and surpassing it in beauty,—the flowers being a sulphur-yellow, instead of the dingy hue of the former species. It is a native of shady woods in western Java, and was sent to the Exeter nursery by Mr. Lobb, where it flowered last summer. In addition to the yellowish tint of its flowers, their beauty is greatly heightened by fine red spots around and at the base of the stamina. Like the other eastern species, it requires a high temperature to grow and bloom it in perfection, but it is well worthy every care that can be given it to bring it to perfection. (*Bot. Mag.*, March.)

General Notices.

WHY SEEDS DO NOT GROW.—Mrs. Hyacintha Carswell says she cannot make her seeds of annual plants grow; she has bought them of Carter, and of Wrench, and of Nash, and of Minier, and is equally unsuccessful in every case. Even mignonette refuses to come at her bidding. And yet she spares no pains,—actually employs the gardener of a neighboring viscount to sow the seeds for her, and herself takes care that no vile slug or other molluscous forager sucks them up. Being a great admirer of Mrs. Loudon's Book of Annuals, she is eager to watch and nurse all the pretty things that adorn the pages of that charming picture book. And then comes a postscript correcting the first statement, by announcing that Clarkias, and Collinsias, and Godetias do come up—a circumstance she had forgotten to mention.

We are not surprised at the horticultural misfortunes that have overtaken

Mrs. Hyacintha; especially when we look at the advice given to amateurs by some of our gardening friends, who take infinite pains to explain what needs no explanation, and to omit exactly that which is the essential thing to know. Before roasting a hare, it is necessary to catch it; before thinning, and manuring at the very moment of projection, and tying plants neatly to sticks or bits of bushes, it is necessary to make seeds grow. How to do it is a question which great gardeners can answer, but sorely puzzles little ones.

Shall we be believed, when we say that it is a mere affair of temperature? Or rather, can any one doubt it? The seeds that will not grow come from countries in which the earth is far warmer than here. Mignonette, for instance, from the north of Africa, Cenias and Arctotids from the Cape of Good Hope, Rhodanthes and Helichrysums from New Holland, in all which countries the earth is more heated than with us. Seeds cannot grow unless they are submitted to a certain amount of warmth, below which they die after a few weeks' exposure. In this respect they are like eggs, which are addled if kept in an unnaturally low temperature. Now, the month of April, or even the end of March, are seized upon by eager amateurs as the time at which to sow their annual seeds. But the mean temperature of the surface soil near London, in March, may be taken, in round numbers, to be as low as 41° , and in all April as $46\frac{1}{2}^{\circ}$; the temperature of the corresponding months in N. Africa, the Cape or Australia is, however, at least 10° higher, an enormous difference in its effect upon plants; and such an amount of warmth is not gained in this country before the end of May at the soonest. It is no wonder, then, that the tender seeds of the warm parts of the world should perish when thrown too early upon the chilly soil of this northern region. If our fair complainant will moderate her zeal, and wait with patience till May before she begins seed-sowing, she will find her mignonette, as well as her other delicate flower seeds, springing up willingly enough, and she will no longer complain of her seedsmen, who are in no way to be blamed. The mere fact of her Clarkias, and Collinsias, and Godetias coming up where other seeds perish, as we say, won't grow as Mrs. Hyacintha thinks, is a proof of the truth of the explanation we have given. They grow because they come from a climate like our own, and the cold that kills other seed is congenial to them.

It excites no surprise in us that a cocoanut will not grow if planted in a flower border; astonishment is reserved for more familiar plants. And yet there is no reason whatsoever why the cocoanut should not shoot as well as the acorn, except that greatest of all reasons, namely, that the earth is never warm enough to excite its vital forces into activity.—(*Gard. Chron.*, 1857, p. 251.)

This is good advice, in ironical style. Why will people continue to find fault as long as they are learners? Experience is always dearly bought, and those who will not read should be willing to pay the cost.—ED.

Gossip of the Month.

THE FRUIT CROP AND WEATHER IN GEORGIA.—Our fruit crop will be a very poor one indeed this season. Peaches and pears are all killed with the April frosts—also a large portion of the apples. All we shall get here is about one-fourth of a crop of these. I regret the loss very much, as I never have seen my pear and peach trees as well filled with fruit spurs and blooms as they were this season. Had it not been for the unusual warm weather which occurred in February, the frosts of April would not have injured us; but that caused the buds to expand and bloom prematurely, and consequently were more susceptible of injury than they otherwise would have been. Shrubby, also, suffered severely, particularly roses; all were killed to the ground, regardless of size or age—a Lamarque, as large as one's wrist, on the front of our house, was killed to the ground. A dozen or so of the Bengal varieties were all that escaped,—all had stood the severe cold of winter without injury, but the warm sun of February set the sap to flowing, and then, when the mercury went down to 22° in April, they were compelled to succumb to it. Several of my apricot trees, which had bloomed and leaved out, were entirely killed. We will have an abundance of strawberries, gooseberries, &c.,—they are now a month later than usual. All in all, this has been a disastrous spring for farmers, planters and horticulturists at the south,—in an adjoining county in North Carolina, many farmers have lost large numbers of cattle from starvation, and even in this county nothing in the forage line is left, as we were compelled to feed for a month later than usual.—*Resp'y yours*, J. VAN BUREN, *Clarksville, Ga.*, May 14th, 1857.

THE FRUIT CROP IN MASSACHUSETTS.—From present appearances, the fruit crop throughout our State will be a more than average one. Peaches, notwithstanding the cold winter, with the mercury at 20° below zero, have rarely shown a more abundant bloom, especially in the eastern part of the State,—thus wholly destroying the theory which has been so current, and which we have been inclined to believe in, that a temperature of 12° below would kill the buds. We are now satisfied that it is not the particular degree of cold that injures the buds, but the temperature preceding or succeeding such low depressions of the thermometer, and the period of the winter when it occurs. Pear trees have suffered far more than peaches; and the trees of many kinds, particularly the Bartlett and Beurré Bosc, have been killed outright, while others have had one or more of the main branches injured beyond recovery. While not a peach tree, to our knowledge, has been injured in the least in our grounds, pear trees, of large size, standing side by side, have been destroyed. In all our experience, extending over twenty years, we have never known a pear tree killed by the winter, unless in a sickly condition previously. If no unlooked-for weather occurs, there will be a most abundant crop of fruit in this vicinity.

HARDINESS OF THE REBECCA GRAPE.—This new and fine grape has proved hardier than the Isabella. Several vines which we purchased last autumn, and laid in the ground near a long row of Isabellas, were much less injured in the wood than the latter;—while the Isabellas were killed down to the snow, the Rebeccas remained unhurt. No better test of its hardiness could be had than this, which sets at rest all the doubts that have been raised in this respect. Isabellas have suffered everywhere, while the Concord has stood without the loss of an inch of wood. With such hardy and fine grapes as the Rebecca, Concord and Delaware, not to mention their earliness, the Isabella will be of little account for general cultivation.

CULTURE OF THE POMEGRANATE, ORANGE AND FIG.—I find in your magazine—and, indeed, in all, for I take several—a great want. Let me give an instance. During two years past I have looked in vain for instructions how to cultivate the pomegranate in pots, in a plain, inexpensive way. It is so cultivated in Massachusetts, I believe. It is a frequent remark among gentlemen of my acquaintance, who, as I, delight in the cultivation of rare fruit, that the subjects of most interest to us seem to be avoided—or, if discoursed upon, so as that the writer plainly supposes his readers know nearly all about the matter. Now I beg to assure you, that we do not know quite so much as is assumed upon such subjects, and therefore you are not to suppose that what may seem a trifle to you—something so obvious as needing not to be mentioned—is in reality so. Probably, simple as it may seem, it involves a perplexing difficulty to us. An article upon the pomegranate, or the orange, lemon or fig in pots,* giving directions how to rear the plant and to fruit it, would be acceptable, I know, to many, and would serve to relieve that sameness of which people complain in horticultural publications. So wide is the domain wherein you are licensed to ramble, and so almost endless the number of flowers fragrant and beautiful, and fruits healthful and luscious, that I think you are verily guilty, if you are not free from dulness.

I am writing this, because laid aside from labor by sickness. But it has long been on my mind to give a hint as above, supposing it might add to the interest and value, which are already very great, of your magazine. Perhaps there may be something unpleasant in the tone of my remarks—if so, please lay to the account of ill-health.—*Resp'y yours, R. G. Cox, Carleton Place, C. W., May, 1857.*

We do not doubt that we may be remiss in regard to some particular subjects. The pomegranate is, no doubt, cultivated in Massachusetts, but to so limited an extent that we doubt if there are but few individuals who could give a good account of its culture. The orange and the fig have both been treated upon at length in our back volumes, the fig in particular several times. We will, however, endeavor soon to refer to them again, and supply the want which our respected correspondent complains of.—**ED.**

* We can't rear these things out of doors, in lat. 45°, and we have no greenhouse, so we try the pot method.

WASHINGTONIA GIGANTEA.—We are glad to see that Mr. Buist has adopted our proposed name of Washingtonia for the great evergreen tree of California, in place of the bombastic title of Wellingtonia applied to it by Dr. Lindley. Mr. Reid, of New Jersey, in whose grounds it stood the last severe winter uninjured, as will be seen by his account of it, has also followed our suggestion. If other of our principal nurserymen will follow this course, it will be henceforth known on this continent as the WASHINGTONIA. The French botanists call it Sequoia, but as there can be little doubt of its distinctness from that genus, now called Taxodium, we presume they will adopt that of Washingtonia. We only hope it may prove hardy in New England, that such a majestic tree may find a place around every American home, where its perpetual verdure will not only keep in fresh remembrance the virtues and deeds of the Father of his country, but, by the age which it may attain, carry his name down to future generations.

BLOOMING OF PAULOWNIA IMPERIALIS.—We have received some seeds of this beautiful tree, which flowered last year for the first time in New England, we believe, in the grounds of Crawford Allen, Esq., of Providence. Mr. Allen in his letter states, that he is “induced to send us a few pods from trees which are growing at his farm, in a light loamy soil and sheltered situation, on the west shore of Narragansett Bay, about ten miles from the sea. The trees are above nine inches in diameter; have *not* been injured by the last two cold winters. They flower each year, the blossom being the size of the Canterbury Bell, and of a pale blue color, giving out a strong and pleasant odor.”—*Respectfully yours*, CRAWFORD ALLEN, Providence, May, 1857.

We return our thanks to Mr. Allen for the seeds, and hope to raise some healthy young plants.

WASHINGTONIA GIGANTEA.—It gives me great pleasure to inform you, that Washingtonia gigantea has proved quite hardy with me, having stood out unprotected the past winter, without even losing its terminal bud. The foliage has not changed in the least, and will, I think, prove more valuable than all the other California trees that have yet reached us. I do not know of any tree that grows with half such rapidity as this. Mine, only two years from seed, is over two feet in height, and very robust and vigorous. It is also easy to propagate, and will, I think, before long be as plenty as Norway spruce.—*Yours very respectfully*, WM. REID, Elizabethtown, N. J., May 5th, 1857.

Massachusetts Horticultural Society.

Saturday, March 28.—*Exhibited.* FLOWERS: From Wm. Wales, Spiræa Reevesiana flore pleno and 3 Azaleas. From J. Murray, Erica intermedia, a

fine specimen. From Galvin & Hogan, Fortune's five colored rose, *Ribes sanguinea*, *Azalea phœnica*, *Erica caffra rubra* and *alba*, *Erica Sandryana*, *Erica Westphaliana*, *Azalea magnificens*. From J. Nugent, *Erica caffra alba*, (fine,) seedling from *caffra rubra*, 1 fine round bouquet, seedling carnations and polyanthus. From Jon. French, *Azalea præstantissima*. From J. McTear, seedling *camellia*, fine; Lamarque roses, *Epacris autumnalis*, *Erica grandinosa*, *Erica princeps*, *Verbena Samoset*, *Erica intermedia*, *Correa ne plus ultra*, (extra fine, the best variety,) *Acacia verticillata*. From A. Bowditch & Son, Seedling polyanthus, (very fine.) From Hovey & Co., flowers of prize seedling *camellia*.

GRATUITIES AWARDED.

- To J. Murray, for *Erica*, \$3.
- To Galvin & Hogan, for display, \$5.
- To James Nugent, for display, \$4.
- To William Wales, for display, \$3.
- To J. McTear, for display, \$1.
- To A. Bowditch & Son, for Polyanthus, \$1.

April 4th.—Exhibited. FLOWERS: From J. McTear, *Iris Susiana*, *Azalea Queen of Perfection*, *Azalea Reine Hortense*, *Cineraria* seedling. From Hovey & Co., seedling *camellia*. From L. Davenport, Roses, Cloth of Gold. From Galvin & Hogan, *Bossiaea macrophylla*. From Botanic Garden, *Amaryllis formosa*, (fine.) From Curtis & Cobb, new yellow hyacinth *Alida Jacoba*.

GRATUITIES AWARDED.

- To Botanic Garden, for *Amaryllis*, \$1.
- To J. McTear, for display, \$2.

April 11th.—Exhibited. FLOWERS: From J. Murray, *Deutzia scabra*, *Cytisus vestita*, (fine.) From T. G. Whytal, *Azalea alba lutescens*. From James McTear, *Correa ne plus ultra*, *Begonia manicata*, *Azalea Glory of Sunning Hill*, *Erica florida*, (fine.) From Galvin & Hogan, *Azaleas Andersonii* and *Glory of Sunning Hill*. From Wm. Wales, *Azalea Reine Belge*, *do. Chelsonii*, *do. decora*. From C. F. Jones, *Oncidium altissima*, *Dendrobium calceolus*, two very fine orchids.

GRATUITIES AWARDED.

- To J. Murray, for display, \$2.
- To J. McTear, for *correa*, \$2; for display, \$1.
- To Galvin & Hogan, for *Azaleas*, \$1.
- To Thos. G. Whytal, for *Azaleas*, \$1.
- To Wm. Wales, for *Azaleas*, \$2.
- To C. F. Jones, for *Orchids*, \$1.

April 18th.—Exhibited. FLOWERS: From J. Murray, 1 very fine parlor bouquet. From Galvin & Hogan, a fine collection of pansies. From T. G. Whytal, cut flowers, verbenas, roses, petunias, Alonsoa, Geraniums.

GRATUITY AWARDED.

- To J. Murray, for bouquet, \$1.

April 25th.—Exhibited. FLOWERS: From A. Bowditch & Son, *Rhododendron maculatum nigrum*, *Rhododendron Ponticum*, *Verbena Imperatrice Elizabeth*, (very pretty.) From J. McTear, *Bletia hyacintha*, *Erica Spring-elli* (new), *Verbena metropolitan*. From P. Barnes, Seedling *Tropæolums*. From Lily Smith, pansies, fine seedling daisy. From F. Winship, fine rose, seedling.

GRATUITIES AWARDED.

A. Bowditch & Son, for *Rhododendron*, \$2.

J. McTear, for display, \$1.

May 2d.—Exhibited. FLOWERS: From Wm. Wales, fine *Mimulus*. From T. G. Whytal, new *Verbenas*, *Dentzia gracilis*, *Pelargoniums*. From W. C. Strong, *Verbena Imperatrice Elizabeth*. From A. Bowditch & Son, 12 pots *Calceolarias*.

GRATUITY AWARDED.

To A. Bowditch & Son, for *Calceolarias*, \$4.

May 9th.—Exhibited. FLOWERS: From R. M. Copeland, *Hyacinths*. From M. Trautman, 6 pots fine *Auriculas*. From J. McTear, *Erica Cavendishii*, *Franciscea lalifolia*. From J. A. Kenrick, Flowers of *Magnolia conspicua*.

GRATUITIES AWARDED.

To M. Trautman, for *Auriculas*, \$1.

To J. McTear, for display, \$1.

To J. A. Kenrick, for *Magnolia*, \$1.

First prize for *Hyacinths*, to R. M. Copeland, \$4.

May 16th.—OPENING OF THE HALL. From F. Winship, cut flowers, in great variety, (a very fine display,) 18 pots *Calceolarias*, (very fine,) 6 pots *Cinerarias*. From J. Murray, 3 pots *Ericas*, cut flowers, *Weigelia*, *Azaleas*, *Roses*, &c. From James Nugent, *Roses*, *Pelargoniums*, *Carnations*, *Verbenas*, new seedling purple *Verbena*, (very good,) &c. From R. M. Copeland, *Hyacinths*. From J. McTear, *Bossæa*, *Lobelia*, *Verbena*, *Euphorbia*, *Geraniums*, *Pinks*. From E. S. Rand, Jr., (not competing for premium,) cut flowers, in great variety, *Begonia jasminoides*, new white seedling *Verbena*, *Annie Alba*, (very fine.) From M. Trautman, 6 pots fine *Auriculas*. From T. G. Whytal, 6 *Pelargoniums*, 6 *Cinerarias*, 6 *Fuchsias*, collection of 40 plants, many entirely new, 6 new varieties silver-leaved *Geranium*, seedling *Verbena*.

From M. P. Wilder, 30 pots plants, including 8 *Cinerarias*, 6 *Azaleas*, 8 *Calceolarias*, 6 *Geraniums*, *Begonia picta*, new *Camellia Downing*, a fine display. From H. H. Hunnewell, 8 pots *Fuchsias*, (very fine.) From Wm. Wales, *Fuchsia*. From J. W. Foster, 2 varieties *Verbena*, 2 pots *Lobelia gracilis*. From J. Waterhouse, *Nierembergia fillicaulis*, *Verbena French's Defiance*. From Jona. French, 13 pots *Fuchsias*. From Hovey & Co., 6 pots *Pelargoniums*, *Petunia Glory of America*, *Pentas rosea*, (new,) and *Azalea crispiflora*, (new.) From J. J. Dixwell, *Forsythia viridissima*, *Andromeda floribunda*, (fine,) *Magnolia Soulangeana*.

PREMIUMS AND GRATUITIES AWARDED.

PELARGONIUMS.—For the best, to T. G. Whytal, \$8.

For the next, to Hovey & Co., \$6.

FUCHSIAS.—For the best, to T. G. Whytal, \$8.

For the next, to Jona. French, \$6.

The committee regret they were unable to award the first Fuchsia prize to Mr. Hunnewell, as his plants were by far the best ever exhibited at the hall: in consequence of Mr. H. not being a member of the society, his plants could only receive a gratuity, which, according to the rules and regulations, can never be greater than the lowest prize.

CINERARIAS.—For fine plants, to F. Winship, \$3.

For the same, to T. G. Whytal, \$2.

CALCEOLARIAS.—For the best, to F. Winship, \$5.

GREENHOUSE PLANTS.—For the best, to T. G. Whytal, \$15.

For the next best, to M. P. Wilder, \$10.

CUT FLOWERS.—For the best, to F. Winship, \$6.

For the next best, to J. Nugent, \$5.

For the next best, to J. Murray, \$4.

GRATUITIES.—To H. H. Hunnewell, for Fuchsias, \$4.

To J. Murray, for heaths, \$10.

To R. M. Copeland, for Hyacinths, \$2.

To J. Waterhouse, for display, \$1.

To J. W. Foster, for display, \$1.

To Wm. Wales, for Fuchsia, \$1.

To M. Trautman, for Auriculas, \$3.

To M. P. Wilder, for Downing camellia, silver medal.

Horticultural Operations

FOR JUNE.

FRUIT DEPARTMENT.

THE month of May, though free from any very injurious frosts, has been cool and wet throughout, and vegetation is now more backward than last year at this time. Great quantities of rain have fallen, and we doubt not the summer will be dry. Such moist weather has retarded all kinds of planting, and much work, which should have been completed ere this, will have yet to be done. Advantage should be taken of the first good weather to complete all digging, planting and weeding. If dry weather should set in, we would direct the cultivator to our remarks in a preceding page in regard to watering,—for we cannot too strongly impress upon the attention of all the necessity of giving greater supplies to many crops than is usually done. Insects should be looked after and destroyed before they have committed their depredations.

GRAPE VINES, in the early houses, will now be at rest, and will require

very little attention. Air well, to ripen off the wood, and keep the house rather dry. Vines in the greenhouse will begin to color towards the last of the month, and will require attention. If any of the bunches are too crowded, go over them again, and thin out the smallest berries. Keep the laterals topped, air freely in good weather, and keep the walks well damped morning, noon and night. If the border is dry, give it one or two good soakings. Cold houses are not quite so forward as usual, owing to the cool, damp weather; the berries will now require thinning, and the laterals to be topped; air freely in good weather, but close up early on damp nights. Water sparingly, except in dry weather.

STRAWBERRY BEDS may yet be made. Plants set out now will bear their best crop next year. Clean and weed bearing beds, and dress with straw to keep the fruit clean. Water freely if dry.

SUMMER PRUNING OR PINCHING should be begun soon,—nipping off all side shoots, not wanted for next year's wood, to two or three buds. Mulch and water trees intended for producing large specimens.

GRAFTED TREES should be looked after, the ties lowered, and the shoots carefully staked, if growing rapidly, to prevent their being broken by the wind.

FRUIT TREES will require thinning soon. Look over, and take off all the small, inferior and poor specimens first, and thin enough of that remaining to leave a crop which will not injure the tree.

INSECTS should be looked after,—the pear slug, black aphid and red spider often injure many trees. Syringe with whale-oil soap, made by dissolving two pounds in twelve or fourteen gallons of water, according to the strength of the soap.

FLOWER DEPARTMENT.

The houses will soon require to be cleared of all the winter occupants, and their place supplied with summer flowers, such as Japan lilies, Achimenes, Gloxinias, Fuchsias, &c., &c. In removing the plants, let them be carefully arranged in a good place, and not thrown about anywhere, as is too often the case. See that they are properly watered, syringed, &c. Such plants as require the protection of the house should be repotted, cleaned and put in fine condition. Young stock for winter blooming should have every attention. Prepare soil now to shift the camellias, which should be done early in July.

PELARGONIUMS will be in full bloom. Keep the house well aired, both by night and day. Water more liberally.

CAMELLIAS should be removed from the house this month, selecting a half-shady place for them. Such as have not made their buds, may remain a week or two longer.

AZALEAS should now be well supplied with moisture, while they are making their growth.

ACHIMENES AND GLOXINIAS may have their last shift into larger pots.

FUCHSIAS may be repotted, if fine large specimens are wanted.

CHRYSANTHEMUMS should be shifted into larger pots this month.

CINERARIAS, done flowering, should have the protection of a frame, where they can be sheltered from heavy rains. Seeds should be planted now.

HEATHS AND EPACRISES may be turned out into beds, or kept in pots.

ORANGE TREES may be plunged out into the open ground.

ROSES, in pots, should now be planted out in the open ground, where they will make fine plants.

CHINESE PRIMROSES should be kept in frames, in a cool and half-shady situation.

GERMAN STOCKS, for winter blooming, should be planted this month.

VERBENAS, for blooming in winter, should have a shift this month into larger pots.

MONTHLY CARNATIONS may be turned out into the ground, where they will continue to bloom, and where the plants may be layered for a young stock.

WINTER BLOOMING STOCK will require attention. The kinds are too numerous to mention: continue to repot and grow with vigor everything intended for that purpose.

FLOWER GARDEN AND SHRUBBERY.

Every good garden should now be in fine order. The late rains have retarded planting the more delicate things, but they have given a deep verdure to the lawns and a vigorous growth to all plants. Let the planting be completed as rapidly as possible.

The lawns should now be mown every ten days or fortnight, the edgings cut neatly, and the walks kept clean and hard. Roll often to effect this.

HEDGES should be clipped now, if not done before, and if any gaps occur in box edgings they should be repaired. Stake and tie up the Herbaceous Pæonies, which lose half their beauty when the heavy flowers fall upon the ground and get soiled with earth. Weed and rake the borders often, and keep every department neat and in the best order.

GLADIOLUSES may yet be planted, if not already in the ground.

DAHLIAS should now be planted. Prepare a good soil, and water if the weather should be dry. Look out for cut worms, which often destroy the plants.

BEDDING-OUT plants of all kinds should be got into the ground, keeping a reserve stock to plant in the bulb beds after they are taken up.

NÆOPOLITAN VIOLETS should be planted, according to directions in our last number.

HOLLYHOCKS should be watered, if the weather is dry. Mulch the plants and stake the flowering shoots.

ROSES should have attention. If the slug or vine fretter appear, syringe with whale-oil soap.

CARNATIONS and PICOTEEES should be tied up to neat stakes.

JAPAN LILIES should be tied up to stakes, to prevent their being broken by the wind.

LOOK AFTER INSECTS of all kinds,—especially caterpillars, rose slugs, the green fly and cut worms.

SUMMER MANAGEMENT OF FRUIT TREES.

In a late number of the Magazine, we gave some brief directions for the spring management of fruit trees, with a promise that we would endeavor to follow up our advice with remarks adapted to the advancing season of the year. We now take up the subject again.

The management of fruit trees requires the constant attention of the cultivator. Unless he is willing to bestow care and attention upon them, it is of little use to plant with the expectation of obtaining superior fruit. Neglected trees may, and undoubtedly will, produce more or less, but of inferior quality, and so much unlike that obtained by high cultivation, that it would scarcely be recognized as the same variety. The mass of fruit offered for sale in our market is of this description; and it only need to be compared with that raised by the skilful cultivator, to see how great is the difference in quality, or, to purchase, to learn how great the difference in its market value.

It would be almost impossible to expect to find our markets supplied with the finest fruits. There always will be quantities of inferior quality raised, and it will reach the market for sale. But, if those who produce it knew the value of that which is good, there would be less than there is at present, and there would soon be more attention given to its cultivation. But the truth is, a great many who raise fruit do not know to what perfection it can be grown; and, ignorant of this, they remain satisfied with what they produce, and make no attempt at improvement. If it is an object to introduce new varieties in the place of old ones, it is certainly an object to grow them well, or they may be inferior to such as they already have. Were it not for the amateur cultivators, who send their surplus crop to market, it would be difficult to procure superior fruit, notwithstanding the very high price which it always commands. Fortu-

nately, the fine specimens which have occasionally been offered, have shown to what perfection our best fruits may be grown; and those who can profit by example have done so, and fine specimens, though by no means abundant, are less so than formerly. We can only hope that continued attention to the rearing and management of trees will result in a liberal supply of that which is good, in place of the inferior products of our gardens and orchards.

To accomplish this, however, especially with the pear, which stands at the head of our hardy fruits, it is scarcely possible to do so only under what may be termed artificial culture,—that is, growing the trees as pyramids or espaliers; so many of the choicest kinds require shelter or protection from our cold winds, that as orchard trees, only in highly favored situations, they cannot be relied upon for constant crops of the finest fruit. We may, in time, possess such varieties, but at present there are but a few which give good results under such treatment. Other fruit trees are less capricious in their growth and produce.

That our remarks may be better understood, we shall give them under these four heads:—Summer Pruning, Thinning the Fruit, Mulching, Watering.

SUMMER PRUNING.—We have, in our previous remarks, above referred to, (p. 97,) given advice in regard to winter pruning, manuring and insects. We shall suppose that the trees are now in vigorous growth, after the ordinary labors of the season. The first thing which will require attention, with all but orchard trees, is the summer pruning. This, with some kinds, should already have been commenced, though July is the month when the greater portion of it should be done,—but it will require to be continued till the last of August, and even, with some vigorous trees, till into September. We have, on several occasions, given advice in regard to summer pruning, but, at the risk of being tedious, we shall proceed without reference to anything we have said before. The whole process of summer pruning is new to most American cultivators, and little understood except by those who have made it a study, and perfected

their study by practice. The French, who are masters of the art, have long managed their trees in this way, and it is to their intelligent cultivators that we are indebted for what we know in reference to its practice. They have reduced it to such a system, that they can bring their trees early into bearing, and clothe them with fruit spurs from top to bottom. We intend, in a future article, to illustrate the practice with engravings, from some of the French writers, by which alone it can be fully understood.

Summer pruning, or pinching,—for most of the work should be done with the thumb and finger, before the shoots acquire solidity,—consists in stopping the elongation or growth of the young branches, by pinching or cutting off the ends more or less, according to their strength, situation, &c. By this means, an increasing formation of wood is prevented, and the accumulated sap forced into the shoots below those which are stopped, and what would otherwise be barren spurs, (called *dards* by the French,) become fruit buds in a short time. As an illustration: suppose a shoot was produced the last year two or more feet long, and at the winter pruning it was shortened to one foot. Now this shoot, when it begins to grow, will only push towards the end, say the last five or six buds; the other buds will remain dormant, while those which grow will push so rapidly, that they soon crowd each other, and make wood two or three feet long, which would have to be cut back again at next winter's pruning. This process may go on for years, if not checked, until the trees become a mass of wood, without any appearance of fruit buds. If such a shoot is examined now, it will be seen as we describe it, viz., with five or six young shoots springing from the last five or six buds. Their growth must be checked, in order to push out the dormant buds below; pinch them off, therefore, at the second, third or fourth joint from the branch—if already too tough to break, cut them with the knife. In a short time the eyes below will begin to grow, or, if already grown, they will begin to thicken and form a good strong bud at the end. The shoots that were pinched off will also grow stouter, and form one or more buds along the

sides, or perhaps the terminal bud will break again ; if it does, after making four or five leaves, it should be stopped a second time, later in the season. The main shoot, if strong, may be nipped off at the same time, unless wanted to fill some vacancy, or make a more symmetrical tree. Pinching it off at a greater or less length, depends upon the vigor of the tree ; but, as a general rule, it may be stopped when six or eight inches long. If stopped too short, it will make all the dormant buds below break too strong ; and, in the place of incipient fruit spurs, fresh shoots will be formed, which will need pinching again.

Proceed, in this way, to stop all the *side* shoots, unless they are wanted to fill some vacant place, all over the tree, afterwards pinching the main shoots, to give shape to the head. If the growth is carefully watched, the results of this process will be soon apparent, and spurs will be formed along the branches which will become bearing shoots in the second or third year, sometimes the first ; but with trees upon the pear, not often till the second or third. Repeat the pinching as often as the buds break on the shoots already operated upon, until the growth begins to slacken in autumn, when it may be discontinued, and the final pruning left to be completed after the ripening of the wood.

Though summer pruning is applied principally to the pear, it may be adopted with equal benefit upon the apple, plum and other fruits, especially the peach, only with some modification, as the latter tree does not form spurs, but bears only on the young wood of this year. It should not, therefore, be pinched but once, and not later than the last of July, otherwise the shoots will be too weak, and make too late a growth, to form fruit buds.

THINNING THE FRUIT.—Trees already coming into bearing need much attention in regard to thinning the crop, especially with some prolific sorts of the pear—the Bartlett, Louise Bonne of Jersey, Duchess and Passe Colmar, for example. These set their fruit so abundantly, that if all were allowed to grow, they would not only be small and indifferent, but at the same time would injure the tree if young. Some

kinds have their fruit very regularly distributed over the branches, like the Beurré Bosc, Swan's Orange, Dix, Columbia, &c. ; and if these are not thinned, the fruit is larger and better, and the trees receive less injury from the crop. With the luxuriant sorts, the thinning process should be commenced at once, taking off all but one in each cluster immediately, and subsequently, after the insects have made their customary attacks, gathering those in which they have established themselves, and thus not only relieve the tree, but accomplish something towards destroying the progeny for another year. We believe that if thinning was promptly attended to, and all the wormy specimens picked before they were allowed to fall, in a few years the insects would cease to commit any very serious injury, and there would be a better selection in the important operation of thinning. The early sorts of pears should have their thinning done immediately, complete ; but the later varieties may be gathered as we have above detailed.

The amateur cultivator rarely thins his fruit enough,—the desire to procure the first fruits of a new plantation tempts him to allow his trees to bear too freely ; but it is a fatal error, and one which has done more than anything else to bring dwarf trees (pears on the quince) into disrepute. The prolific bearing sorts produce abundantly on the pear, but when to their abundance is added the still more prolific character of the quince, one or two heavy crops give the trees such a check that they recover slowly, or live out a miserable existence.

There is no rule that can be given to guide the novice in fruit culture, so much depends on the vigor of the tree, &c. ; but if we say a tree three or four years old should not be allowed to bear over a dozen specimens, we set it within bounds. The quantity may be increased yearly, as the tree acquires age and strength, till the sixth or eighth year, when it may be allowed to produce seventy-five or one hundred pears. Now it is no uncommon occurrence to see very small dwarf pear trees bearing fifty or more specimens ; and it is not till dear experience has taught the lesson, that this mistake

is discovered and avoided. The habits of the different sorts of pears must be known, to proceed with judicious thinning ; still, the general rule which we have given, will answer every purpose till such knowledge is acquired. It is better to err on the right side, and thin too much rather than not enough.

MULCHING.—In our warm and variable climate, where we experience such seasons of drought, the energies of the cultivator are often expended without any adequate return. No sooner does a plantation of trees begin to show its beautiful fruit, than one of our long and parching droughts sets in ; the trees, perhaps, show little diminution of vigor, but the promising fruits of June become withered, cracked and knurly specimens by the end of August. The process goes on gradually, and only to attentive eyes is it observed till too late to be remedied. Knowing the tendency of many of our best pears to be subject to this injury, the cultivator will guard against it as far as it is possible to do so. Liberal quantities of water will supply the deficiency, and usually check the evil ; but this element is not always at hand in sufficient abundance to do any good, and the labor of supplying it is expensive. Other expedients must be resorted to, such as frequent stirring of the surface soil, mulching, &c. The former operation is always attended with good results, but mulching is more effectual, and should be resorted to in all thin and shallow soils at least, and if in deep ones all the better. A thin layer of strawy manure, old compost, tan, leaves or hay should be spread over the ground to the distance of six or eight feet from the tree. We say *thin*, because we think it more beneficial than if thick ; the *rationale* of this is, that a thick covering entirely excludes the air, which is beneficial to the roots, while it serves no available object ; it is only for the purpose of checking evaporation, and a small quantity does this as well as a large one ; besides, the dews which fall on the latter do not reach the roots so readily as on the former. If the mulching material contains within itself enriching substances, it is of course better than that which does not ; on this account we prefer

manure, either old or new. It should be spread over the surface immediately. It effectually checks the growth of weeds, and, when water is given, it prevents the surface from becoming hard and baked, as is always the case when water is applied in dry weather.

WATERING.—There are few sorts of pears which do not, in our climate, at some period of the summer need water. Sometimes the early part of the season is dry, and the latter moist; and again, the early part is wet, and the latter dry. In either case, there will be need of artificial watering, if the object is to have the best fruit. On thin soils it is still more necessary, and success cannot be complete without it. There have been objections made to frequent watering, and justly too; but this has been because it has not been given with judgment. If the advice is to water, all trees are watered alike—the newly planted, the young, and bearing trees; hence the advice to water often would be attended with injurious results,—for more newly planted trees are killed by constant soakings, than from any other cause. Water should not be administered till the tree is able to digest it. Recently planted, it is unable to do so; but as soon as firmly rooted, and the demand for supplies of sap are made by the rapid growth, it may then be given freely, and with the best results. One other injury there is, too, connected with watering even large trees; this is the chilling the surface soil, and causing it to bake and become hard, and impermeable to the dews and air. This is to be avoided. Water should be given in liberal quantities, so that it may reach the *bottom* roots, and the surface should be stirred (when it is not mulched) as soon as it becomes dry enough to lose its adhesiveness. In an article in our last number, (p. 241,) we alluded to the great benefits of watering; and, in connection with it, we forgot to quote some remarks of the late Mr. Knight, president of the London Horticultural Society, showing the great importance of water in vegetation, and refuting the idea that its application, even during sunshine—which to some gardeners is such a bugbear—results in any injury whatever.

“The quantity of water which may be given with advantage to plants, of almost every kind, during warm and bright weather, is, I believe, very much greater than any gardener, who has not seen the result, will be inclined to suppose possible; and it is greater than I myself could have believed upon any other evidence than that of actual experience.

“When water is distributed in the usual quantity from the watering pan, its effects, for a short time, are almost always beneficial, by wetting the surface of the ground. But, if water thus given be not continued regularly, injurious effects will follow; for the roots of plants (as I have shown in the *Phil. Trans.*) extend themselves most rapidly wherever they find proper moisture and food—and, if the surface alone be wetted, the roots extend themselves superficially only, and the plants, consequently, become more subject to injury from drought than they would have been if no water had been given them,—a circumstance which can hardly have escaped the notice of any observant gardener. When, on the contrary, the soil is irrigated, it is wetted to a great depth; and a single watering, once in eight or ten days, is, in almost all cases, fully sufficient.

“It may be objected, that excess of rain is more often injurious in the climate of England than the drought; but in wet seasons, plants suffer owing to want of light, and, generally, of warmth. And I feel confident that, if the same quantity of rain which the soil receives in our wettest summer, were to fall only between the hours of nine in the evening and three in the following morning, and the sun were to shine brightly and warmly through the whole of the days, no injurious effects will follow; and any experienced gardener knows with what luxuriance and rapidity plants of every species grow in hot and bright weather, after the ground has been drenched with water by thunder storms.”

This is the whole philosophy of watering; and it bears us out in our remarks, that the “hot and bright sunshine” of our climate, which we always have, will never injure our best fruits, provided they are supplied with moisture at the

extremities of the roots. Watering in driblets is the bane of all good gardening, both in doors and out. Thousands of fine plants are lost every year from this constant shaking the water pot *at* the plants, instead of giving the soil a complete drenching; and thousands of newly planted trees and shrubs are yearly spoiled from the same cause. Let it, then, be fully understood, that water is one of the most influential elements of vegetation, when administered abundantly and at the right time.

THE ART OF CLEARING A WOOD WITH REFERENCE TO
LANDSCAPE.

BY WILSON FLAGG.

WHEN the pioneer of the wilderness is opening a tract of forest, for purposes of agriculture, it is very properly his custom to cut down all the trees, as one would mow the grass in a field. If any trees are left standing in the space, they are such as are growing upon a barren knoll or declivity, where they occupy useless ground, and would serve to break the force of the winds. It is not the design of these remarks to offer any hints to the pioneer, who must, in all cases, be governed by those rules that serve his own immediate interest and convenience. But in this part of the country, very little of the primitive forest remains; and, in the present growth of wood, there are many well-formed trees that are worthy of preservation, and many groups of trees which are more valuable than anything else that could be made to occupy their places. Hence, when one is employed in clearing a wood, he must exercise a great deal of judgment and discrimination, or he may not only injure the beauty of the landscape, but seriously impair the value of his estate, while he is reducing his woodlands to tillage.

The errors which have been most generally committed arise from the habit of overlooking the great comparative value, as objects in the landscape, of fully developed trees

of a large size—of the usefulness of trees on barren ridges and elevations, and of their importance for shelter and protection, as well as for shade. Trees are as important to our comfort in winter as in summer, and as necessary to protect our pastures and our cultivated grounds from the cold and the winds, as to shelter our enclosures from the heat of the sun. But the object of my present inquiries is to ascertain, when clearing a wood, the character of those trees which form the most valuable objects in the landscape, and the nature of those situations from which they ought not to be removed.

Foremost in the catalogue of those which might be left standing alone in the clearing, is the American elm. This tree, on account of its habit of dividing its main stem into several equal and diverging branches, may often be found in a dense wood, possessed of a very good shape,—dividing, as usual, at the distance of fifteen or twenty feet above the ground, and differing from an elm that had grown in an open field, only by the greater length and slenderness of its divergent branches. Such individuals might be left on the spot, after the other trees have been removed, and eventually will attain a very beautiful shape. But even if the elm, after the manner of other trees in the forest, has sent up a single undivided shaft to the height of forty feet or more, it might still be preserved with advantage, as it would soon become clothed, from its root to its summit, with a wreath of its own vine-like branches, and form a magnificent plume—bending over with a peculiar grace, and charming the sight by its beauty, no less than by its singularity. One remarkable trait in the character of the American elm is, that among all the varieties of shape which it assumes, if left to itself, each one is striking and beautiful.

The trees most decidedly ill-adapted to make a good appearance, and to be serviceable, when left in a clearing, are those which have the strongest inclination to send up a single stem, without subdivision. Such are all the trees of the pine and fir tribe. With the exception of those individuals which have been caused to divide into several

branches, by the loss, when young, of their leading shoot, no pines or firs, that have grown up in a forest, can ever acquire a comely shape after the wood has been cleared away from them. Trees of this kind are occasionally diverted, by accident, from their normal growth, and finely subdivided, like an elm. Such anomalous individuals may sometimes be advantageously preserved. These exceptions, however, are of rare occurrence; and, when a tree of good form and proportions is found in a wood, it is usually the occupant of a vacant space, standing on an island, in a bog, or upon a rock, that protects it from the encroachment of neighboring trees.

It is the elongated shape of the trees in a forest, and not their inability to bear the force of the winds, that renders it commonly unadvisable to save them. Many groups of trees might be saved upon knolls and declivities; but we seldom find, in the primitive forest, a tree that would ever become a good standard. In a new growth there are frequent spaces that are not filled, allowing the few trees that occupy them to grow without any stint. Hence in New England, except the mountainous districts, there is seldom a tract of woodland in which we may not find an abundance of trees that would become excellent standards, if left in a clearing. In a pasture, these solitary trees and occasional groups would be invaluable, not only for the shade and shelter they afford to grazing animals, but for the improvement which they add to the beauty of the landscape, and to the pasture by the dropping of their foliage.

There are certain species of trees which have sufficient vigor to supply themselves with lateral branches, and will eventually form good standards, though they may have been considerably elongated in a forest. But the majority of trees can never mend their shape after it has once been ruined. It will commonly be found necessary to destroy all the largest trees, and save those of middling size which are not irrecoverably misshapen. When full grown trees, of an elongated shape, are saved, their tops will not increase after they are left alone; but half grown trees, of a vigorous habit,

will often obtain a good spread of branches. Oaks, of every species are commonly spoiled by growing in a dense wood. The majestic character of the oak requires that its trunk should be short. A tall, slender oak is wanting in grandeur, and can never attain any beauty or grace without it. An oak must always be either majestic, or ugly and worthless.

If well formed single trees cannot be found that may be advantageously saved in a clearing, groups of trees, on sudden swells and declivities, and small clumps, may supply the deficiency. Often, in a second growth of forest trees, some may be found, arranged in very beautiful clumps, which, if left standing, would present the appearance of a single wide-spreading tree. This is especially true of those species which spring up vigorously around a parent stem that has been cut down. Many fine clumps of maples and beeches are produced in this manner—but oaks of this description are seldom valuable. When such a clump is preserved, the feeble and slender individuals ought always to be removed from it.

These may be called homogeneous clumps; and they will make more wood, by their increase in a given length of time, than any single tree of the species could make in the same soil and situation. But there are also heterogeneous clumps, which, though more rarely forming so unique an assemblage, deserve to be saved. The different species, when thus grouped together, afford many pleasing harmonies and contrasts, in the colors and forms of their foliage, especially in the autumn.

But the greatest danger of acting without judgment occurs when one is clearing a half-wooded pasture. In such lands, the trees being comparatively sparse, have formed many beautiful groups, that add great attractions to the landscape, and afford protection to the grazing herds. When a farmer clears such a pasture for tillage, he is too apt to prize these trees at too low a value, and to cut down all those which are profitable for their timber. Many a land-owner has thereby ruined an estate, and rendered it unsalable,—while his neighbor, though possessed of less skill as a cultivator, has allowed

his trees to stand in irregular groups over all his estate, which has thus become highly eligible as a country residence for a citizen of wealth and taste. Of two farms, equal in soil and situation, the one which has the greatest number of large trees, or groups of trees upon it, in different places, will always command the highest price in the market, especially in the vicinity of a large commercial town.

POMOLOGICAL GOSSIP.

NEW PEARS.—We conclude our notices of new pears, from our last number.

BERGAMOT DE MILLEPIEDS, (Goubault.) Fruit of medium size, roundish; skin greenish, rather dark, dotted; flesh white, melting, juicy, first rate. Ripens in September.

GENERAL CANROBERT, (Robert.) Fruit of medium size, resembling a St. Germain; skin yellow at maturity, dotted with russety spots; flesh delicate, melting. Ripens in January and February. First rate.

LEON LE CLERC DE LOUVAIN, (Van Mons.) First quality. Ripe in December and January.

LIEUTENANT POITEVIN, (Flon Grolleau.) Fruit very similar in form and size to the Colmar d'Aremberg; skin yellow, more or less covered with spots and stripes of russet; flesh white, juicy, half melting, excellent. Ripe from February to April. First rate.

L'INCONSTANTE, (Bivort.) First quality, large. Ripe from September to November.

LOUIS DUPONT, (Durieux.) Fruit large, melting; flesh white; juice abundant, sugary, with a very agreeable perfume. Tree vigorous, and forms a handsome pyramid. Ripe in October and November.

MADAME MILLET, (Millet.) Fruit very much resembling the Brown Beurré in form and color, and equal to the Urbaniste in quality; flesh white, delicate, fine, half melting, sugary, and agreeably perfumed. It is said to surpass, with-

out doubt, the Easter Beurré. Ripe in March and April. First rate.

MADAME ADELAIDE REVES, (S. Van Mons.) Fruit medium or large, irregularly turbinate, of the Bergamot form. Skin citron yellow, striped with reddish brown, dotted with pale russet, and spotted with black; flesh white, half fine, melting; juice abundant, sugary, with a most agreeable perfume. Always first quality. Tree very vigorous and very productive, suitable for orchards or pyramids.

MARIA DE NANTES, (Garnier.) Fruit medium size, turbinate; skin clear green, nearly covered with reddish brown, slightly colored on the sunny side, and regularly spotted with grayish dots; flesh white, fine, melting; juice abundant, very sugary, and perfumed. November.

MARIE LOUISE D'ACCLE, (Gambier.) Fruit as large as the Beurré Clairgeau, very melting; juice abundant, vinous, and most excellent. Tree very productive, for orchards or pyramids. Produced from the Marie Louise. Ripe in September and October. [This may be only the old Marie Louise under a new name.]

MARECHAL PELLISSIER, (Flon Grolleau.) Fruit of medium size, oval ovoid; skin yellow, tinged with red on the sunny side; flesh tender, juicy, first rate. Tree very productive. Ripe in September and October.

NOUVELLE FULVIE, (Gregoire.) Fruit very large, pyriform, pyramidal, very uneven on the surface; skin yellowish citron, colored with bright red on the sunny side, striped, spotted, and marked with brownish red; flesh yellowish white, very fine, melting, buttery; juice abundant, sugary, with an exquisite perfume, approaching that of the Passe Colmar. Always first quality. Tree of medium vigor, productive, suitable for pyramids. January and February.

POIRE ROUSSELON, (Berckmans.) Tree of medium vigor, for pyramids on quince or pear; fruit medium size, form of a Doyenné; skin citron yellow at maturity, dotted with russet, and deeply colored on the sunny side; flesh fine, half melting; juice abundant, sugary, slightly acid, with an agreeable perfume. First quality. February.

PRINCE ALBERT, (Bivort.) Fruit large, pyramidal; flesh half buttery and melting. First quality. April.

ROUSSELET VANDERWEKEN, (Gregoire.) Fruit small, exquisite. End of October.

SCHAHIN GHYREY, (from the Crimea.) A superb pear, of an original form, very melting, sugary, and musky. September and October.

SAINT VINCENT DE PAUL, (Flon Grolleau.) Fruit small, russety; flesh sugary, half melting. Ripe in January. First rate.

SUCREE DU COMICE, (C. Hort. Soc. of Angers.) Fruit of medium size, turbinate, irregularly formed; skin yellow, covered with green and russet dots; flesh tender, and sugary. Second rate. Ripe in September and October.

SERAPHINE OVYN, (S. Van Mons.) Fruit medium size, roundish turbinate; skin smooth, clear yellow, striped with dull red in the sun, marked and spotted with brownish red, and dotted with large gray specks; flesh yellowish white, half fine, melting, buttery; juice very abundant, sugary, vinous, with a most agreeable perfume. Always first quality. Tree vigorous and very productive, for orchards or pyramids. Ripe in October.

GREAT EXHIBITION OF FRUIT BY THE LONDON HORTICULTURAL SOCIETY.—Some time since, one of the circulars of this society was sent to us, announcing a great exhibition of fruits to be held in London in October next, to which all foreign cultivators were invited to compete. The prizes are liberal, though that would be the least inducement for our cultivators to send fruit so far. The object would rather be, to show to what success we have attained in the culture of fruit, and to make known many of our fine American seedlings. We had intended to give an extract from the schedule of premiums as soon as we could find the opportunity to do so, and we are now reminded of it by a gentleman of Boston, who recently received the following letter from the chairman of the exhibition committee, C. Wentworth Dilke, Esq., and requested us to call attention to it. We copy the letter with great pleasure, and append the list of prizes:

My Dear Sir,—I have the pleasure to forward to you programmes of the arrangements of the Horticultural Society of London, for this year, in the hope that you may be willing to persuade the Massachusetts Horticultural Society, and Boston private growers, to send over fruit for the October exhibition, (the 24th.) You will observe that this year we invite competition from abroad; a resolution I had great pleasure, as chairman of the exhibition committee, in voting for. That fruit will stand well, we all know by the admirable supply America sends us of one of the best of our eating apples—the Newtown; and I personally brought over watermelons, which were still in fine order a week after my arrival,—and one that has been sent me since was also in perfection. The fruit I brought over I had simply packed in hay and straw, in a stout wicker basket, and it was placed in the luggage hold. Whether it would stand better in the steward's ice-cupboard, I know not.

Of course I do not suppose that the Boston growers will be tempted by the prizes. The competition must be for the honor; but in my individual capacity, I shall have great pleasure, if any fruit is sent over, in seeing to its proper display, with all honor to the name of the contributors; and I will also personally undertake to pay all expenses that may be incurred from the time of landing, so that Boston exhibitors may be under no apprehension of unknown demands springing up. Your wall fruit is, I suppose, all over by the date; but if there are any of the late peaches tempted by your Indian summer, careful picking and careful packing in silver paper will help over many a long day; and a little care, on the part of the steward of the steamer, will perhaps keep them from air and wet, and get them despatched to me immediately on arrival at Liverpool, instead of being hawked about there.

If anything can be done by the London society for the Boston society, I shall have great pleasure, as a member of the council, in bringing the subject forward.—*Yours truly,*
C. WENTWORTH DILKE, 79 Sloane street, London, S. W.,
12th May, 1857.

It will be noticed, by Mr. Dilke's letter, that fruit can be safely sent to London, particularly apples and pears. The time of the exhibition is rather late for peaches, and if it was not, we are fearful they would not reach London in such a condition as to give us any credit, though they might eat quite as well, or better, than the forced peaches of the English gardens. But in apples, if the season proves favorable, some of our extensive orchardists can make a superb display; and of pears, as great a number, if not as fine, as the best French or Belgian fruit gardens. It would be of real benefit to have our fine native kinds seen in their best condition—not only in showing how great a fruit-raising country this is, but in making known the great number of native seedlings, and their high excellence, which, with few exceptions, have never been seen or tasted by any of the pomologists of Europe.

We append the entire list of the premiums offered, both home and foreign; should not the pride or patriotism of our cultivators be enough to induce them to send their finest specimens.

FRUIT EXHIBITION AT WILLIS'S ROOMS, SATURDAY, OCT. 24.

Classes.	Prizes offered.		
I. COLLECTIONS of fruit; (<i>Fruiterers only</i>), - -	£4	£3	£2
II. GRAPES:			
a. Three bunches of Muscats, - - - -	2	1	15s.
b. Do. of other white kinds, - - - -	2	1	15s.
c. Do. of Black Hamburgh, - - - -	2	1	15s.
d. Do. of other Black kinds, - - - -	2	1	15s.
e. Collections—(<i>Foreigners only</i>), - - - -	4	3	2
f. Boxes of 15 lbs. weight—(<i>Market Gardeners only</i>),	3	2	1
III. PINE APPLES:			
a. Threes, - - - - - - - - - -	3	2	1
b. Single specimens, - - - - - - - -	2	1	15s.
IV. PEARS; of <i>Home growth</i> :			
a. Twelve sorts; six of each, - - - -	3	2	1
b. Six sorts; six of each, - - - - -	1	15s.	10s.
c. Single dishes of desert kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.

Classes.	Prizes offered.		
d. Single dishes of kitchen kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
V. PEARS; <i>of Foreign growth</i> :			
a. Twelve sorts; six of each, - - - - -	£3	£2	£1
b. Six sorts; six of each, - - - - -	1	15s.	10s.
c. Single dishes of dessert kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
d. Do. of kitchen kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
VI. APPLES; <i>of Home growth</i> :			
a. Twelve sorts; six of each, - - - - -	2	1	15s.
b. Single dishes of dessert kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
c. Do. of kitchen kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
VII. APPLES; <i>of Foreign growth</i> :			
a. Twelve sorts; six of each, - - - - -	2	1	15s.
b. Single dishes of dessert kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
c. Do. of kitchen kinds, of one sort, containing six fruit, - - - - -	15s.	10s.	10s.
VIII. ORANGES, LEMONS AND CITRONS:			
a. Collections of Foreign growth, - - - - -	3	2	1
b. Do. of Home growth, - - - - -	2	1	15s.
IX. PEACHES; single dish, containing six specimens,	15s.	10s.	10s.
X. NECTARINES, do. do. do.	15s.	10s.	10s.
XI. MELONS; single fruit, - - - - -	15s.	10s.	10s.
XII. PLUMS AND PRUNES; of either English or Foreign growth:			
a. A collection of three sorts, twelve fruit of each,	1	15s.	10s.
b. Single dishes of one sort, containing twelve fruit,	15s.	10s.	10s.
XIII. FIGS, - - - - -	1	15s.	10s.
XIV. ALPINE STRAWBERRIES, - - - - -	1	15s.	10s.
XV. CURRANTS, - - - - -	15s.	10s.	10s.
XVI. RASPBERRIES, - - - - -	15s.	10s.	10s.
XVII. EUGENIA UGNI—For single dishes of this valuable new fruit two prizes are offered by C. W. Dilke, Esq., F. H. S.—the first of £2, the second of £1.			

The fruit must reach London for delivery October 23d.

MANAGEMENT OF PEACH TREES IN POTS.

FROM THE GARDENERS' CHRONICLE.

THE cultivation of the peach tree in pots we have repeatedly urged upon the attention of fruit growers in our Magazine. As long ago as 1836, in our second volume, we prepared an article detailing its cultivation in this way, and advised all who would wish to procure an annual crop of this delicious fruit, to grow it in this manner. Though so long since, very few have adopted this system of culture, notwithstanding it is such a favorite fruit, and so uncertain a crop in our severe climate.

We have, however, continued to cultivate the peach in this way, and have had the most splendid specimens of the very richest fruit,—richer, indeed, than that under out-door culture; for the crop ripens at the warmest period of the year, in July, and the peaches acquire their highest aroma. The trees are easily managed, produce certain crops, and should be grown in this manner by every one who possesses a grapery.

We do not know, after the experience of twenty years, as we can add anything to what we said at that time. If we were to attempt it, it would be a mere repetition of our previous article. But for such of our readers as may not have access to our early volumes, we copy the following valuable information. It is the best advice we have met with for the management of the trees, and should receive the attention of all who love a good peach, and would secure an annual crop of the finest quality.

We may add, that in our climate the trees should always be removed to the open air in June, when the peaches are the size of small plums, and they thus acquire the excellence which, under no circumstances, can in-door fruits attain. Forced peaches, as those are usually called that are raised in vineries, are tasteless things, and cannot be compared with fruit ripened in the open air.

In England, the construction of "orchard houses," so called, for the cultivation of all kinds of fruit trees in pots, is yearly attracting more attention. Pears, peaches, plums, cherries, and even apples, are raised in this way. But, except as a matter of curiosity, all fruits succeed so well in our climate, that there is no need of growing any of them under glass but the peach or nectarine.—Ed.

The cultivation of peach trees in pots has, of late years, increased very much, and will continue to increase as it becomes better understood, and the results are more satisfactory. Every garden, great and small, should possess peach trees in pots; and that not in scores but in hundreds. Though it is preferable to have a house entirely for such trees, still this is not absolutely necessary, as equal success can be obtained when grown in houses with other things. The great point is to have a regular supply of fruit for as long a period as possible. A good peach is no rarity in September. I, like most people, wish to have a melting George the Fourth in June and July, and thenceforth through the season. For this purpose artificial heat is required. The following mode of culture will, if properly carried out, insure abundant crops.

The first thing is, of course, to get a supply of plants; these can now be had in a bearing state from any respectable nursery; they should be procured as early in the autumn as possible. It is always the best plan for persons to go and choose the plants themselves whenever it is convenient to do so. When the trees arrive, examine carefully the state of the roots; if all is right nothing further is needed until the plants are wanted to force, except to keep the soil in the pots from getting too wet; but if any of the plants are in a bad state, they should be shaken out and fresh potted; these should be marked and placed by themselves, as they will not do to force the next season. The best soil for peach trees in pots is good rich turfy loam and a little rotten dung. The soil in the pots should be kept moderately dry during the autumn; the fibrous roots will then be in a healthy state when forcing is commenced. This is an important point, as it is impossi-

ble to obtain satisfactory results from trees that are badly rooted. When ripe fruit is required about the beginning of June, forcing should be commenced not later than the 25th December. And when it is required to have a succession of ripe fruit, until those on the open walls are ready, a fresh batch of trees should be started every three or four weeks to the end of March; each batch may consist of ten, twenty, or more trees, according to means for growing them and the supply of fruit required.

The general treatment of one batch of trees will apply to all. If the trees are only fresh procured from a nursery, they must not be expected to do too much the first season. It often happens that beginners, hearing of extraordinary things being done with peach trees in pots, expect similar results from their trees the first season of their attempt at cultivation; and their failing to obtain good well-flavored crops leads to great disappointments. This occurs to beginners, particularly among amateurs, from a want of practical knowledge. From six to twelve fruit are the most that ought to be expected the first season. When more are obtained they are inferior in size and quality, and the trees will not be in so good a condition to force the next season as those from which the less number was taken. The trees started in December should be commenced with a temperature of about 40° by night and 45° by day. They should be well watered at starting, they will not then require any heavy waterings until the foliage is developed. After the first fortnight the temperature should rise to 45° by night and 50° by day, with an increase of about 10° with sun heat. At the end of another fortnight the temperature should rise to about 50° by night and 55° by day. The night temperature should not exceed this until after the fruit is set. This is the rock on which so many beginners suffer shipwreck. They forget that the peach must be flowered under a comparatively low degree of temperature; they are frightened to give air, especially if the weather be cold and frosty; they keep a close warm atmosphere, and the results are, the petals all drop off without any fruit setting. Whilst peach trees are in blossom,

air must be admitted abundantly by day, and a little also at night; precautions must of course be taken in severe weather to place some material over the openings to break the cold draughts of air. So long as the temperature is kept above 35° the blossoms are safe, but only keep a close atmosphere and a high temperature and there is a certain end to the crop. This is a point which cannot be too much insisted on, as everything as regards the crop depends on it. By admitting plenty of air, and keeping a night temperature of about from 45° to 50° , if the wood was, previous to forcing, well ripened, a much greater quantity of fruit will set than is ever needed to remain for a crop. The plants up to this stage will not require much watering, and when any water is given, it should be of the same temperature as that of the atmosphere of the house.

When the fruit is all set, and about the size of large peas, it should be carefully thinned, and the shoots will require disbudding; too many should not be removed at one time, it is best to go over the trees often and remove a few at a time, but when the disbudding is finished not one single shoot should be retained more than is absolutely needed for the next year's bearing wood. The trees should now be syringed mornings and afternoons. The temperature should be raised to from about 55° to 60° by night and 65° by day, with an increase by sun-heat of 10° . Air should be freely admitted. The night temperature should not exceed 60° until the "stoning" is over, for this is a very critical period in peach forcing. After this the temperature should be raised to 65° by night and 70° by day. Peach trees will stand a high temperature after this. The trees should still be syringed two or three times daily. From the time the foliage is fully developed, great attention should be given to watering; the trees should never suffer from want of it. I am no great advocate for liquid manure for peach trees in pots; a little occasionally will assist the fruit and do no great harm, if it be clear, in which state it should always be given, as when thick and full of sediment it stops the porosity of the soil and destroys its mechanical condition.

When the fruit is approaching maturity, which, when the trees are started in December, and the foregoing treatment attended to, will be about the beginning of June, it should have all the exposure to light and air possible; the supply of water should be just sufficient to keep the plants from suffering, and syringing should be discontinued until after the fruit is all gathered. When all cleared off, the trees should be kept well syringed to keep the foliage healthy and clear of red spider. About the middle of July the trees should be set out of doors in a sunny, airy situation. They should then be shifted into larger sized pots, using the compost previously recommended. When potted they should be plunged, and they should have as little water as possible. Tiles or slates should be placed over the surface of the pots, both to keep the surface from drying and to throw off heavy rains. The trees will make abundance of fresh roots, which should be carefully guarded from injury. The wood will from full exposure be as hard as whalebone and full of blossom buds. Trees treated thus will be in the best possible condition for forcing the next season.

The above mode of treatment will apply to the trees started at any subsequent period. But, as I before remarked, to have a succession of fruit, a fresh batch should be started every three or four weeks.

All the trees should be shifted before the end of August, as it is of the greatest importance to get them to make all the young roots possible whilst the foliage is in action and before the short days. As the trees started in March will ripen their fruit in August, there will be no difficulty in getting them potted before the end of that month; but all the trees that can should be shifted as early in the month as possible. But little in the way of pruning is required for the next season's forcing, merely the shortening of such shoots as require it. Trees treated as I have described will be in a condition to bear a much better crop the second year of forcing, and by annually shifting them they will continue to bear fine fruit for many years. When the trees get into pots that are inconveniently large, they can be shaken out, par-

tially disrooted, and fresh potted into as small pots as possible. The head should be shortened back at the same time; by these means large trees are reduced to a convenient size.

The cultivation of the peach in pots will doubtless in time become as common as that of fuchias, when the scientific principles on which its successful cultivation depends become more generally known, and this knowledge, thanks to the gardening literature of the present day, is hourly spreading and extending throughout all ranks of society, from the peer to the peasant.

THE OAKS.

BY WILSON FLAGG.

As it is not the design of this series of papers to give a botanical description of our trees, but rather a general account of those which are the most important as objects in the landscape, no attempt is made to describe all the species of each family. Passing over the most inconspicuous, I shall treat only of those which are particularly worthy of cultivation and preservation. There are not many inferior species among the oaks, though some of our hills, in certain parts of the country, are nearly covered with a growth of the scrub oak, (*Quercus ilicifolia*,) called also the bear oak. The chinquin oak (*Q. chinquin*) is a still smaller species, that grows along with the former, though in less abundance, and produces a large quantity of acorns. These two oaks abound in tannin, and their fruit is very serviceable to wild animals and to swine. It has been advised to use the land which they occupy, for sowing the seeds of more valuable oaks and other trees, which would thrive well while young under the protection of these shrubby oaks, and finally supersede them by their larger and more luxuriant growth. This is a very important consideration, as the lands, while covered only with these dwarf oaks and other bushes, are comparatively useless, affording but a meagre pasturage, and admit-

ting of being reduced to tillage only with great labor and expense. By planting the grounds with white oaks, and other useful timber trees, they would soon be converted into valuable property, and eventually furnish timber to supply the place of that which is annually, and with great rapidity, consumed.

The most remarkable of all the New England species is the white oak, (*Quercus alba*,) which, though inferior to the red oak in size, has the most of the characteristics and the valuable qualities of the European oak, and, as ship timber, is inferior only to the celebrated live oak of the Southern States. It bears its branches mostly at a wide angle from the main stem, approaching a horizontal direction, extending to a great length, but making frequent irregular bends, and exhibiting the same knotted and gnarled appearance for which the English oak has been celebrated. The most comely shape which is assumed by this tree is an imperfect hemisphere,—the centre of the circle being formed by the junction of the lower branches with the main stem, projecting from it at right angles, the others radiating at constantly diminishing angles, but with considerable irregularity. But it is more usual to see the trunk of the tree extending, though not perpendicularly, very near to the summit, while the branches are given out crookedly from it, at irregular distances.

The leaves of the white oak, when they first appear, have a pale cinereous hue, mixed with shades of purple and lilac. In autumn they seldom assume a deep red color, but present different shades of an ash purple or French chalk hue, turning to brown as the colors are faded by the frost. The shape of the leaves is variable, some being deeply divided, like those of the scarlet oak, and almost linear—others having large lobes, with shallow scollops. They are of a shining green on the upper surface, and glaucous beneath. They remain on the tree all winter, falling off when the new buds are put forth in the spring. The bark of the white oak is distinguishable at once by its light color, and by its scaly surface, without any deep corrugations. This species, and the

swamp white oak, are the only indigenous oaks that produce edible acorns, which, though varying in quality, are mostly free from bitterness, and sometimes nearly equal to the fruit of the chestnut. They are of a middle size, oblong, and grow singly and in pairs. The trees are fruitful only once in several years, producing occasionally a very abundant crop.

The geographical boundaries of the white oak are Lake Winnepeg on the north, where it attains the height sometimes of twenty feet; the Mississippi river on the west, and North Carolina on the south. At this point it yields its place to the live oak and other evergreen oaks. The finest white oaks are said to be found in Virginia and Pennsylvania. In Massachusetts, it is most abundant in Essex county, where all the largest trees have been destroyed by the *timberers*. Were it not for the protection extended by men of wealth to white oaks in their own grounds, all the large standards would, before this time, have been destroyed. Democracy is fatal to all except political interests. It has no foresight. It perceives the value of an object for present use, but it disdains to look forward to the interests of a coming generation. Its motto is progress; but this progress is, in many cases, but another name for devastation. Though we should have many reasons to lament the division of the community into two distinct classes of rich and poor, yet it is evident that, in proportion to the multiplication of large estates, will be the protection extended to our trees and forests, as well as to the birds.

The swamp white oak (*Q. bicolor*) has considerable resemblance to the true white oak, though it has less breadth, and abounds in straggling branches, that grow out from the trunk below the junction of the larger limbs. The leaves have not the deep sinuosities that mark those of the white oak. They are almost entire, being slightly scalloped, and of a reddish green tint, but differing very little in their appearance in autumn from those of the former species. These trees are, at the present time, very important objects in our landscape, being very frequent as standards, and possessing a great deal of wild, irregular beauty. The wood is next

to that of the white oak in value for ship-timber. The trees sometimes attain a great size ; but they seldom exceed the height of thirty feet in this part of the country, and have not a proportional breadth.

The dense growth of branches just below the junction of the principal limbs, is one of the picturesque appendages of this species, distinguishing it in a remarkable manner from the other oaks, and rendering it highly ornamental to a wild or rugged landscape. Above this growth the tree seldom forms a round head, but one more or less oblong and irregular in its general outline. This shrubby growth is more prominent than the vinery of the elm, and does not clothe the whole extent of the trunk. This tree runs into many varieties in regard to shape, differing sufficiently, in some cases, from the true type to constitute a distinct species. It is highly probable that there may be a regular gradation of varieties, all the way from the finest white oak to the remotest variety of the swamp white oak.

The black oak (*Q. tinctoria*) is at the head of another group, differing essentially from the group to which the white oak belongs. This is the species that forms the nearest approach to the white oak, and the red oak that which is the most distant from it. The black oak is so named on account of the blackish appearance of its outer bark. Its inner bark, on the contrary, is of a deep yellow or orange color, which has caused it to be named, in certain localities, the yellow oak. The bark of the trunk is extremely rugged, but without scales. It abounds in tannin, and is extensively used in dyeing, producing many permanent shades of yellow and brown. The leaves of the black oak are of a yellowish green, deeply cleft and inversely egg-shaped, and in the autumn vary in their tints from a yellow or orange, to a reddish brown. I believe the leaves of this species seldom approach to a crimson.

There are several varieties of the black oak. Indeed, the different species of the respective groups seem, like the hickories, to blend together by graduated varieties, so that there are oaks which it would be difficult to describe as one

species any more than as another allied species. The black oak is a middling-sized tree. An individual is seldom found that exceeds forty feet in height; but it is a handsomely shaped tree, a rapid grower, and highly worthy of cultivation for ornament, no less than for its utility.

The scarlet oak (*Q. coccinea*) resembles the preceding species in many points, though it is inferior in value, except as a landscape ornament. In general beauty no other species surpasses it. It has less inclination to spread than some of the other species; but it exhibits a pleasing regularity of growth, and less frequent gaps in its ramification than the white oak exhibits. Its foliage is of a bright polished green, changing in autumn to a bright crimson red. This is not a scarlet hue, like the coloring of the tupelo and some of the maples. To a distant view the general color may approach a scarlet; but, upon nearer observation, it seems more evidently a bright chocolate red, differing from that of other species of the oak, in having less brown and less of a cinereous shade. In the latter part of October the oaks, as I have before remarked, are the charm of our landscapes; and of all the species, the scarlet oak is the most beautiful and conspicuous. The leaves of the ash, the tupelo and the red maple have fallen, and the oaks are the only important trees remaining in leaf, except the evergreens. It is at this time, that we are struck with the variety of shades presented by all the different species,—the yellow, orange and brown of the black oak, the pale chocolate red of the white oak, including many different shades, and the deep maroon color of the red oak, blended with the deep green of the white pines and the lighter green of the pitch pine, and forming some of the most pleasing harmonies and contrasts. The black and the scarlet oaks may be distinguished by cutting into the bark, which will be found thicker and of a deeper yellow in the former.

The largest species of oak in this country is the red oak, (*Q. rubra*,) which is also the least useful for any purpose, except shade and ornament. This tree has very long horizontal branches, and possesses, in a high degree, that expres-

sion of majesty for which the oak is celebrated. It flourishes on a poor soil, grows with great rapidity, and has comparatively a long trunk, below the junction of the limbs, and a wide-spreading top. Its branches are remarkable for the smoothness of their outer bark, and for their general freedom from those knots and distortions that characterize the white oak. The acorns are large and bitter, but readily eaten by swine.

The leaves of the red oak are divided into five or six lobes on each side, not deeply indented, and terminating in bristles. They are of a glossy green above and beneath, and turn to a deep purple red in the fall. No species of oak is more deserving of cultivation for shade and ornament, as it grows very rapidly, and attains a great width in a comparatively short period of time. The wood is of inferior value, on account of its incapacity to be dried.

FLORICULTURAL NOTICES.

DELPHINIA CARDINALE.—This splendid species has recently flowered in our collection. The plants were raised from seeds received from California, and, though too young to show the real character of the plant, they are sufficiently brilliant and attractive to confirm all that has been said about it. The color is as brilliant a scarlet as the *Salvia splendens*, and, when full size, as large as the old Bee Larkspur. Whether it is an annual or perennial has not yet been ascertained, but its early flowering from the seed seems to us to indicate an annual. We shall soon be able to decide. It is a superb acquisition, and, aside from its own beauty, must be exceedingly valuable for hybridizing the other kinds, by which an infinite variety of colors may be produced.

THE ODIER PELARGONIUMS.—This new style of Pelargoniums is attracting much attention in England, as well as on the Continent. At the late show at the Crystal Palace, London, the fancy kinds were the most admired of all the

Pelargoniums, notwithstanding the best English sorts, in great number and in the highest perfection, were shown in profusion. Several of these kinds are now in bloom with us, and are very attractive from the boldness of the conspicuously marked blossoms. We name a few which are especially fine:—

Glorie de Bellevue, Rubens, Gustave Odier, Eugene Duval, Jacques Duval, Elize Miellez, Etoile du Jardins, Edouard Duval, Madame Eugene Cavaignac, General Cavaignac, Auguste Miellez, &c.

The later English varieties of Pelargoniums are exceedingly fine. Among others particularly showy are Petruchio, Phaeton, Cloth of Silver, Topsy (very dark), Majestic, Lady Bird, &c., &c.

NEW DOUBLE PETUNIAS.—With the acquisition of the Imperial or Double white variety, it was not to be supposed we should long remain without other colors. The Double white is a continental production; but the English cultivators have succeeded in raising several equally as double, and of various shades. These will soon, no doubt, find their way here, if our own amateurs do not anticipate them by the growth of equally fine varieties. With a judicious selection of seed, we doubt not these double sorts may be as easily raised as the double stock and other double flowers. The following are the names and colors of some of the new double ones:—

Ægle, very pretty anemone flowers.

Æthra, beautiful light blue, with full centre.

Alcestes, a bold, large lilac flower, very showy.

Ariadne, splendid full rosy purple, a lovely flower.

Astræa, fine anemone flowered white.

Atys, splendid lilac flower, full centre.

Leucosia, beautiful white, with rose centre.

Parthenope, pure white flower, as double as a rose.

VARIEGATED LEAVED PLANTS.—The cultivation of these beautiful plants is now attracting much attention in England, where they form one of the most interesting features at the floricultural displays. At the great show held at the

Crystal Palace the 30th of May, and also at the great Chiswick fête in the Horticultural Gardens, June 3d and 4th, they were especial objects of attention; and the fine collection of Messrs. Veitch at the latter show, containing *Cissus discolor*, *Hydrangea japonica variegata*, *Colens Blumei*, *Marranta Zebrina*, and sixteen other kinds, received the first prize. All who have seen the *Cissus* and *Colens* which have been shown at our horticultural exhibitions, know how beautiful and attractive they are. We hope our societies will offer special premiums for displays of these plants, that their cultivation may be extended.

360. EUCHARIS GRANDIFLORA *Planch.* LARGE FLOWERED EUCHARIS. (Amaryllidæ.) New Grenada.

A hothouse bulb; growing one foot high; with white flowers; appearing in winter; increased by offsets: grown in peat, loam and sand. *Bot. Mag.*, 1857, pl. 4971.

A very beautiful plant, allied to *Amaryllis*, but with leaves more resembling a *Calla*, and very large "and truly noble pure white flowers, the large staminal cup slightly suffused with pale yellow green;" they are also highly fragrant. The scape produces from five to seven flowers. It is a native of New Grenada, and flourishes in the stove, where it blooms in the winter months. Introduced by Messrs. Veitch as the *E. amazonica*, but it appears to be the *E. grandiflora* of Planchon, as figured in Van Houtte's *Flore des Serres*. (*Bot. Mag.*, March.)

361. RHODOENDRON ALBUM *Cat. Hort. Buitenz.* CREAM-COLORED RHODODENDRON. (Ericaceæ.) Java.

A greenhouse plant; growing two feet high: with yellowish white flowers; appearing in spring; increased by layers and grafts; grown in sandy peat. *Bot. Mag.*, 1857, pl. 4972.

A very small and pretty light-colored *Rhododendron*, blooming when a foot high, with leaves about the size of the *Kalmia*, bright green above and thickly ferruginous beneath, which gives them a rich appearance. The flowers are rather small, cream-colored, and somewhat drooping. It is a native of the Salak mountains of Java, from whence it was sent by Mr. Henshall, the collector of Messrs. Rollison & Son, in whose collection it flowered. Its dwarf habit,

early-blooming, handsome foliage and delicate flowers, render it a valuable acquisition to the greenhouse, where the rank-growing kinds soon become too large for ordinary collections. (*Bot. Mag.*, March.)

362. *BEGO'NIA MICRO'PTERA* *Hook.* SHORT-WINGED BEGONIA. (*Begoniaceæ.*) Borneo.

A greenhouse plant; growing one and a half feet high; with bluish colored flowers; appearing in winter; increased by cuttings; grown in peat, leaf-mould and sand. *Bot. Mag.*, 1857, pl. 4974.

A pretty species of the Begonia, flowering in the winter season. The leaves are long and narrow, and the underside is very ornamental from the bright red prominent veins. The flowers are pale colored, like the old *incarnata*. (*Bot. Mag.*, March.)

363. *SYMPHORICA'RPUS MICROPHYLLUS* *H. B. K.* MEXICAN SMALL-LEAVED SNOWBERRY. (*Caprifoliaceæ.*) Mexico.

A half-hardy (?) shrub; growing two feet high; with pink flowers; appearing in summer; increased by layers; grown in good garden soil. *Bot. Mag.*, 1857, pl. 4975.

A new and highly ornamental species of the common snowberry, from Mexico, where it was found on the high mountains, at an elevation of eight or nine thousand feet, and perfectly hardy in England. Whether it will prove so with us remains to be seen. If it will, it will be a treasure well worth possessing. In habit it resembles the common snowberry, but the leaves are much smaller, and the berries, which are not quite so large, are beautifully tinged with "a pink blush, which render the plant equally attractive in the autumn." It has been introduced to England for some time, but has never yet found its way into our gardens. (*Bot. Mag.*, April.)

364. *CAME'LLIA RETICULA'TA FLORE PLENO.* NETTED-LEAVED CAMELLIA, DOUBLE-FLOWERED VARIETY. (*Ternstroemia-cæ.*) China.

A greenhouse shrub; growing ten feet high; with crimson flowers; appearing in winter; increased by inarching; grown in peat, loam and sand. *Bot. Mag.*, 1857, pl. 4976.

This is the variety we briefly noticed a short time since: it is a new acquisition, sent home by Mr. Fortune, from

China, and flowered for the first time last year. It resembles, somewhat, the old and well-known parent, having the same large and showy petals peculiar to this species, but with twice their number, of a brighter color, and disposed with much greater regularity. It is a very showy plant, and will be a valuable acquisition to every collection.

The old *reticulata* we regret is not more generally cultivated. It is a magnificent thing when well grown, but its straggling habit has caused it to be neglected. A little skilful treatment will render it a fine shrub. In the garden of Mr. Martin, at Bank Grove, there is a plant filling an entire house. It is twenty feet high and sixty feet in circumference; and as long ago as 1849, it was necessary, one year, to remove 2600 buds, leaving 2000 to expand. When in full bloom it is a magnificent object, some of the flowers measuring eighteen to twenty inches in circumference. The new double flowered variety, grown in this way, will be a still more superb object. (*Bot. Mag.*, April.)

OUR ORNAMENTAL TREES.

BY THE EDITOR.

13. THE JUDAS TREE. (*CERCIS CANADENSIS*, L.)

AMONG our indigenous trees, so accurately described and figured in Michaux's beautiful *Sylva Americana*, it is somewhat remarkable that the author does not even mention the *Cercis canadensis*,—a tree distributed over an extensive range of country, from Canada to Virginia, and westward to Ohio. So distinct and really beautiful as it is, one would suppose it would be an especial object of notice, and form a fine subject for the pencil of Redouté, who painted the subjects for his elegant work. Neither does Nuttall, who, a few years since, continued Michaux's work, enumerate the *Cercis*. It is, indeed, the only indigenous tree of any beauty which appears to have escaped the observation of all except the

botanists, who have merely given a brief description of its flowers. Loudon, who is unusually complete in his information about every tree, scarcely more than mentions this, and the only authority he quotes is Decandolle's *Prodromus*.

Few of our smaller trees are more ornamental than the *Cercis*. Its rosy-red flowers appear before the leaves, in the latter part of May, and actually clothe every limb and branch, rendering it a most conspicuous object, and contrasting beautifully with the white flowers of the *Halesia*, the golden yellow of the *Carragana*, and varied colors of other shrubs. The tree is of handsome form, branching low, with a rather flattish parasol-shaped head. The foliage is medium size and silvery beneath, and the tree is loaded in summer with numerous seed-pods, which succeed the flowers, and remain upon the tree all winter, giving it a pleasing appearance at that inclement season. It is a good grower, is not liable to the attacks of insects, and must be ranked as one of the finest of our ornamental trees.



16. THE JUDAS TREE.

The Judas tree (FIG. 16) is indigenous from Canada to Virginia, and usually grows along the banks of rivers. In Canada, the flowers are used by the French descendants in salads and pickles, and the young branches to dye wool of

a nankin color. The wood of the European species (*C. siliquastrun*), the only one except our own, is very hard and agreeably veined, or blotched and varied with black, green and yellow spots, on a gray ground. Its flowers are also used by the French in the same way as the *C. canadensis*; but whether the latter possesses the other qualities of the foreign species is not known, as few writers, even Loudon, appear to supply much information about it. Mr. Emerson, who describes at length most of our native trees in his "Trees and Shrubs of Massachusetts," dismisses this with very brief remarks. It was first introduced into England in 1730, but has never been much cultivated. It is there considered more tender than the European species, although the latter, at the north, will only thrive in sheltered situations. The largest specimen around London, in 1835, was only ten feet high. The best specimen in the old Bartram garden is thirty-five feet high, and three feet six inches in circumference. It is far the handsomest species of the two.

As the Judas tree is a native of river banks, it requires a cool, moist and half-shady situation to see it in its full perfection, though it will grow readily and bloom freely in any good garden soil. It grows slowly, with a spreading top. The leaves are heart-shaped and pointed, of a deep green above and paler beneath. The flowers are small, pea-blossom shaped, of a deep purplish rose, and appear on the old wood as well as the new. These are succeeded by flat, thin brown pods, six or eight inches long, which contain the seeds, and which remain upon the trees through the winter.

It is easily cultivated, and may be readily raised from seeds, which should be planted either in the fall or spring, in light loamy soil, about an inch deep; and it is best to plant them in the pods, which should merely be broken to pieces. They vegetate in a short time, and, after one or two years' growth, the young trees should be taken from the seed-bed and transplanted into nursery rows, giving them the same attention as other seedling stock; in the course of three or four years they will be large enough to bloom, and may

be removed to the shrubbery, or where they are intended to remain.

As an ornamental tree of the smaller class, the *Cercis*, or red bud as it is sometimes called, deserves far more attention than it has received. The profusion of its deep rosy blooms, covering the naked stems, the early period at which they appear, the neatness of its foliage and the abundance of its brownish seed-pods, render it especially attractive, wherever a combination of these desirable qualities is needed for picturesque effect.

General Notices.

THE INFLUENCE OF THE SCION UPON THE STOCK.—No point in vegetable physiology is of greater interest to gardeners than the influence, if any, of the scion upon its stock; or *vice versa*. It is a common belief that when the graft of one pear is worked upon the stock of another, neither is the graft influenced by the stock nor the stock by the graft. When a peach is budded on a plum the plum-blood seems not to be mingled with that of the peach, nor the peach-blood with that of the plum. The peach is a peach and nothing less; the plum is a plum and nothing more.

Is this true? or are we here, as in so many other cases, led astray by our own blindness and inability to see what really exists. Perhaps so.

There is a green jasmine and a variegated jasmine. A part the green is always green. Budded with the variegated sort the whole system of the green sort is tainted, as it were, and breaks out into variegations. There is no conceivable explanation of this indisputable fact, except that the quality inducing variegation has been communicated by the one to the other. It is a true case of vegetable inoculation, using the word in its medical sense. Nor, indeed, can it be otherwise when we consider the facility with which the fluids of plants are transferred from one part to another. We may suppose that variegation is produced by some virus affecting the system of a plant; such a virus, or constitutional peculiarity, whatever it is, is certainly communicable.

A short memorandum by Mr. PURSER, in last week's *Chronicle*, has led to these remarks. Everybody now knows that what is called the purple Laburnum, or *Cytisus Adami*, is a laburnum that sometimes produces yellow flowers, sometimes purple ones, and sometimes bunches of the dirty yellow color that would be artificially formed by mixing purple and yellow on a pallet. In Mr. Purser's case the purple *Cytisus* (*Cytisus purpureus*,) was

grafted on the common laburnum. Widely different as the species are the one takes readily on the other. As soon as the union is effected the sap of the first begins to mingle with that of the second, and in a year or two the laburnum produces out of its own substance tufts of mere *Cytisus purpureus*, or bunches of flowers unchanged indeed in size and form but completely altered as to color.

Here then are two notorious cases, the history of each perfectly ascertained; in one case the sap of a variegated communicates the *variegation* to a green plant; in the other case the sap of a totally distinct species communicates to another not merely color, but form, size, and every other *specific attribute*. If then, in the two cases before us, such striking changes are producible, we are fully justified in assuming that similar changes, greater or less, will inevitably attend the union of any other two plants. We must regard such changes as resulting from some constant law, although we may continually fail to perceive its presence.

This being the case one of the most important of all inquiries in horticulture is the extent to which the diffusion and blending of the qualities of graft and stock really go. Not that the subject has been hitherto overlooked, but because we have as yet no such precise evidence as is demanded in a question of this degree of importance, gardeners are apt to think that any stock upon which a graft will take is sufficient for this purpose. No greater error could be committed; it has been pointed out in our columns on former occasions; but the practice of disregarding the stock prevails extensively, and no series of experiments, carefully continued and conscientiously recorded, has as yet been brought to bear upon it.

In the *Theory and Practice of Horticulture*, (p. 356) the subject has, indeed, been introduced, and some evidence upon it collected, as will appear from the following extract:—

“Since the quality of fruit is thus affected by the stock, it seems allowable to infer that the goodness of cultivated fruits is deteriorated by their being uniformly worked upon stocks whose fruit is worthless; for example, the almond or the austere plum can only injure the peaches they are made to bear, the crab the apple, and so on. On the other hand, if trees of excellent quality were used for stocks they ought to improve the fruit of the scion that is worked upon them. Some German writers, proceeding upon such reasoning as this, recommend gardeners to practice the art of ‘ennobling’ fruit trees by taking the best varieties for stocks instead of the worst; and they assert that, by such means, the excellence of fruit is greatly increased. Trefez is represented by Meyer, as translated in Taylor’s Magazine, to have made known, as long ago as 1803, several instances of ennobling, from which it appears that apple trees twice ennobled bore fruit of distinguished excellence: currants and gooseberries improved after one ennobling, and much more so after the operation had been repeated three or four times. An apicot is said to have been worked on a Green Gage plum, and a quince upon the Autumn Bergamot pear; the apicot became as juicy as the Green Gage, and far more delicate; the quince was much more tender and less gritty.”

Is there no one in this country with the necessary leisure and address to verify these statements, which at present stand unconfirmed although uncontradicted. Surely, considering how much hybridizing has done for us, the question now proposed, which is second to nothing in importance, can hardly fail to meet with the same zealous and skillful examination.—(*Gard. Chron.*, 1857, p. 400.)

EXHIBITION OF THE LONDON HORTICULTURAL SOCIETY.—The great horticultural experiment of the season has been tried. The question whether the attractions of Chiswick could be revived has been answered in the affirmative; and those who fancied that the Horticultural Society was dead and buried have met with an agreeable surprise. Never before has a finer or more varied mass of plants been collected on that celebrated ground, nor have they, on any former occasion, been so well displayed. The garden too was in a state of unusual beauty; no late frosts had ruined the tender foliage of spring; the turf was green and soft, gay flowers in abundance met the eye in all directions, and the alterations made with so much taste by Mr. M'Ewen in what is called the American garden, although but six weeks old, were quite in a condition to be appreciated. Rhododendrons and azaleas were glowing with crimson and yellow and purple and white in all directions, and left no room for doubt, on the part of the most indifferent spectator, that if American plants are to be seen in perfection it is not by crowding them under canvas so as to reduce their beauty to the level of a childish "peepshow," but by displaying them in the free air, to the bright sun, arranged as they would be where Nature is the artist.

The principal changes in the arrangements of the exhibition were the conversion of the large conservatory into an exhibition hall, and the display of roses and some other plants without tables. The conservatory was fitted up with stages on each side, between which along the middle passed a gravel walk, ending in a semicircular mass of noble plants remarkable for their fine foliage, contributed by Messrs. Veitch. On one side were orchids in great profusion, among which a collection from Mr. Rucker, in wondrous beauty, stood preëminent. His *Lælia cinnabarina* and *Lælia purpurata* excelled anything we had seen before: while a beautiful specimen of *Saccolabium curvifolium*, a very difficult plant to manage, and a noble example of that large form of *Aerides crispum* which Dr. Wight calls *Aerides Lindleyanum*, bore testimony to the great horticultural skill of Mr. Rucker's gardener. On the left of the entrance were superb specimens of ferns, among which we venture to single out *Gleichenia flabellata*, from Mr. Parker, of Hornsey, as the finest species in the garden, or perhaps in cultivation. We did not suppose it possible to have brought the plant to such perfection. In the conservatory, too, were displayed all the new plants of any importance, and among these were some of very unusual interest. First stood the *Thujaopsis dolabrata* from Messrs. Veitch, described in last week's columns, and *Abies Kämpferi*, the Kin-le-sung or Golden Fir of China, from both Messrs. Veitch and Mr. Glendinning, two new hardy trees that claim rank with *Abies Douglasi*, *Pinsapo*, *Wellingtonia*, and the other

princes of that noble race. Less interesting than these, only because hardy trees are of more importance than hardy herbaceous plants, were magnificent specimens of that *Farfugium grande* which we have so often described already as a noble acquisition, placed by Mr. Fortune in the hands of Mr. Glendinning. After these came many fine things, chiefly from Messrs. Veitch, especially an extremely pretty *Thibaudia* with globular crimson flowers melting into snow white at the tips; a hardy blue California *Ceanothus* called *Lobbii*, somewhat resembling *C. papillosus*; *Rhododendron Veitchi*, the very handsome new species which gained a first class prize in Regent street a few weeks since; a most beautiful *Pernettya*, loaded with myriads of white blossoms like little hailstones: and a stately *Grevillea* called *Drummondii*, these were in flower. Other novelties, merely shown by Messrs. Veitch for their foliage, were a couple of species of *Theophrasta*, *Hippomane spinosa*, and *Rhopala skinneri*, capital plants of their class, and a purple leaved variegated twining *Cissus* which promises well. *Chysis Limminghi*, a very pretty orchid with white flowers striped with purple, came from Messrs. Backhouse of York, and a large leaved majestic *Melastomad* called *Cyanophyllum magnificum*, second to none in beauty, appeared from Mr. Linden.

Roses were disposed under a large tent in circles formed on the lawn, and surrounded by a deep turf border, and the effect thus produced was charming. Let the lovers of florist's *Pelargoniums* say what they will the "fancies" still stood first in the opinion of spectators; and most beautiful things they were; none however quite so handsome as the new Belgian *Avenir* must be, if any faith is to be placed in colored drawings.

Fruit was scanty, but good; and the vines in pots contributed by Mr. Forsyth, gr. to Baron Rothschild at Gunnersbury, and Mr. Iveson, gr. to the Duke of Northumberland at Syon, gave considerable beauty to the tables. Vegetables, as a branch of the exhibition, were a total failure; although a few good examples were seen among them.

The manufacturers' department conduced, as we always anticipated, very much to the interest of the day. Vases, baskets, and stands filled with gay flowers profusely distributed over and along the principal walks, and richly filled with flowers, produced the happiest effect. Numerous tents, white, grey, striped, and brown, of various patterns, were pitched upon the lawn; while in other places collections of tools, engines, machines, glass ware, protecting materials, beehives, boilers, and all sorts of heating apparatus, cement work, &c., were arranged in groups without cover, or under tents, or in some of the pattern greenhouses erected for exhibition on this occasion. To all these we hope to revert in considerable detail next week. For the present we confine our remarks to the announcement that the general public has free access to the society's garden for a week, so as to afford ample opportunity for every one to study these manufactured articles, which to be appreciated must be carefully examined; and that a catalogue with full descriptions of most of the articles, is on sale in the garden.

During the afternoon the grounds of Chiswick House, which were in all their beauty, were a scene of great attraction, His Grace the Duke of Devon-

shire having thrown them open to the society's visitors with his accustomed kindness and consideration.—(*Gard. Chron.* 1857, p. 399.)

CRYSTAL PALACE HORTICULTURAL FETE.—This took place on Saturday, the 30th of May, when the display of plants, whether shown for the beauty of their leaves or flowers, was most extensive. Double benches of them occupied the centre transept, in front of the orchestra, and the nave, right and left, afforded suitable accommodation for the rest. Nothing could possibly exceed the beauty and charming variety of the fine foliaged plants, of which Messrs. Veitch and Parker had magnificent collections, and of which dense masses lined the tables for seventy yards in length. Orchids, which were, as a whole, well flowered and otherwise in excellent condition, occupied more than half that amount of space; and stove and greenhouse plants, to which familiar names were attached, and which did credit to their respective exhibitors, filled a stage, three rows deep, quite 360 feet in length. Of Cape Heaths—all fine specimens—there were not less than 39 yards, Indian Azaleas 71, and Ferns and Lycopods 62. The Azaleas, it may be observed, were here, as at Regent's Park, comparatively small plants; the display they therefore made was not so striking as we have seen it in former years. To this remark, however, the collections of Messrs. Green and Carson formed glorious exceptions; these were large and fine specimens, beautifully flowered. Of what are termed florists' flowers, the numbers were also proportionately large. Pelargoniums formed a bank literally covered with flowers, 210 feet in length; Fuchsias and Calceolarias filled 138 feet; and of Roses it is impossible to say too much—the whole of the collections, occupying a space some 31 yards in length, consisted of first-class plants. The exhibition from Messrs. Paul, especially, was grand in the extreme; it contained kinds widely different from each other in color, a point too often overlooked by rose exhibitors in general.

Among what were called new plants, Messrs. Veitch showed some fine things, as did also Mr. Glendinning, Messrs. Jackson of Kingston, Messrs. Henderson and others; these, however, and nearly all the other plants shown on the occasion, were reproduced at Chiswick on Wednesday and Thursday, June 3d and 4th—a full account of them will therefore be found in the report of that meeting.

Fruit was shown, but, with one or two exceptions, it was neither above mediocrity in quality or quantity. The best Queen Pine, beautifully ripened and finely colored, but comparatively small, came from Mr. Bailey, Shardloes. A good Providence was shown by Mr. Davis, but none of this class of Pines were first-rate. Of Jamaicas there were one or two fair fruit. The best Black grapes (Hamburgh) came from Mr. Frost, gardener to E. L. Betts, Esq., and Mr. Fleming, gardener to the Duke of Sutherland at Trentham. These were both beautiful exhibitions, especially the bunches from Mr. Frost, whose berries were unusually large. Mr. M. Henderson sent some good Grizzly Frontignans. White grapes were wholly unripe, and should have been excluded from receiving prizes. Pot vines were not good. Of peaches and nectarines there were thirteen dishes. Mr. Hill showed

Royal George peaches and Violette Hâtive nectarines; Mr. Busby had some well ripened Elruge nectarines, and Mr. Constantine Royal George peaches. Of cherries Mr. Fleming had fine dishes of Black Circassian, Elton and May Duke. By far the best strawberries came from Mr. Smith of Twickenham, who had British Queens which, for size and color, could not possibly be excelled. Good samples of Nimrod came from Mr. Turnbull, and Mr. Frost sent Kitley's Goliath, Victoria and British Queen. We noticed one dish of good figs from Mr. Hutt, gardener to Miss Coutts. Of melons there were fifteen; the best was Bromham Hall. Some good citrons were furnished by Mr. Williams, and we noticed some white raspberries in pots—low bushes, well covered with fruit.—(*Gard. Chron.*, 1857, p. 401.)

NEW AMERICAN ROSE.—At an exhibition of the London Horticultural Society, April 7, the show of roses in pots, was extremely fine; among the kinds was a new one from South Carolina, which promises to be a superior flower. It is remarkable that our own cultivators should know nothing of such a variety. The account we copy as follows:—

Roses worthy of June came from Messrs. Paul and Son, and Mr. Ingram, gr. to J. J. Blandy, Esq. Among them were beautiful blooms or rather buds of the brilliant crimson scarlet, General Jacqueminot; also Jules Margottin, Madame Fremion, Prince Leon, and other favorite sorts. Of yellows there were Gloire de Dijon, Vicomtesse Decazes, and Mrs. Siddons. Whites and delicate pinks consisted of Devoniensis, Nephets, Souvenir de Malmaison, and Mrs. Bosanquet. A bouquet of the pale yellow rose called Ochroleuca from Mr. Snow, gr. to Earl de Grey, was the admiration of the room. It was gathered from a plant in a pot which was stated to have 43 blooms on it. From the perfect condition of the specimens shown, the beauty of a plant so loaded with flowers may easily be conceived. Among this class of plants however the great attraction was a new deep yellow climbing Tea rose from South Carolina. This was furnished by Mr. Low of Clapton. The plant exhibited was unfortunately not in good condition for showing, having got greatly injured from travelling; it however indicated what a fine thing it is. It had upwards of 40 blooms on it, large and double, and nearly as fine in color as that of the old double yellow, which nobody can flower. This new sort must therefore be regarded as a great acquisition should it continue to be a free bloomer. It is called Isabella Gray, and it was mentioned that as there are two or three Miss Grays now in cultivation in this country whose merits have not yet been proved, persons desirous of obtaining this plant ought to take care to get the sort now produced.—(*Gard. Chron.* 1857, p. 255.)

GRAFTING MOUTANS, (Tree pæonies.)—The following directions are to be found in Fortune's Journey to the Tea countries of China. "In the beginning of October large quantities of the roots of an 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 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 2 inches in length, and is the point of a shoot formed during the bygone summer. Its base is cut in the form of a wedge, and inserted in the crown of the finger-like tuber. 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 $1\frac{1}{2}$ feet apart, with the same distance between the rows. In planting, the bud or point of the scion is the only point which is left above ground; the point between the stalk and scion, where the incision is destined to take place, is always buried beneath the surface. Kämpfer states that the Chinese propagate the Moutan by budding; but this must be 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 attest 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 rarely later than the second, when they are dug up and taken to the market for sale."—(*Gard. Chron.* 1857, p. 344.)

Gossip of the Month.

NATIONAL FIELD TRIAL OF MOWERS AND REAPERS.—The first national trial of mowers and reapers, under the auspices of the United States Agricultural Society, will take place at Syracuse, N. Y., on the 13th of July. Already upwards of *seventy* entries have been made, and the trial promises to be one of great interest to the agricultural community in making known, among the variety of machines of recent invention, which can perform the best and greatest quantity of work in the shortest time.

STRAWBERRIES IN WASHINGTON, D. C.—I have some very strong plants of Peabody's Hautbois strawberry, with young plants taking root. If you have not that variety, and would like to have it, I will send you some. It is a vigorous plant and is showing fruit, although planted out in April. Prince's Maginate promises to be a splendid variety with me.

Hovey's Seedling still maintains its supremacy, over all other varieties, with me. It is, in my estimation, equal to all others taken together. Some may exceed it in size, others in productiveness, but they are defective in other essential points.—*Yours*, J. H. BAYNE, *Washington, D. C., June, 1857.*

STRAWBERRIES IN BALTIMORE.—The season is unusually late. The first gathering of strawberries, two miles north of this, was on the 8th. This fruit has not been so late in ripening since 1842. [The Boston Pine and Jenny Lind are usually ripe here on the 10th,—this year on the 18th.—Ed.]

I find, on examining my strawberries this season when in bloom, that my old beds of Hovey's Seedlings, procured from you some sixteen or eighteen years since, have preserved their characteristics of sex. Out of eighteen or twenty varieties now under culture, I prefer McAvoy's Superior, extraordinarily productive, and Hovey's Seedlings for pistillates—and the largest, most productive and highest flavored variety as a staminate is Le Baron.—*Yours*, W. C. W., *Baltimore, June, 1857.*

UNITED STATES AGRICULTURAL SOCIETY.—The fifth national exhibition of this society will be held in the city of Louisville, Ky., on the 1st, 2d, 3d, 4th and 5th of September next. The schedule of prizes has been published. It is similar to that of last year at Philadelphia. Fruits, vegetables, &c. are included, and the total premiums amount to twelve thousand dollars. We shall copy the prizes for fruits in our next number.

MR. COPE'S COLLECTION OF PLANTS was entirely disposed of on the 20th of May, and they were very generally dispersed. The only class of plants which were sold together were the cactuses—these were bought by Mr. Thomas Meehan, our correspondent, and the former gardener to Mr. Cope. He paid \$400 for the entire collection. The camellias sold very low,—*C. Landrethii*, purchased at Landreth's sale a few years ago for \$45, sold for \$19. The whole collection of plants realized little short of \$4000—a rather small sum for such specimens as Mr. Cope's. The principal purchasers were from Baltimore. The Philadelphia amateurs seem to have lost much of their zeal in making fine collections, if we may judge from this sale.

Massachusetts Horticultural Society.

Saturday, April 4, 1857.—The stated quarterly meeting of the Society was held to-day,—the President in the chair.

The President announced the names of the Committee to take into consideration the resolution brought before the Society at the last meeting, viz.: S. Walker, E. Wight, E. S. Rand, Jr., and D. T. Curtis, chairman of the several standing committees, with the President as chairman.

The Committee of Arrangements reported that the next Annual Exhibition would be held on Wednesday, Sept. 22, and continue till Saturday.

W. H. Ryder, Roxbury, Wm. Ashby, Newburyport, and J. McTear were elected members.

Adjourned four weeks, to May 2.

May 2.—An adjourned meeting was held to-day, but no business coming before the Society it was adjourned five weeks, to June 6.

May 23.—*Exhibited.* FLOWERS: From J. A. Kenrick, *Magnolia Soulangiana*. From P. Barnes, 12 pots of fine pansies. From J. McTear, *Azalea Gledstanésii*, *Aphelexis sesamoides*, (new and fine,) *Erica mutabilis*, *E. Bothwelliana*, *E. ventricosa superba*, and cut verbenas. Cut flowers, in variety, from J. Murray, Mrs. Wm. Ashby, W. J. Underwood, E. S. Rand, Jr., Miss Russell, F. Winship, Galvin & Hogan, and F. Bundy.

AWARD OF PREMIUMS AND GRATUITIES.

PANSIES.—For the best, to P. Barnes, \$4.

GRATUITIES.—To J. McTear, for *Aphelexis* and display of plants, \$4.

To Galvin & Hogan, for *Polyanthus*, and J. Murray, for flowers, \$1 each.

To F. Bundy, for *Arum*, \$2.

May 30.—*Exhibited.* FLOWERS: From the President, a fine display of Tulips. From J. McTear, *Pelargonium triste* and other plants. From Hovey & Co., fine Tulips. From W. C. Strong, *Clématis languinosa*. From T. G. Whytal, 27 plants of *Verbenas*, *Calceolarias*, &c., a fine display. Cut flowers were also contributed by F. Winship, E. A. Story, E. S. Rand, Jr., J. O. Williams, Miss Russell, J. Murray, Dr. E. G. Kelley, J. Beegan, Mrs. Wm. Ashby, A. Bowditch & Son, J. W. Foster, J. A. Kenrick, and others.

AWARD OF PREMIUMS AND GRATUITIES.

TULIPS.—For the best thirty flowers, to J. S. Cabot, \$5.

For the second best, to Hovey & Co., \$4.

GRATUITIES.—To F. Winship and J. McTear, for flowers and plants, \$2 each.

To T. G. Whytal, for collection of plants, \$3.

To J. Murray, E. A. Story, J. W. Foster, J. Beegan, Miss Russell and A. Bowditch & Son, \$1 each, for flowers and plants.

June 6.—An adjourned meeting of the Society was held to-day,—the President in the chair.

Wm. Lawton, Brookline, and Newell Harding, Boston, were elected members.

Adjourned four weeks, to July 4.

Exhibited. FLOWERS: From J. S. Cabot, very fine Peonies. From F. Winship, Azaleas, Hawthorns, Fuchsias, Pansies, Peonies, Roses, Verbenas,

Iris, &c., a fine display. From J. Murray, Roses, Peonies, Pinks, Fuchsias, Aquilegias, Erica, *Cobæa scandens*, &c. From E. S. Rand, Jr., Verbenas, Pelargoniums in variety, Aquilegias, Fuchsias, Polemonium, Hawthorns, Iris, Tropæolum, &c. From E. A. Story, Hawthorns, Spireas, Azaleas, Peonies, Parias, &c. From J. Breck & Son, fine Peonies. From M. P. Wilder, 125 flowers Peonies, (very fine,) Dielytra, Hardy Azaleas.

From Hovey & Co., Peonies, very fine Hardy Azaleas. From W. E. Carter, Iris, Peonies, Dodocatheon, (fine.) Trollius, Azaleas, Spireas, Ranunculus, double white (rare) Lilacs, &c. From J. McTear, Fuchsias, Azaleas, Verbenas, Alonsoa, &c.; Erica reflexa (fine.) From J. Waterhouse, Verbena, French's Defiance. From J. W. Foster, Verbena Imperatrice Elizabeth. From J. A. Kenrick, Aristolochia siphon, Hawthorns, Peonies, Wistaria sinensis, Tamarisk, Magnolia purpurea. From C. Copeland, Dielytra, Pansies, Fuchsias, Verbenas, Roses, Azaleas, Euphorbia, Pelargoniums, Lilaes, Heliotropes, &c. The committee regret that this fine display was not arranged by 11 o'clock, as they were thus unable to award the gratuity which the excellence of the flowers merited. Bouquets from E. A. Story and Anna C. Kenrick.

AWARD OF PREMIUMS AND GRATUITIES.

PEONIES.—For the best six flowers, to M. P. Wilder, \$5.

For the second best, to J. Breck & Son, \$4.

For the third best, to Hovey & Co., \$3.

To J. S. Cabot, (not competing for premium,) for very fine specimens, a gratuity of \$3.

HARDY AZALEAS.—For the best display, to Hovey & Co., \$6.

For the second best, to F. Winship, \$4.

For the third best, to M. P. Wilder, \$3.

HAWTHORNS.—For the best display, to F. Winship, \$3.

For the second best, to E. A. Story, \$2.

GRATUITIES.—To E. A. Story, J. Murray, F. Winship, J. McTear, and J. A. Kenrick, \$1 each, for display of flowers.

To W. E. Carter, \$2, for fine display.

To Anna C. Kenrick, for basket of flowers, E. A. Story, Jr. for bouquet, and J. McTear, for Erica reflexa, \$1 each.

June 13.—Exhibited. FLOWERS: From the President, a fine display of Iris. From Hovey & Co., a fine display of Rhododendrons. Cut flowers and bouquets, from Galvin & Hogan, J. Murray, J. Breck & Son, F. Winship, J. Nugent, J. A. Kenrick, J. Cruikshanks, Mrs. W. Ashby, E. A. Story, C. Copeland, J. McTear, T. G. Whytal, Miss A. Kenrick, Miss Russell, E. A. Story, Jr., and P. P. Ware.

AWARD OF PREMIUMS AND GRATUITIES.

AQUILEGIAS.—For the second best display, to Mrs. Wm. Ashby, \$2.

For the third best, to F. Winship, \$2.

First prize not awarded.

SPIRÆAS.—For the second best display, to Hovey & Co., \$2.

First prize not awarded.

GRATUITIES.—To J. Murray, J. Breck & Son, Jas. Nugent, C. Copeland, and F. Winship, \$2 each.

To J. A. Kenrick, J. Cruikshanks, E. A. Story, E. A. Story, Jr., and J. McTear, \$1 each.

To T. G. Whytal, \$3, for a collection of plants.

June 20.—*Exhibited.* FLOWERS: From Hovey & Co., twenty varieties of Peonies, including several very rare kinds, among which were the following, which obtained the prize: Prince Prosper d'Aremberg, Reine des Francais, Hericartianum, sulphurea, Pottsii, Dr. Brettoneau, grandiflora nivea plena, papaveracca, Ne plus ultra and Festiva maxima.

Peonies and cut flowers in variety were contributed by M. P. Wilder, Jos. Breck & Son, A. Bowditch, J. Murray, F. Winship, E. A. Story, W. E. Carter, J. McTear, J. Dunklee, J. A. Kenrick, Miss Russell and others. From T. G. Whytal, a fine specimen of Fuchsia Venus de Medicis.

AWARD OF PREMIUMS AND GRATUITIES.

HERBACEOUS PEONIES.—For the best ten varieties, to Hovey & Co., \$5.

For the second best, to M. P. Wilder, \$4.

For the third best, to J. Breck & Son, \$3.

PINKS.—For the best six distinct varieties, to J. Breck & Son, \$5.

HERBACEOUS PLANTS.—For the best display, to P. Barnes, \$6.

For the second best, to F. Winship, \$4.

For the third best, to Evers & Co., \$2.

GRATUITIES.—To A. Bowditch & Son, James Murray, and F. Winship, \$2 each.

To J. Breck & Son, Hovey & Co., M. P. Wilder, E. A. Story, W. E. Carter, Miss S. A. Kenrick, J. McTear, and T. G. Whytal, \$1 each, for cut flowers, &c.

Gorticultural Operations

FOR JULY.

FRUIT DEPARTMENT.

So far, the season has been cool and moist. Though but little rain has fallen the last fortnight, the continued dull weather and cool easterly winds have prevented the rapid evaporation which takes place under our summer sun. Vegetation is still backward, and the early fruits ripen very slowly. The thermometer has not yet ranged above 85°, and only a few days as high as that, while the evenings have been very cool.

GRAPE VINES, in early vineries, are still at rest, and will remain so till next month. Keep the house open night and day, and look after insects, should they attack the vines. Grapes in the greenhouse will now begin to color, and will need more care. If not thinned sufficiently, cut out such berries as crowd too much. Keep the laterals stopped, and give air both

night and day, increasing the quantity as they advance to maturity. Discontinue damping the house the last of the month. Vines in the coldinery will now require thinning; attend to it carefully, and shoulder all large clusters. Give air freely in good weather, but close up early in the afternoon. Out-door vines may now have a little pruning, by thinning out the superfluous wood, and shortening in rank-growing shoots. Mulch and water, if dry weather.

STRAWBERRY BEDS which have had their crop all gathered, should be dug between the rows, to make room for fresh layers. Prepare ground for making new beds in August, and keep new plantations, made in April or May, clear of weeds.

SUMMER PRUNING should be continued all the month, as we have advised in a previous page.

RASPBERRIES, as soon as the fruit is gathered, should have the old stems cut away, that the fresh young shoots may have abundant room to grow.

PEACH TREES in pots, now ripening their fruit, should be more sparingly watered.

BUDDING should be commenced the last of the month, if the weather is dry.

INSECTS should still receive attention. Oil soap, administered in season, is sure to exterminate many of the most destructive kinds.

FLOWER DEPARTMENT.

All the principal labor of planting, &c. being over by July, there will be more leisure to look about and attend to many things which the hurry of spring would not admit of. As the various plants come into bloom, they should be examined, to see if they are correctly named, that a stock of the best things may be preserved. Rare plants or choice specimens, intended for next winter's blooming, which may have been neglected, should now receive due care. Runners of all kinds, either upon the rafters or on trellises, should be regulated and kept in order. Prepare soil for potting next month.

CAMELLIAS should be removed to the open air at once, if not already done. Choose a half-shady and rather sheltered situation. Keep them well syringed and moderately wet. Any that need it, should be repotted this month.

AZALEAS may soon be removed to the open air, in a half-shady place. See that they are not infested with the thrips or red spider.

PELARGONIUMS should be headed down this month, and cuttings put in for fresh stock. Keep the old plants rather dry for a week or two after pruning.

CINERARIAS should be propagated now, by dividing the old roots. Protect in a frame till well rooted.

CHINESE PRIMROSES, raised from seed, should be potted off and protected in a cool frame. The double kinds may be propagated from cuttings.

ROSES may now be increased by layers or cuttings.

CALCEOLARIA SEEDS may be planted this month.

CHRYSANTHEMUMS should be topped, to make compact, bushy plants. Repot and plunge in the open ground.

DAISIES should be divided, and reset in a cool, moist situation.

FUCHSIAS should be repotted, if fine, large specimens are wanted.

GLOXINIAS AND **ACHIMENES** may have a shift into larger pots, if growing vigorously. Put in cuttings of the leaves, if young plants are wanted.

LANTANAS, for winter blooming, should be repotted and plunged in a warm border.

CACTUSES should now be repotted, and be pruned into shape. Water liberally at this season.

GREENHOUSE PLANTS, of all kinds, will need attention. Many will require repotting, and others only top-dressing. Such as are ill-shaped should be headed in, so as to make good specimens. Keep down the red spider, and syringe often in warm, dry weather.

FLOWER GARDEN AND SHRUBBERY.

Nothing is now required but attention, to have everything in the finest condition about the garden and pleasure grounds. The labor of planting being nearly over, all the leisure should be devoted to keeping neatness and order throughout. Lawns and grass edgings should be cut every ten days or fortnight, the walks rolled, and the borders raked. Clip box edgings and hedges. Tie up herbaceous plants and tall growing annuals, and cut away such as have done blooming, if it can be done without injury to the plants. Look after insects, and stop their ravages as far as possible.

TULIPS, and other spring flowering bulbs, should be taken up immediately, and placed away in a dry room. Reset the beds with asters or annuals from the reserve garden, or with verbenas or bedding plants, which will make a fine display in August and September.

DAHLIAS should be tied up to stakes; keep them pruned of superfluous laterals, and water liberally if the season is dry.

DAISIES AND **POLYANTHUSES** should be divided and reset, selecting a half-shady situation.

ROSES should be budded and layered this month.

CARNATIONS may be layered as soon as they have done blooming.

SEEDLINGS, of perennials and biennials, should be transplanted into beds, where they can grow till time for removal to the borders, in October.

NEAPOLITAN VIOLETS should be freely watered in dry weather.

ANNUALS, in frames or boxes, should be set out in vacant places in the flower border.

GLADIOLUSES should be neatly tied up to stakes.

HOLLYHOCKS should be freely watered as they come into bloom.

PORTULACAS, set out now, will make a fine show all the autumn.

SAVE SEEDS of rare and choice plants.

MIGNONETTE, planted now, will bloom throughout the autumn months.

PANSY SEED sown now, will make fine plants for early spring bloom.

GATHERING AND RIPENING THE EARLY FRUITS.

IN our last volume we detailed our experience in regard to the keeping of winter fruits, more particularly pears, and though our doctrines were somewhat at variance with the popular or rather current notions upon the subject, we have been highly pleased to learn, from many amateurs and fruit growers, both by letter and verbally, that, until reading our article, they had been wholly unable to keep some of the early winter pears in anything like the perfection they attained under our mode of treatment. It has had, we believe, the effect of setting our cultivators to thinking upon the matter, and of experimenting for themselves, the only way of satisfactorily settling the question ; for to follow implicitly the directions of foreign writers, without considering the different condition under which the fruits are grown, is to admit tacitly that we have no views of our own to govern us in our practice. We are always ready to adopt that which is correct, whether old or new ; but upon a subject of so much importance, and with the experience of the few who have given it close attention, it is best that we should try experiments ourselves, that we may know the *rationale* upon which our operations are based.

The ripening of the earlier fruits differs somewhat from the later, and in our warm climate requires considerable attention to have them in the best condition ; more than in the cool temperature of Great Britain, where fermentation does not progress with the same rapidity as with us. Take the Bartlett pear, for instance. In Covent Garden market we purchased, repeatedly, fine specimens as green as when they were picked from the tree, and yet they were sound, melting and good ; but with us they immediately acquire a rich yellow hue, and if not eaten very soon after being gathered, become soft at the core. So, too, with the Jargonelle, which, in the English climate, is such a fine pear ; but, under

our August sun, it ripens too rapidly; if allowed to hang till full grown it will be quite rotten at the core, and if picked too early it will have an astringency which is unpleasant. Maturation is so accelerated that it is scarcely possible, only in cool seasons, to have it in fine order, when it is certainly a very excellent pear. Such being the variation in a few varieties it is of some importance to inquire what rules should be followed in gathering not only our summer and early autumn pears, but other fruits of the season.

If we were to judge from what we find in our markets, we should suppose that very little if any of the fruit usually offered for sale was more than two thirds ripe; certainly of the larger kinds, such as apples, pears, peaches, plums, &c., only a very small proportion is sold in a mature and eatable condition. Occasionally we notice some full-grown, well-ripened and handsome specimens; but this exception is so rare that it amounts to scarcely anything, in the aggregate, of the immense quantity needed to supply the demand.

All this arises from the ignorance or carelessness of the producer. The intelligent cultivator knows that handsome, well-ripened specimens always command a ready sale, at the very highest prices, while that of inferior quality is not only disposed of with difficulty, but the price will scarcely pay for the labor of marketing. Still, where the quantity raised is large, the gathering is entrusted to inexperienced persons, no convenient place for storing and ripening is at hand, and the fruit is hurried off to market as the readiest means of disposing of it, leaving to the purchaser the labor and care of assorting and preparing of it for sale. Here again there are rarely the proper means of storing and ripening; it soon becomes heated and more or less decayed, and is sold off in such condition, that not one quarter of it is fit to be eaten.

It would be about useless to attempt to reform the abuses of our fruit market; they will always exist: yet, by occasionally calling attention to them, there may be some improvement, especially among the intelligent who are commencing the culture of fruits, and particularly among our amateurs, who send the surplus products of their gardens and orchards

to market. If they wish to have no trouble in disposing of what they raise let it be fully grown and quite ripe ; otherwise they will not receive enough to pay for the gathering. To the zealous cultivator, it is more satisfaction to see a tree bearing a dozen or two fine large specimens than loaded down with a half bushel of small and inferior fruits, aside from the injury the tree is sure to sustain from such a crop. When fruit raising is made a *speciality* by those who understand the subject, as it is in the neighborhood of London, we then hope to see a supply of the best quality offered, and in the right condition to be eaten.

Something might be said in regard to the gathering of the smaller fruits, such as strawberries, cherries, raspberries, &c., but generally the indications of maturity are so apparent that few can err with these. A moderate degree of judgment and some little knowledge of the varieties under cultivation, may be necessary to gather just at the right moment ; but, with the exception of the blackberry, the color is a sufficient guide. It is almost needless to say, that the sooner these fruits are eaten after they are gathered, the fresher and richer will they be. The confinement of a few hours and the carriage of a few miles, destroys in a great degree that fine aroma upon which their excellence depends. The blackberry, however, assumes its darkest color long before ripe, and except to experienced persons it is difficult to tell the period of maturity. If gathered too soon, it is scarcely fit to eat. The only way to ascertain the proper time of picking is by the touch. If the berries part readily from the stem with the least pressure, they are ripe. But as this is a slow method of gathering we think it best to cover the ground with clean straw, so that they can be shaken off gently and then be picked up. It is such a delicious fruit, when fully ripe, that it will repay all the care necessary to secure the berries in perfection.

Among the large fruits we commence with what we consider the most important and least understood, namely,

PEARS.—It is not many years since we had over a dozen varieties of summer and autumn pears, and even some of

them were of little value compared with what we now possess. If they were not ripened carefully it was not of much consequence, as their main excellence depended less upon their flavor than their texture; if only soft and mellow, they were esteemed good fruit, and found a ready sale. But with the advancement in horticulture these things have changed; we have now varieties possessing a rich and delicious aroma, and a melting or buttery flesh, which need more care in ripening to retain these in the highest perfection. We know it is a common wish that all our pears should ripen on the tree, or, if not on the tree, without much trouble: this, we fear, will never be realized, but that, on the contrary, the further we advance in excellence the more care our fruits will be likely to require. The culture of the newer and better sorts is still limited, and both the time of gathering and the mode of ripening not well understood, for each variety requires a peculiarity of treatment different from the other. Time only will therefore enable us to learn how to have them in their best order. Some sorts retain their fine qualities for several days, while others keep but a very short time. It is consequently difficult to decide upon just the right time for gathering some of the varieties; it must be ascertained by experiment. Still, if we know the general principles of picking and keeping we may be enabled to secure a crop when we otherwise might lose it. It should be distinctly understood that no summer pear should be allowed to ripen on the tree; there is no exception to this rule. There are a few which are barely eatable, but in most instances they are nearly worthless. Some become as dry and mealy as a baked potato, and not near so good; while others rot at the core, though seemingly sound on the surface. It is because most of the summer pears are allowed to ripen on the trees that many of the best varieties have been pronounced unworthy of cultivation. We have ourselves been astonished at the difference of quality in some pears which had been picked only a day or two earlier or later than others; and this difference long since induced us to try experiments with several of the more capricious

kinds. With one new variety we were quite puzzled to hit upon the exact period of gathering; one year we picked them very early, but as they had not attained their growth, though juicy and good, they were quite astringent: the next year we gathered a few every three days till the last were fully ripe on the tree, and by this means were enabled to ascertain the right period. Those left on the tree until they were yellow, were dry, flavorless and scarcely eatable; while those gathered about ten days previously were deliciously melting and rich. Experiments with other kinds resulted in fixing the period of gathering the August pears, for house ripening, from ten to fourteen days, though much depends on the season, vigor of the tree, &c. The only requisite is that the fruit should have attained its growth, and the sooner it is picked afterwards the better. This may be known to the cultivator by the change which takes place in the appearance of the fruit. Some of the defective specimens will turn yellow and drop, while the others will assume a smoother and paler surface; the coloring on the sunny side will be brighter, and the stem will become swollen, particularly at the junction with the tree. These indicate that the period of maturity is approaching, and the fruit may be gathered and ripened.

The ripening is a process as little understood as the period of picking, and various directions have been given on this subject by different writers, some advising it to be spread out upon shelves in the fruit room, and others to be kept in boxes or drawers, excluded from the light and air. We have found that very few early pears will ripen well when exposed to the air on open shelves, even in a tolerably close fruit room. At this season of the year the atmosphere is too dry, and the currents of air too great, and the juices are too rapidly exhausted. It is far better to place the fruit in boxes of moderate size, and let them stand in the fruit room or some other cool and rather dark place, where they retain their juices better than if exposed on shelves. We have tried this experiment and found that those fruits kept in small quantities in a drawer, shut out from the light, were

more juicy, higher flavored, and more delicious than when preserved in other ways. As a general rule, we should advise all early pears to be placed in boxes or drawers, covered with one or two thicknesses of paper, and kept excluded from light and air, where the temperature is cool and as even as possible at that season. A damp, cool cellar is not so favorable a place as a cool, dry room, as the former checks the ripening process too suddenly; such a situation will do for the autumn and winter pears, but not for the early kinds.

APPLES, being less dependent for their excellence on their delicacy of flavor, than for their tenderness, juiciness, &c., need only be gathered a few days before eating; they are better placed in baskets or barrels, in moderate quantity, than to be spread out on shelves. Some of these are about as good when they fall from the tree as by any process of keeping. The Red Astrachan, Porter, and some of the more acid kinds, seem to acquire their highest flavor in this way. But as a general rule they should be gathered a few days before eating. The sweet varieties, particularly such as the Bough, Golden Sweet, and some others, become mealy if allowed to hang too long.

PEACHES and **PLUMS**, except clingstones and prunes, are only fit to eat as they drop from the tree. The only objection to this mode of gathering, is, that it bruises and disfigures the fruit. They should not, however, be picked unless they part from the stem upon the least touch. Clingstones and prunes may be kept in the fruit room for one or more months.

The whole subject of ripening most of our fruits, particularly pears, is new, and experience is needed to learn the best modes of proceeding. With these general hints, however, we leave the matter, hoping to refer to it again at a favorable opportunity.

WHORTLEBERRIES.

BY WILSON FLAGG.

PART I.

THE whortleberry is strictly an American fruit; for, although it is not unknown in middle and northern Europe and in some of the tropical islands, it is in no part of the world so abundant as in North America. It is indeed highly probable that the whortleberry tribe of plants originated here, and from this point have spread themselves over other tracts. Whortleberries, however, are most abundant near the coast, especially in the northern parts, and form in the New England States one of the principal features of the landscape. No single species of this tribe has been reduced to cultivation, though any of them would probably well reward the labor of the cultivator, if they were not abundant in a wild state. The fruit of these plants is well known only to the inhabitants of the New England States: very little has been written upon it, and there are but few persons who are aware of the importance of this gift of nature to the inhabitants of North America.

In the study of geographical botany we find groups of certain tribes of plants prevailing over extensive tracts of country, and abounding generally in regions that are contiguous. But sometimes they are widely separated, like the heaths which are found in Europe and in the southern part of Africa. The whortleberries supply in America the place of the heaths in Europe, and in no part of the world are these two tribes found associated. The whortleberries are by far the most valuable gift of nature of the two, being hardly less beautiful when in flower, and bearing also an excellent fruit. In this country they are sufficiently numerous to constitute alone a distinguishing feature of the landscape. They are most abundant in the northern Atlantic States; but they are found along the whole coast as far as the Cape of Florida. In the southern States are one or two species approaching the size of trees, one of which, called

the farkleberry, (*Vaccinium arboreum*), is an evergreen, and bears a very good fruit.

In New England we reckon about nine or ten distinct species of *Vaccinium*. Botanists make no generic distinction between the blueberry or bilberry, and the whortleberry; but all who have eaten the fruit distinguish at once the whortleberry from the blueberry, by the flavor and not entirely by the color. The former is less acidulous, less mucilaginous, and contains a harder seed than the latter, so that they may be easily distinguished, when eaten, though their color and external appearance are the same. I observe that Bigelow makes the distinction between them in the English names he applies to the species, while Emerson calls them, indiscriminately, whortleberries. The flowers of the two kinds differ as widely as their fruits; those of the whortleberries are more of a reddish color, smaller and more contracted in the mouth than those of the blueberries.

In the whortleberry division of this tribe of plants are usually reckoned five species:—1. *Vaccinium resinosum*, which is the common whortleberry, or huckleberry. I prefer the former word because it indicates its derivation from *hurdle*, signifying berries growing on *hurdles* or sticks. After the bushes were cut and bound into fagots, the berries being found upon them gave origin to their name. This first species is the type of the division. 2. *V. frondosum*, dangle-berry, sometimes called bullet-berries. This is a late species, but the fruit is large and finely flavored. I have found it near Bartholomew's pond in Danvers, but it is rare. 3. *V. virgatum*, the blue whortleberry, a species that bears more showy flowers than the others, and more elegant foliage. The fruit is not superior, however, to that of the *resinosum*. 4. *V. stamineum*, green whortleberry, or deer-berry. This species is common at the South, and ripens its fruit, which is inferior, in September. 5. *V. dumosum*, the hairy whortleberry, a large shrub, with very showy flowers and insipid fruit.

In the bilberry division, there are four species described by botanists:—1. *V. tenellum*, the low blueberry, which

bears the earliest and most beautiful fruit of the whole tribe, and is the smallest shrub of the genus. 2. The high-bush blueberry, *V. corymbosa*, which is a very large shrub, bearing a fine fruit. This, next to the *V. resinosum*, is the most valuable species. 3. *V. disomorphum*, the black bilberry, resembling the last in all respects, except that its fruit is smaller, and black like that of the common whortleberry.

There is no tribe of plants that runs into so many varieties. There are no less than five or six intermediate varieties between the low blueberry (*V. tenellum*) and the high blueberry (*V. corymbosa*); and the black bilberry, corresponding in size with the last, subdivides itself into several distinct varieties of all sizes, down to a dwarf species, as minute as the low blueberry. All these differ also very materially in their quality, the best comparing with the poorest, as the Baldwin apples compare with the common fruit for the cider mill. With regard to the color of the different berries, it may be remarked, that although there are bilberries which are of a jet and glossy black, there is no whortleberry which is decidedly blue, like the low blueberry.

It would be impossible to estimate the value of these fruits to all classes of our inhabitants; but it may be safely asserted, that were the cherry and the whortleberry, with all their varieties, to become extinct, the absence of the latter would be the most painfully felt by the majority of our population. We have learned from Europeans to set a higher comparative value upon the cultivated fruits, even those which are equally perishable, because the western Europeans have no whortleberries, and have never learned to prize them. "In Scotland," said a company of little Scotch girls whom I met in a whortleberry pasture, "we have no wild fruits; all our fruits are in gardens." In this country, where whortleberries are so common and so abundant as to be found in all wild lands that are not too deeply wooded, these fruits are indeed one of our staple productions, of vastly greater value to us than the cranberry, though the latter, being a less perishable fruit, is made an article of commerce, and is more profitable to the individual owner of the lands that

produce it. But for the space of two months of the year, from the middle of July to the middle of September, millions of bushels of whortleberries are consumed in the New England States, and are as great a luxury in their season as any fruit that can be named.

A fruit seems to be valuable to the public in proportion as it can be made an article of commerce. There is some fallacy, however, in this mode of reckoning its value. If a farmer owns a cranberry meadow, that produces an annual crop of one hundred and fifty bushels, on the average, from which he obtains a clear annual profit of two hundred dollars, it must be admitted that this fruit is of more value to him than a whortleberry pasture that would produce double this quantity of fruit. He gathers, packs into barrels, and sells the former, with a certainty of profit, and without danger of loss; while the latter, if gathered and sold in the market, would but poorly remunerate him for the labor and expense of gathering it. But were the value of the two kinds of fruit measured by his own and his family's consumption of them, the whortleberry pasture would be more valuable than the cranberry meadow, because his family would consume a greater quantity of whortleberries and blueberries than of cranberries. In a commercial sense, and considered with reference to the gains of the proprietor, the cranberry is the most valuable fruit; but in a political sense, and considered with reference to the public, the whortleberries are the most valuable, and probably more so than any other equally perishable fruit which the country produces.

People have always been deceived by measuring the general value of an article by its commercial value. Hence the whortleberry pastures are called waste lands, which are worth nothing at all except for pasturage. But were all these waste lands deprived of their produce of fruit, the want of it would be a grievous affliction to the community. How many indigent families depend on them for their whole supply of summer fruit! and how many earn their livelihood, during the whortleberry season, by gathering these berries and carrying them to market! How many boys are prevented from

robbing the orchards of cherries, pears and early peaches, by the opportunity of obtaining fruit in the whortleberry pasture! The robin, the waxwing, and other birds that consume our cherries, are diverted from the orchard and the garden by a good supply of blueberries in the neighborhood; and our farmers would save depredations upon their trees, in considerable measure, by cultivating the earliest varieties of the high blueberry, by the sides of their fences and stone walls, instead of vainly attempting to keep these borders free from weeds and brambles. Why cultivate that miserable buckthorn in hedgerows, a plant that bears neither fruit nor flowers of any value, that drops its foliage very early in autumn, and never shows a single tinted leaf? Instead of this, a miscellaneous row of cornels, viburnums, amelauchiers, elders, and, above all, of blueberry bushes, planted by the sides of a wire or paling fence, or of a stone wall, would present to the sight a charming profusion of flowers and fruits and variegated foliage, from the time when the June berry first puts forth its blossoms, until the last tints of autumn have faded in the oaken wood. Our cultivators seem to have forgotten that children, and the birds, and nature have any claims upon their attention, and plainly entertain a prejudice against every thing in nature that can be made beautiful without cost.

A great deal has been written of the blackberry, and several praiseworthy and successful efforts have been made to introduce it to the notice of cultivators, and to improve it by their art. But the fruit of the blackberry is not more valuable than that of the best varieties of the blueberry. If the former brings a higher price in the market, this arises from its greater scarcity and from the difficulty of obtaining it in good condition. Of the two fruits the blueberry is the most deserving of attention, since it will grow on any soil that is not extremely dry and sandy, and it does not require the fostering hand of the gardener. The blackberry demands a rich soil, and constant attention in ridding the plants of the annual decayed growth, which must be removed, though its removal requires great labor and pains. I am not inclined

to recommend the cultivation of the blueberry, but the introduction of it into the borders of our fields and pastures, where the space it would occupy would be but very little greater than that which is now occupied by stones, brambles and litter.

Our farmers take no pains to preserve a valuable gift of nature, if it will thrive without cultivation. They think a blueberry bush is entirely worthless, because it cannot be sold, and they would allow every one to be exterminated from their lands, because, if put up for sale, they would find no purchasers. Men have a propensity to consider nothing of any real value which has not a determinate price in the market. It is perhaps by the operation of this principle that some men are led to consider their horses worthy of more care and attention than their wives and children.

PART II. THE WHORTLEBERRY PASTURE.

Before I leave this subject I would advert to the whortleberry pasture, as an object in the landscape, and as a field for the botanist and the student of nature. It is a landscape feature which is wholly American, and confined chiefly to the New England States; for although whortleberries are abundant in all the southern Atlantic States, there they are more promiscuously diffused, and are not to be seen in that delightful assemblage of grouped masses of shrubbery, forming, with their fruits and flowers, a perfect symbol of the beneficence of nature, as they are seen in New England. A true whortleberry pasture is one of the most beautiful gardens to be found in the world, abounding, from early spring to the last of autumn, in the most interesting flowers of our clime, and, in the months of July, August and September, sparkling exuberantly with clusters of shining black and azure berries—a fruit which, as I have already endeavored to prove, has a value far exceeding any estimate that can be based on statistics.

The true whortleberry pasture consists chiefly of upland, extending itself out occasionally into a level meadow, and most generally of a hilly and uneven surface, with occasional

groups of trees, consisting of pines, junipers, birches, hickories, and other common trees of the cline. An abundance of elms, however, is unfavorable to the growth of the whortleberry, because it extends its long, fibrous roots to so great a distance and so near the surface of the ground, as to monopolize the vigor of the soil. The scrub oak is likewise seldom found in a luxuriant whortleberry pasture. Wherever this shrub is abundant it exterminates the whortleberry bushes to such an extent as to destroy the features of this kind of landscape. The pasture must be fed by cattle to acquire its most genuine appearance, and if it be fed by sheep it is still more characteristic. Neither cattle nor flocks will browse to any injurious extent upon these shrubs, and while feeding upon the grass, they keep the field from being entirely covered with bushes, and mark it out more distinctly into plats of grass and shrubbery. Hence in an old pasture, the different beds of shrubbery, with green pasture intervening, might be compared to the map of an island, deeply intersected with water—the pasture being represented on the map by the water, and the shrubbery by the land. The cattle and flocks, by constant feeding, have prevented the bushes from encroaching on the pasture, that winds through the shrubbery, sometimes widening into a broad expanse of lawn, then narrowing, and widening again, forming a beautiful labyrinthine course, and diverting the mind by its intricacies and its ever-changing variety of surface.

In this part of the country the whortleberries are chiefly confined to rocky tracts of land, such as the farmer has usually left to pasturage, on account of their intractability. In the oldest settlements we find the most genuine features of the whortleberry pasture; for in the new settlements they are mixed with the wood in the clearings, and have not acquired any arrangement. But in these old rocky pastures the trees and shrubs are beautifully grouped upon the pasture as a ground work, like the irregular figures upon a Brussels carpet. The rocks that lift up their gray heads, sometimes in lofty protuberances, sometimes in smooth flat surfaces, covered with gray liverworts and patches of varie-

gated lichens and mosses, are fringed with shrubbery, and constitute no inferior part of this peculiar scenery. The low blueberry is chiefly the shrub that abounds on the edges and crevices of these rocks. I have seen this little shrub, full of azure fruits, projecting from the crevices of a rock twenty feet above the ground, in company with the yellow honeysuckle, (*Diervilla*), which is in flower when the blueberry is in fruit. Sometimes the Virginia creeper, or more generally the poison ivy, both equally beautiful vines, have clambered up the sides of the rock and covered it with foliage, so that the blueberries that glisten under their leaves seem as it were the fruit of these luxuriant vines.

In all newly cleared land the different kinds of shrubs that abound in a whortleberry pasture are promiscuously blended; but in an old pasture they will always be found to have arranged themselves in family groups. One of the most common of these shrubs is the sweet fern, which, though not remarkable for its beauty, is universally admired for its fragrance. It is not a true fern, but is so called from the resemblance of its foliage to the fern leaf. Hence its name, *Comptonia asplenifolia*. The bayberry, or wax myrtle, (*Myrica cerifera*), is still more abundant and more showy. This fragrant shrub, the root of which is a valuable remedy in rheumatic complaints, is commonly grouped in dense masses of verdure. These interchange with plats of low laurel, or lambkill, a name which I suppose to be a corruption of *Kalmia*, its botanical appellation—(*Kalmia, kalmia, kallam, killam, Lambkill*.*) There is no other way of accounting for its English name, as no instance has ever been recorded of the death of a lamb by eating the leaves of this plant. This shrub, though not celebrated in garden literature or in song, is one of the most exquisite productions

* Many of the English names of plants are similar absurd corruptions of their Latin names. Thus, *Herb Bennett*, the name of a common plant in fallow lands, is a corruption of its Latin name *Urbanum*. *Money*, the name of a little flower in some of our old gardens, is from *Agrimonia*; *Bugle-weed*, from *Buglossus*, signifying *ox-tongue*; *Elecampane*, from *Helianthemum*; *Lime grass*, from its generic name *Elymus*. Hundreds of similar corruptions might be specified, and *Lambkill* from *Kalmia* is evidently a genuine example of this sort of vulgar etymology.

of nature. The rhododendrons, though they have more of that quality which renders them improvable by the art of the florist, are not to be compared with this humble shrub, in the delicate structure of its flowers, in the beauty of their arrangement, which is in a peculiar whorl and the stem, and in their unrivalled crimson bloom. Of this species, the most beautiful specimens are found standing alone outside of the groups. The *Kalmia* often forms extensive plats, like the wild rose, in the same pastures, and constitutes one of the most prominent features of the whortleberry grounds.

I speak chiefly of the plants which are in flower during the whortleberry season; and shall, therefore, only briefly allude to the Canadian *Rhodora*, a familiar plant that spreads its purple glow over the pastures before the whortleberries are in flower, or the trees are clad in foliage. The swamp pyrus flowers about the same time, and in company with the rhodora may be considered the harbingers of the flowering of the whortleberry tribe. The white spiræa, or meadow sweet, is conspicuous during the whole season, after its first appearance in the early part of July. This plant is never arranged in groups, but is scattered very evenly over the ground, and waves its delicate plumes in all parts of the field. I have always found this shrub abundant in the whortleberry pasture, and it seems as needful an accompaniment of the scene as the lambkill. Other pleasing objects in these grounds are the *Andromedas*, whose heath-like flowers appear as the blueberries begin to ripen, and though not very showy, are beautiful when minutely examined. Their white flowers form the most delicate pearly cups, of a nearly globular shape, resembling small white berries, hanging in large compound racemes. To crown the scene with a sort of fairy splendor, the mountain laurel (*Kalmia latifolia*) is no infrequent accompaniment of the whortleberry pasture, especially in those parts of the soil which are wet. No American shrub equals this in glowing and magnificent beauty; but the parties who plunder it of its flowers and branches for the decoration of vases on the Fourth of July, will soon heedlessly exterminate this noble plant from our

land. There are some persons who never behold a beautiful object without wishing to plunder or to destroy it.

In the early part of the season, just before the whortleberries are in blossom, the dwarf pyrus (*P. arbutifolia*) puts forth its corymbs of white, velvet-eyed flowers, resembling those of the hawthorn, though of inferior size. These are seldom grouped in large masses; they are scattered about among the whortleberries, and their larger clusters of glossy black fruit often deceive the fruit gatherer. These berries are unfit for use, having an astringent quality, that has gained them the appellation of choke-berries. The fruit of the meadow pyrus, an allied species, is a large crimson berry, that nearly equals in flavor the high blueberry. This plant is frequently called the shad bush, perhaps from the simultaneous appearance of shad in our rivers with the flowering of this shrub, which is always abundant and conspicuous on the low river banks.

One of the most peculiar features of the whortleberry pasture is the prostrate juniper, often termed eagle's nest, consisting of a somewhat circular head of the *Juniperus communis*, from which are gathered the juniper berries of the apothecary's shop. Sometimes a wild rose displays its flowers from a bush that has grown up in the centre of this mass of evergreen verdure, or a raspberry bush will hang its racemes of crimson fruit above the green berries of the juniper, symbolizing the fresh glow of health as contrasted with the green and livid hues of disease that spring from intemperance. In general, the eagle's nest excludes all other vegetation from its own premises, and the wild flowers and fruits that are sometimes found in it show that it has begun to perish. The berries of other plants that are cherished in its bosom are always of an excellent size and flavor, from their more continued exposure to the sun.

I have sometimes in my rambles met with a tract of land, which was formerly an orchard, now completely overgrown with whortleberries and the usual accompanying shrubbery. The few apple trees that remain add still greater interest to the scene; for whether the natural scenes be wood or pas-

ture, the most pleasing and picturesque are those which, though now restored to nature, have been once reduced to cultivation. But trees and shrubs are more prone to arrange themselves in groups, under these circumstances, than in a field in which the original growth has never been entirely destroyed. It is not the tangled growth of a wilderness, nor the trimness of any style of artificial grounds, which we most admire in the landscape, but that wildly grouped arrangement of trees and shrubbery which we find only in lands, once reduced to tillage, that have been gradually restored to nature, while the pasturing of cattle and flocks has curbed the new growth, and kept it from spreading over the whole surface.

We might suppose, in order to exemplify the manner in which this grouping of shrubbery is produced, that a wide field of irregular surface, which has for many years been tilled and ploughed, is left to pasturage. Wherever a rock lies upon the ground or projects above the surface from beneath, and where the cattle cannot feed so closely as in other parts, a bed of brambles will take root, or a single bush or tree, accidentally springing up, will form a nucleus, or a centre, around which others will cluster, increasing every year with additional rapidity, until the field is universally spotted with patches of shrubbery and young trees. These groups will usually be found on the barren and rocky swells of land, which the cattle and flocks, on account of the meanness of the pasturage, leave undisturbed. The hollows and level places, where the soil is deep and moist, are so diligently grazed by the cattle that no shrub has any opportunity to take root upon them, and they are consequently kept in grass. It is evident that the trees and shrubbery growing up, under these circumstances, must assume a delightful irregularity of grouping, and would in less than a century, if left entirely to nature and the grazing herds, produce a landscape which no art could imitate, and which nature alone, unassisted by her dumb creatures, could never produce. The flocks and herds may therefore be regarded as the best landscape artists,—and the whortleberry pastures,

which delight the eye of the lover of beautiful scenery, have derived all their beauty from the blind operations of these picturesque animals.

But while rambling in a whortleberry pasture, there is no end to the smaller flowers that spring up everywhere under our feet. The sweet-scented pyrola is abundant in all the shady thickets; and the arethusa and the meadow pink (*Cymbidium*) decorate the low grounds among the nodding panicles of quaking grass and the spreading plumes of the meadow rue. The loosestrife, with its long pyramidal spikes of yellow flowers, is always conspicuously grouped, in the low grounds, side by side with similar plats of low swamp roses, or crimson-spiked willow herb. But one of the most attractive flowers in the whortleberry pasture is the red summer lily. There are but few of the inhabitants of New England who do not associate this flower with some of their most delightful rural excursions. From the opening of spring to the close of autumn, the whortleberry pasture is a garden full of flowers and fruit; and I feel confident that if Great Britain's isle had been gifted with these fruits, they would have been as celebrated in English poetry as the grape in that of the Greeks and Romans. The children of our families, who are generally employed to gather berries, are often obliged to travel great distances, in the oppressive heat of summer, to obtain a few quarts of this valuable fruit, because their fathers and grandfathers have grubbed up the blueberry and huckleberry bushes, along with ferns and brambles and dogwood, and left their stone walls naked and desolate, whole miles of which, on every farm, might have been bordered with these shrubs, without the least detriment to their lands.

ON GRAFTING.

THOUGH grafting is one of the most ancient as it is one of the most common operations of gardening, the principles upon which it is founded, as well as the *rationale* of their

action, are very little known, even by those who are continually practising the art. The theory of grafting was first given by the celebrated De Candolle, in his *Physiologie Vegetale*, and his views have been adopted by other writers. The French seem to understand its principles better than the English, and have invented a great many kinds or modifications of grafting. The late M. Thouin published a treatise upon the subject, in which he described and figured more than a hundred modes; and the late M. Tschudy of Metz, the inventor of the art of herbaceous grafting, now generally introduced into all extensive nurseries for the rapid increase of rare plants, published the details of his system. To these authors, and later French writers, we are indebted for most of our knowledge of the different modes of grafting, and their practical application to the multiplication of plants.

With so little general information upon the subject among our cultivators, we are glad to present the views of another French writer, M. E. A. Carrière,* explaining more fully the theory of the operation, and showing that its application is not, as many have supposed, confined to one season of the year. His views upon this point are important, as they fully answer the questions which are so often asked in regard to the period of grafting. Every spring, inquiries are repeatedly made of us, "Is it not too late to graft?" and "Should not the scions be cut early in spring?" To both of which we have invariably replied in the negative, and often with the additional remark that it is never too late to graft. M. Carrière shows that though it may be preferable to graft in spring in order to get the greatest growth, there is no reason why it may not be done at any time during the season, provided its principles are understood. It will dispel many of the erroneous notions current in regard to the art of grafting, and enable all who practise it extensively to do so with greater benefit than they have hitherto received.—ED.

Can a precise period be assigned for grafting, and are the principles rational upon which the operation is considered to

* Guide Pratique du Jardinier Multiplicateur. Par E. A. Carrière.

be founded? Such are the questions which we propose to examine in this paragraph, and it will be evident that they are complex, and cannot be resolved without entering into considerable detail. If, in fact, we look at them in a general point of view, it will be seen that, to give a reply, the various laws, modifications, and ramifications previously treated on must be taken into account. In the first place we perceive, that for all kinds of grafts, and for the different periods at which they should be made, it is less the appearance than the principle that should be examined; that they are all based upon one invariable principle, which, from not having as yet been studied sufficiently deep, has given rise to various hypotheses.

In fact, according to the conditions in which we are placed, whether they result from climate, or any other cause, according to the nature of the plant, the different modes of grafting adopted, the operation varies within limits which may be called indefinite. However this may be, there are in this, as in all things, general rules, and these we are about to explain; but as the subject is of the greatest importance, in order to make ourselves well understood, it will be necessary to revert to some of the principles that have already been laid down, so that the explanations necessary to the solution of the present question may be given.

It has been established as a fact, that organic life exists in all parts of plants; that each of these parts when separated acts like the whole united; that it absorbs and evaporates; that its innate life, in a word, its vital force, can remain for some time, but a time must arrive when it becomes annihilated if it does not receive fresh nourishment. From this it will be readily understood, that so long as these extreme limits are not reached detached scions may be employed for grafting, and that with more or less success, according to the time which has elapsed since their separation from the tree.

Further, it has been acknowledged, that this active principle, this organic life, manifests itself by the presence of a fluid which circulates in all the parts of plants, and this fluid is the sap. Now, as in another place we have compared

and likened this sap to the blood which flows through all the parts of animals; and as this comparison is well founded, it directly follows that its flow is continuous; for, like as the stoppage of the circulation of the blood causes the death of the animal, so that of the sap causes the death of the plant. But, as in the latter, life, independent of organic laws, is also subjected to the atmospheric conditions under which it is placed, and is to a certain extent dependent on the climate in which it grows, it also follows that the flow of the sap is also more or less active at certain periods, according to the state of the weather.

These principles are strictly true, and if they appear to admit of an exception in the case of deciduous plants, in which life seems entirely suspended for a time, still this exception is only apparent; to convince one's self of this it is sufficient to bore, in winter, the stem of certain deciduous trees, and see the liquid run out. Another proof that the flow of sap is never interrupted is supplied by evergreens, which, being always growing, always require a fresh supply of nutritive matter and a continuous circulation of the sap. What is true of the latter cannot be false as regards the former, for one cause cannot produce such opposite effects in cases so nearly alike. It is then clearly demonstrated, that the flow of the sap never ceases in plants, that there is only with a certain number a period of torpor, which may well be compared to the sleep of certain animals, in which for several months life seems to be suspended, although all the vital functions are carried on as in a waking state.

Let us again bring to mind a principle which must never be lost sight of, that all living beings, whatever they may be, only exist on the absolute condition of absorbing certain principles, and after having elaborated and assimilated a certain portion of them, rejecting that which is unfitted for their nourishment—hence the two distinct functions of absorption and evaporation. It is these two functions which constitute all the phenomena of life visible to us.

Absorption and evaporation take place under the influence of two principal agents or movers; the one, internal, desig-

nated vital force, of which the result visible to us is the production of sap; the other, external, is the atmospheric air, but the action of this alone continually causing evaporation would soon occasion the death of the individual, by wasting its fluids, if these were not continually restored. It results from this law, as we have already said, that every portion taken off a plant must perish sooner or later according to its nature, and the conditions in which it is placed; for the continuity of the vessels being interrupted, the liquids cannot reach the parts separated, and the air, continually carrying away from it fluids which are not restored, dries it up; and the more herbaceous the plant, and the more numerous its leaves, the sooner does this take place. Thus, the air which is one of the first conditions of life may also be the cause of its extinction.

Whenever continuity of vessels is broken, the part separated can only preserve life for a time, in proportion as it is protected from the action of the external air. This is done in grafting under bell-glasses, in which case success is almost always certain, even when the scions are in full leaf. But if the operation of grafting is performed in the open air in summer, death will be speedy in proportion to the quantity of foliage on the grafts, and according as they are more or less herbaceous. In fact, in the latter case the tissues are very watery, and as at this period the air is very dry, it tends to evaporate with greater rapidity all the liquids with which it is in contact. This is the reason why the drying up of the herbaceous parts of plants is always so rapid.

All these principles having been established, it is easy to understand that, except in winter, when vegetation seems to be entirely suspended by severe frosts, it is always possible to graft, by preserving as much as possible, especially in summer, the grafts from contact with the air. The same reason explains why cleft grafting is performed in spring; this is in fact the period when plants shake off the state of torpor in which they remained during winter; the sap being in consequence less watery, and its evaporation much less rapid, the graft has time to unite to the stock before it is dried up.

Spring, which has been chosen for cleft grafting, is not the only period at which that operation can be performed; the advantages which this season possesses are all presented by the autumn; the operation may even be performed all the year round by protecting the grafts with a bell-glass, if the subjects are small, in which case herbaceous shoots may be employed, and even all their leaves may be preserved. If the stocks are too large for bell-glasses, grafts should be taken from the best ripened shoots, and the whole of the leaves should be cut off, leaving only the petioles. The grafts may then be surrounded with a coil of paper, or merely with leaves, which must remain round the graft for some time.

We may now resume our subject, saying: the flow of sap in plants never entirely ceases, and grafting may be performed throughout the year, provided the necessary precautions are taken; for the essential point, presuming the manipulation has been well performed, is to prevent evaporation of the sap contained in the scion until the latter has united and become consolidated with the stock.

Although it has been demonstrated, indisputably, that grafting may be performed almost at any period, it must not therefore be concluded that its performance is at all times equally advantageous; for very frequently, not only on account of the precautions which must be taken, but also from the risk of failure which attends an operation under unfavorable circumstances, the trouble is not compensated by the result.

With regard to grafting plants in pots, there is no particular period for performing the operation, provided the rules which have been laid down are attended to; nevertheless, spring and autumn are the best seasons. All hardy trees are usually grafted in spring, although the autumn is also a very favorable period, and even ought in some cases to be preferred. It is after the end of August when the young shoots are sufficiently matured that the operation is performed, the leaves being cut off as above recommended.

We must, however, make some observations on autumn grafting, and point out certain inconveniences with which

it is attended. As at that period the vegetation of the tree has become much less active, and in many species is even on the point of stopping, if the stock is completely cut back there is a risk of its dying. Indeed the sap, being then very slow in its circulation, no longer tends to rise, and there is nothing to draw it up when the top of the stock is cut off; it stops, or rather it obeys the universal law of gravity, and descends in consequence of its own weight. The remaining part of the stem is thus deprived of all nourishment, its bark shrivels, it dries up, and gradually dies down. Frosts ensuing increase the evil, and frequently complete the destruction of the tree; therefore, when grafting is performed in autumn some shoots should be left on the stock at top, to maintain the circulation of the sap, and consequently preserve life in the stock and enable it to transmit nourishment to the scion. The same drawbacks do not exist, or are much less serious, when grafting is performed at the surface of the ground; the results also are always better.

As it is the nature of man to wish to explain everything, and seek for a reason to justify his mode of action, one has been assigned in regard to the period of grafting, and it is said: To graft successfully the sap must be flowing in the stock, and the vegetation of the scion about to commence. Now, it is evident to us that this assertion is fallacious; that it appears to be scarcely applicable to cleft grafting in spring, and does not explain how the union takes place. When grafting is performed in summer, and even in autumn, can it be said that the sap is commencing to flow in the stock, and about to do so in the scion; since, on the contrary, it is in its full flow in the former case, and on the point of stopping in the latter? How then can we by this argument explain budding, which is performed when the sap both of the stock and that of the shoot from which the bud is taken is in such full flow that the bark can readily be detached from either? This, in our opinion, shows, in the clearest manner, the incorrectness of this mode of reasoning, and confirms our theory that to ensure the taking of the scions it is sufficient to prevent the evaporation of the sap which they contain

until their union with the stocks is completed. A clear proof is afforded by budding ; in fact when this operation is performed the sap is in a very fluid state in both stock and bud ; the latter, the part detached, is very small, and furnished with only one leaf, of which the blade, the part by which evaporation chiefly takes place, is cut off ; but as the bud is soon placed under the bark of the stock, and closely tied round, evaporation from it cannot take place, and as, on the other hand, the sap of the stock with which it is in contact is likewise in a very fluid state, the bud is placed in the best possible conditions for succeeding. Therefore a few days are sufficient for effecting the junction and rendering adhesion complete.

THE CHINESE AZALEA.

BY THE EDITOR.

THE Chinese azalea is, without doubt, one of the most beautiful of all conservatory or greenhouse plants, not even excepting the camellia. Its flowers are not so large, double, symmetrical and beautiful, nor its foliage so deep green and glossy as that fine shrub ; but the profusion in which its blossoms are displayed, literally covering the plants, and the long period they remain in flower, as well as their varied tints and coloring, render it scarcely equalled by any shrub, and excelled by none. If we add to these qualities a free growing habit, of simple and easy management, and blooming freely in the parlor as well as the conservatory, we have not exaggerated its attractions, nor over-estimated its importance as one of the most decorative and beautiful of all the winter-flowering plants our conservatories can boast.

Notwithstanding their merits, it has not yet, in American collections, taken that rank which belongs to it, or which it holds in the English and Continental gardens, where it is so much valued that there is no collection in which it is not a prominent object, nor could any of the great metropolitan

exhibitions, which have been so successful of late years, be rendered attractive without it. Amateurs and nurserymen have devoted much time to the hybridization and improvement of the varieties, new and beautiful species have been discovered and introduced, great skill has been displayed in the growth of the plants, by which their real beauties have been developed, and at present it is one of the most popular and admired features of the greenhouse, the conservatory, the parlor, or the exhibition room.

We wish to see the azalea held in higher esteem among our lovers of fine plants. We desire to see the new and elegant varieties take the place of the old and dull colored sorts; and above all, we hope to see greater attention given to the growth of the plants, that symmetrical and bushy specimens may fill the place of the lean and lanky objects usually found in our collections. That we may do our part in the consummation of all these, we give the following directions in regard to the cultivation and management of the plants. We shall divide our chapter into the following heads: Propagation, General Management, Insects, and a List of the best varieties:—

PROPAGATION.

The azalea is readily propagated by cuttings, layering, inarching, grafting, and by seed for the production of new varieties. The usual mode is by cuttings; they may be taken off at any time when the wood is in the right condition, though the safest period is from March to June. Select young shoots, in a free state of growth, with the wood somewhat ripened or slightly hard at the base: if too soft, they are sure to damp off. Make them from two to three inches long, according to the growth, and cut them smooth across at the bottom; take off the leaves half the length of the cuttings, and they are then ready for insertion. Now prepare the pots as follows:—Select them of moderate size, say five inches in diameter; put in a good drainage, to the depth of an inch or more, and fill up within one inch of the surface with clear sandy peat; fill the remaining space with

clean sand, pressing it down firm with a strip of board, and finish by smoothing off the whole even with the rim of the pot: this will leave an even surface to insert the cuttings. Commence with the longest, which should be placed in the centre; follow with the next size, and finish off with the shortest on the outside: give a good watering with a very fine rose to complete the operation.

The next thing is to give the cuttings a proper place,—otherwise they will not succeed. If there is a close frame at hand, with a very little bottom heat, they will do well in that; but if not, they should have a bell glass placed over them, which must fit within the rim of the pot; or if the latter can be plunged, a hand glass may cover one or more pots. All that is necessary is to keep them close for a few weeks, shading them from the sun, with occasional waterings until they begin to grow, which is a sure indication that they are rooted and ready for potting off.

Prepare then for potting off: for this purpose use good sweet peaty soil, adding a sufficient quantity of sand to make it light and fine. Select thumb pots. Take out the cuttings without breaking the roots, and put them in the thumb pots, pressing down the soil firm without being hard; give a good watering to settle the earth, and place them in an old bed where the heat is nearly exhausted; shade for a few days; water carefully and keep them rather close till they begin to grow again, when the top of each plant should be pinched off, in order to establish a stocky and compact habit. In a few days they will break afresh, and as soon as the shoots are two inches long top them again. Continue to repot and top the plants from time to time as they require it, keeping up a gentle bottom heat until the autumn, when they may be removed to the house with the other plants. Some of the early potted plants may produce a few flowers the following spring, but when grown throughout the summer in order to get large specimens, they rarely bloom till the second year. All that is necessary the first season is to give them a little bottom heat, a slight shade from the sun, good supplies of water, pinching the tops of the shoots

often, and repotting as often as they require it. In this way better specimens can be grown in eighteen months than in three or four years in the ordinary way.

Inarching is performed in the same manner as the camellia. In this way large plants of new and rare sorts may soon be obtained by selecting strong stocks and working upon them the small branches of the kind wanted. Grafting is performed when the shoots are in a young or soft condition, and the operation is the same as that practised with the camellia, called side-grafting: the plants should be placed in a frame for a week or two, until well united, when they may have the stock cut off above the graft. Seeds should be sown in February or March, in very sandy peat soil, nearly covering them with a sprinkling of fine sand. In a few weeks they will be up, when they should be removed into thumb pots, and have the same treatment as cuttings. If hybridization has been attended to, some very beautiful varieties may be obtained.

GENERAL MANAGEMENT.

As soon as the plants begin to grow in the spring, those intended for fine specimens should be removed to the warmest part of the house, where they can have a little shade; if they could have the benefit of a warm vinery, where the temperature is 60° to 70°, and have liberal syringings over head, they would advance the more rapidly. They should be kept in a vigorous growth till July, when they should be removed to the open air, where they can be shaded from the noon-day sun. Here they will soon begin to ripen their wood and every shoot will form an abundance of flower buds. Keep them moderately wet, and syringe every other day in fine weather until September, or the usual period for taking in plants, unless cold rains or frost occur, when they should be housed immediately, as nothing injures the azalea more than the cold drenching rains of autumn. They may now have the coolest situation in the house, and be rather sparingly watered till February or March, when, as they show signs of blooming, they may be more abundantly supplied with moisture.

As soon as the blooming season is over in June, the plants will commence their growth, and will require some care. No strong shoots should be allowed to take the lead, but as soon as they appear they should be pinched off; this will equalize the growth and keep the shape of the plants, whatever it may be. As soon as they have made their growth they should be removed to the open air to ripen their wood and mature their flower buds, giving them the same treatment as they had the year previous. If any of the plants need repotting, the month of August is a good time to do it, though we are never guided by days or months in this, but shift when the plant requires it. Old azaleas, which have become ill-shaped, may be made fine specimens if well headed in before they begin to grow, and repotted in good soil as soon as they have made fresh shoots.

There are various modes of training the azalea,—such as the natural, the conical, the globular, and the pyramidal: the natural is simply to let the plants take their own shape, only keeping them bushy and compact; the conical is accomplished by the aid of stakes to tie down the shoots, and the globular in the same manner. In the latter mode the lower shoots are trained over the sides of the pot, so as nearly to hide it, and from these spring other shoots, which give a perfect globe shape to the plants. One of the neatest systems, especially for small greenhouses, is the pyramidal, of which we give an engraving, (FIG. 17.) Messrs. Lane & Son, nurserymen near London, who are great cultivators of the azalea, train a large number of their plants in this style. In this way the flowers are shown to much advantage, and the plant occupies less room than by the other modes of training, and has not the stiffness of the globular form. The azalea is readily made to assume any of these shapes, with the aid of a few stakes and strings. The only invariable rule, never to be forgotten in whatever manner the plants are trained, is to continue to stop the vigorous shoots often; otherwise they will rob the smaller ones of their strength, and flower only upon the ends of the long straggling branches.

INSECTS.

The azalea is generally tolerably free from insects. The only very troublesome kinds are the thrip and red spider; the latter, however, is not so often injurious as the former. The thrips disfigure a plant in a short time. Both may be destroyed if taken in hand in season. We have found whale oil soap one of the safest and surest remedies for each of them. Fumigation with tobacco, two or three times, will kill the thrips, and this is a good way to get rid of them in the winter season, when the plants are in the house; but later, in June or July, when the plants are about to be removed to the open air, it is quite as sure and much easier to syringe with oil soap, as it destroys the red spider at the same operation, if there are any upon the plants.



17. PYRAMIDAL AZALEA.

Prepare the soap as strong as the plants will bear it, which can only be ascertained by trying the mixture on the foliage. If it does not discolor it, then it is not too strong. When ready, take the plants and lay the pots down on their sides, on a mat or clean grass; then give the foliage a thorough syringing with the soap on the under side, repeating the operation after the expiration of a day or two, that any remaining eggs which may have escaped the first time may be destroyed. Small plants which are infested may be easily cleansed by taking the pot in the hands and dipping the head into the soap: repeat the operation in a day or two, and it will effectually kill all these pests.

The list of varieties and a description of the best we must defer to another number.

SUBURBAN VISITS.

RESIDENCE OF H. H. HUNNEWELL, ESQ., WEST NEEDHAM.—Since our account of this fine place in our volume for 1855, (XXI. p. 378), great improvements have been made, and a large number of trees planted out. We now found the grounds in fine order after the refreshing rains of the early part of June, before our dry season had commenced.

Since our last visit, Mr. Hunnewell has made one important improvement which adds much to the interest of the approach, by giving to it a distinctive character, in keeping with the architectural arrangements of the house. The main avenue makes a sudden curve near the edge of the pond, where the first glimpse of the house is obtained. To make a plantation of trees would shut out the magnificent view of the water which is obtained from this point. Still, the promiscuous forest growth and uncultivated character of the steep bank would not harmonize with the finished appearance of the lawn. To retain the view and at the same time hide the rough declivity, a terrace has been constructed, by carrying up a wall twenty or thirty feet, only filling up the intervening space and turfing it over. An architectural parapet surrounds the whole, on the pillars of which are placed vases filled with agaves and other broad-leaved plants. At the end of the terrace towards the lawn front, where the margin of the pond makes a curve, a portion of the bank has been cleared and planted with white pines, hemlocks, arbor vitæ, Norway spruces, &c., which are all clipped into various shapes in the old Dutch style. This, with the terrace, produces a fine effect, and prepares the visitor for the architectural arrangements around the house. The whole has been finely executed under the direction of the proprietor.

Otherwise than these changes the general features of the place are the same as in 1855, but the number of evergreens which has been planted is very great, though many are yet small, and they give a finished aspect to portions of the grounds which before was wanting. These, to us, were the most interesting features of the place. Mr. Hunnewell is a great lover of evergreens, and intends to possess every variety that will stand our climate; having a soil and location particularly favorable to the growth of evergreens, and the natural protection of a pine wood, he has the best opportunity for testing all the species or varieties of doubtful hardiness, and thus, while beautifying his grounds, render a good service to all planters of ornamental trees. We shall therefore confine our remarks principally to the evergreens.

Throughout the grounds Mr. Hunnewell pointed out to us numerous large white pines, from ten to twelve feet high, which he removed last autumn; he also showed us many hemlocks and Norway spruces planted at the same time. Not a single tree had suffered in the least, notwithstanding the very severe winter. No better evidence could be given of the safety of autumn transplanting, which two years ago we recommended to the consideration of all amateurs. The work was done early, and we may safely recommend the autumn as favorable a period as any in the year for removing evergreens.

Commencing with the main avenue, on the border of which are many of the new pines and evergreen shrubs, we noticed *Andromeda floribunda*, which is perfectly hardy; *Pinus insignis*, and *P. Benthamia*, both set out last spring; *Pinus nobilis*, three years planted, appears quite hardy, specimen two feet high; *Taxus elegantissima*, *Picea Webbiana* and *pitchta*, *Cedrus Deodara* var. *robusta*, *Cephalotaxus Fortunei* (male and female), all planted this year. *Abies Douglasi* and *Smithiana*, three years planted, appear very little injured, and we think will succeed, the specimens three and a half feet high. Several magnolias have been planted out, among others *M. triumphans* and *obovate*; *Andromeda pulvurulenta*, hardy. Large numbers of rhododendrons,

azaleas and kalmias have been planted in groups, and all are flourishing well. By the aid of a little peat to give them a start, they soon take hold of the natural soil.

Near the house, in a small group on the lawn, have been planted the dwarf firs, viz., *Abies pygmea*, *clanbrassiana*, and *pumila*; dwarf enough they certainly are, but when well established they will be interesting objects.

Proceeding to the garden department, we noticed that the pears were looking well and the plums bearing a full crop; the trees have been secured from the attacks of the curculio by the use of lime dusted over the trees every few days. This is the second year Mr. Hunnewell has tried this plan, and he has been enabled to raise a good crop each year.

Passing on to the grapery, we found it filled with a very fine crop of grapes, now just ripe; the clusters were very large and well covered.

The Stanwick nectarine was yet bearing a few specimens, though the best of them had been gathered. The two plants in pots bore a fine crop. Since 1855, Mr. H. has erected a peach house, but the trees have not yet attained sufficient size to bear much. Mr. Harris is training them on the Seymour system, and will undoubtedly have some fine specimens of this style of training. It will be a treat to see something of a real system in training the peach, for most of what we have can lay very little claim to anything like method. The trees looked in fine health.

The most noticeable things around the house were Mr. Harris's specimens of fuchsias. Some twenty or thirty plants decorated the piazza, and magnificent specimens they were, being some five or six feet high, and nearly as many in diameter, clothed from top to bottom with healthy foliage and beautiful flowers; it is not too much praise to say that we have never seen in our gardens so many fine specimens of this showy plant.

We might occupy time and space in describing the appearance of the grounds, the fine growth of trees, &c., but this is unnecessary. Everything was in the best order, and one unacquainted with such things could scarcely believe

that everything about the place has been accomplished in the short space of six years.

WOODLAWN CEMETERY, MALDEN.—Since the establishment of Mount Auburn Cemetery, which has now been enlarged to double its original size, several others have been laid out in the vicinity of Boston. So objectionable have become the old burial grounds in the heart of our cities, that these rural abodes of the dead are demanded by our increasing population. Forest Hills was the first of these, and Woodlawn was the next in our immediate vicinity. Six years ago the latter was a rough and uncultivated spot, though a naturally pleasant and picturesque location. Advantage has been taken to retain all its natural beauties, while, by the aid of art, the less wooded and open parts have been extensively planted with a fine variety of ornamental trees.

The whole charge of Woodlawn has been entrusted to Mr. J. Cruikshanks, from the commencement, who, with Mr. H. W. Fuller, one of the proprietors and original owners of the ground, have made all the avenues, planted the open glades, formed artificial ponds, and made all the openings through the thickly wooded groves. Woodlawn contains above a hundred acres, about one quarter of which is nearly level, while the other part is diversified with hill and dale; the extreme portion being very elevated, and commanding views remarkable for their grandeur and extent. As yet only a part of the ground has been at all changed from its original state. Avenues and walks are only laid out as the demands for burial lots increase.

Woodlawn is situated in the southeast corner of Malden, but includes a small portion of North Chelsea. It is distant from Chelsea bridge or ferry about two and a quarter miles, and from Malden centre one and a half miles. From Boston by way of Chelsea bridge or ferry the distance is four and a half miles. The roads in the vicinity are good, and, with the alterations making by the Cemetery Company, will be improved and extended. In whatever direction Woodlawn is reached, the drive is one of the most delightful in the vicinity of the city.

The gateway is in the Gothic style, by Billings, in the form of one immense arch, and two smaller side ones, with the lodge for the officers attached. Over the arch is the inscription, "I AM THE RESURRECTION AND THE LIFE." Passing the gate we enter upon the main avenue, which is twenty-four feet wide, and finely grouped with Scotch pines, Norway spruces, and various deciduous trees. This part of the Cemetery was originally a broad open pasture, but by the aid of curved walks and judicious plantations, it has been made exceedingly varied and beautiful. A place of considerable extent has been reserved for a temple, when the condition of the company shall enable them to erect one.

The lots have been well arranged by Mr. Cruikshanks, and the introduction of quite a number of rhododendrons and azaleas, which are in a flourishing condition, gives a lively appearance to the margins of the avenues. A reserve ground, where several kinds of trees and shrubs are grown, enables the company to plant its own portions of the ground to correspond with that done by the proprietors of lots.

Woodlawn is a very beautiful spot ; and to the thickly settled neighborhood in which it is situated, must supply a want which has been long needed. The distance of Mount Auburn and Forest Hills must preclude the use of these old cemeteries to the inhabitants north and east of the city ; but in the attractions of Woodlawn they will find all the rural character of these older places, so appropriate to the burial grounds of the dead.

General Notices.

MULTIPLYING THE VINE BY CUTTINGS.—At the meeting of the Horticultural Society last Tuesday, Mr. Fleming of Trentham produced some cuttings of vines which in five days had formed roots as much as three inches long, and which had been prepared by a new process. The usual methods of multiplying the vine are by layers, or cuttings, or eyes ; each having so limited an application, that much time must elapse before any considerable

number of plants of a new variety can be propagated. The method pursued at Trentham is to take advantage of the laterals which every vine may be forced to produce in abundance, to separate those laterals close to the old wood as soon as they have three or four leaves, and to strike them in silver sand in the usual way. Such at least was the case with the specimens exhibited on Tuesday.

If a vine is so closely covered with glass that the air around it is always saturated with humidity, and if it is then exposed to the sun the air being always warm, it breaks in the usual way; but in a few days each shoot will produce a lateral from the bottom of every leaf; these laterals after growing to a certain length will themselves break into fresh laterals, and so growth goes on. Thus, a vine in such a situation having 50 eyes will form 50 new shoots; these shoots after a time will break into at least 10 laterals, and each lateral may be expected to produce half a dozen other laterals of a second order. This being so a single vine with 50 eyes may be compelled to produce materials for 3000 new plants, instead of its power of multiplication being limited to the original 50 eyes, as is the case under ordinary circumstances.

The process is in most respects similar to that practised in Messrs. Weeks' nursery, as mentioned in our last number. In both cases young green wood is employed; but in the last mentioned place a shoot is itself divided into cuttings, each having at least a couple of eyes; and there the operation ends. So that while in the case above supposed there is a possibility of getting 3000 cuttings in a season by the use of laterals, we could hardly expect more than 300 by merely dividing the first strong shoots into cuttings. We know not whether these methods are absolutely new; probably not; for they are such as theory would certainly suggest if brought to bear upon the subject. But they are so far novel that they have not been generally employed by gardeners.

We say that they are such as theory would suggest. Let us explain ourselves. Nothing is more certain than that the greater and more active the vitality of a cutting the more freely will it become a new individual by the emission of roots. It is equally certain that vitality is most active in the young shoots of plants, turgid with organisable matter and abounding in nitrogenous principles. Therefore it is a general axiom in theory that a young cutting will strike more quickly than an old one; that green wood will root more readily than ripe wood. Propagation by the eyes of the vine is indeed, in some degree, an evidence of this fact. But ripe or half ripe wood, though least active and charged in the smallest degree with organisable and nitrogenous matters, is usually preferred; and for the following reason. It is indispensable that some time should elapse between planting a cutting and its emission of roots, during which time its vitality must be maintained by artificial means. In many plants this is an operation so difficult or uncertain that vitality departs before roots can come; and thus the cutting dies. Wherefore nearly ripe or fully ripe wood is often preferred, because its vitality, although comparatively low, is more easily supported in the absence of roots than if it were younger and more active.

Whether or not, therefore, it is desirable to use green, half ripe, or fully ripe wood for propagation, can only be determined experimentally. In many cases it has been thus determined, and we find one year old wood used for some things, two year old wood for others (as oaks and beeches when grafted), while in some cases the quite green wood is universally employed ; to which latter class the vine may be now referred.

But is this a good mode of propagating the vine as well as an easy ? That is to say, will the young plants obtained from green wood be as healthy as if from ripe wood ? We understand that the vines obtained by Mr. Fleming's process are weakly the first year, but become strong and healthy in the second if allowed to break in a cool house. Probably he has never pushed the process to its extreme limits by availing himself of the third generation of laterals. Let us, however, suppose he did ; would the consequences be injurious. We cannot but think that they might be ; for the laterals of the third generation, though active enough at first, would be likely to indicate symptoms of inherent, and possibly incurable, debility, as has occurred to the dahlia in cases of the over multiplication of that plant.

This is certain, that if vines are multiplied by the method above described and are struck comparatively late in the season, it will be more difficult for them to ripen their wood than when coming from eyes in the usual way. This is however mere speculation on our part ; and we should be glad to hear that our anticipations are unfounded.—(*Gard. Chron.*, 1857, p. 323.)

EFFECT OF THE GEOLOGICAL POSITION OF THE CONIFERÆ.—The general diffusion of foreign Coniferæ in this country, and their importance, not only as regards the effect which they will eventually produce in our landscapes, but as regards their intrinsic economic value, induces me to hope that a notice of certain peculiarities, which I have had opportunities of remarking in a few species, may not be unacceptable to the society ; and may possibly elicit papers on the same subject from persons who are qualified to treat of it more fully and more accurately than myself.

In and about Tortworth Park, at the northern extremity of the Bristol Coal Basin, the underlying beds of carboniferous limestone and old red sandstone crop out at a high angle, with occasional beds of the Triassic and Liassic formations resting on their flanks ; producing not only great irregularities of surface, but important differences both in the constitution and quantity of the superincumbent soil. Over the whole of this ground the more common Coniferæ are planted in great abundance, and, with a few exceptions (owing chiefly, I believe, to geological reasons), they grow rapidly and well.

As a general and sufficiently obvious rule, the Coniferæ thrive in proportion to the depth of the surface soil on which they stand. This is especially the case with the Deodar and *Pinus insignis*. The rule does not, however, appear to apply invariably to *Abies Douglassii*, as I possess spe-

cimens growing as vigorously on the cold and sterile shales of the carboniferous limestone, as others on the deep and warm soil of the old red sandstone.

The most fastidious of the Coniferæ which I have had an opportunity of observing is undoubtedly *Cryptomeria japonica*. On the limestone its leading shoot is always defective, and its growth generally devoted to the formation of a nest-like mass of small shoots; whilst on the old red, a formation deficient in lime, its growth is regular, upright, and graceful, and so rapid, that I have no hesitation in affirming that in this locality it would outgrow the larch.

The deodar, on the other hand, appears to be the least discriminating, and the most accommodating of all the Coniferæ. No position, and no variety of soil, appears to come amiss to it; on lime or sandstone, rock or clay, it grows with equal facility—though depth of soil, as before stated, invariably contributes to rapid growth.

Pinus insignis appears to prefer the old red to the limestone; on the latter formation it maintains its health, but its annual growth is comparatively small. The most vigorous specimen of this pine which I possess stands on a deep loam, formed by the detrital matter of the overhanging hill, at the point of contact of the old red sandstone and the clay of the lower lias. This tree, which was planted about the year 1843, is now 40 feet high, and at one foot from the ground 5 feet in circumference.

In *Araucaria imbricata*, though planted in considerable abundance, and in every variety of soil, I have not been able to detect any decided preference for one formation over another. It has an evident dislike to a wet locality, and it generally, though not exclusively, thrives best upon a deep soil.

Cupressus funebris, and *Cupressus Goveniana*, are both growing vigorously on limestone rock, with but little surface soil. The former of these trees is thriving equally upon a deep soil of the old red sandstone. *Cupressus macrocarpa* is growing rapidly on the clay of the carboniferous limestone.

Taxodium sempervirens appears to be extremely capricious in its taste as regards the formation on which it grows; but I have in several cases remarked that it thrives and even appears to luxuriate in a shade which proves deleterious, and often fatal, to *Pinus insignis*.

There are many other Coniferæ which appear to manifest habits or tastes peculiar to themselves; but which are either too young, or in numbers insufficient to justify me in attempting to generalise upon them. Indeed, all the remarks which I venture to offer in this short paper are not made with a view to dogmatise upon the subject, but in order to call the attention of persons cultivating this tribe of plants to the importance of selecting the position of such Coniferæ as show any decided tastes. With some reference to geological position, it is true that many formations are not often met with upon one estate, more especially in one park—the locality in which the more valuable Coniferæ are generally planted; but where such conditions do occur, a knowledge of the formation in which each species appears to

thrive best cannot fail to prove important. Before such knowledge can be attained, more extended and more accurate observations will be necessary; and should this paper prove the means of calling the attention of more competent persons to this study, I shall feel that I have not recorded my brief experience in vain.—EARL DUCIE, in *Trans. of Scottish Ab. Soc.*—(*Gard. Chron.*, 1857, p. 324.)

EXPERIMENT IN REGARD TO ALTITUDINAL TEMPERATURE.—All know that the temperature of the air diminishes as we rise into it. A mountain is clothed at its base with palms and plantains, epiphytal orchids, bromeliads, and other forms of tropical vegetation, while its summit is crested with eternal snow. The temperature may fall upon the sides of the mountain from 100° to 0° , or in any such proportion.

This fact, which is familiar to schoolboys, is often applied horticulturally by placing a garden at the lowest level attainable. Nor has this been unnatural, for if the fall in temperature as we rise into the air is a general rule, some decrement ought to exist at slight as well as much decrement at great elevations.

Some excellent observations upon this subject were made by Dr. Hooker in our last year's volume. It was there shown, from Quetelet's observations as given by Alphonse De Candolle, that at Brussels a thermometer at 10.8 feet elevation stands in summer $5^{\circ}6$ higher than one placed on the surface of the soil, quite contrary to the usual belief, but on the other hand that the lowest temperature on the surface at 9 A. M. during the spring being $35^{\circ}4$ it was $2^{\circ}3$ lower at the 10.8 feet elevation, which would be according to rule. Thus, according to Quetelet, the absolute surface is warmest in spring when small differences in temperature are of the most importance to gardeners; and, if this be really so, spring crops should always be at the lowest level attainable, as our forefathers thought. But when we see how constantly orchard fruit escapes spring frosts on the topmost boughs of a tree while it perishes on the lower, it is difficult not to suspect either some error in observation or that 9 A. M., the time of Quetelet's observations, when the effects of nocturnal radiation are disappearing, is an unsuitable hour for the examination of thermometers provided for the purpose of determining such questions as that before us.

Further experiment upon this subject was therefore desirable, and accordingly, in the beginning of March of the present year, an apparatus was provided in the Garden of the Horticultural Society for the express purpose of determining the lowest temperature experienced during the night at various elevations between the surface and 36 feet above it. Upon a perpendicular pole five accurate self-registering thermometers were fixed at six feet distances, and a sixth was placed on the ground. Every morning the state of these thermometers was carefully noted, and we now produce the result for a few days in April and May when vegetation was becoming active, and when all tender crops were most sensible of low temperatures.

	Feet.	Feet.	Feet.	Feet.	
Thermometers at	0	12	24	30	Above the surface.
April 12	30°	33½°	35°	35°	
“ 15	24	27	28	28	
“ 16	25	27½	29	30	
“ 17	27	30	32	32	
“ 21	31	35	38	37	
“ 24	24	26	28	28	
“ 29	23	26	27	27	
May 3	26	31	32	32	
“ 4	31	33	34		
“ 5	23	27	28		
“ 6	27	32	33		
“ 7	25	29	30	30	
“ 8	28	29½	31	31	
“ 18	37	40	41½	42	

This it will be observed is entirely opposed to M. Quetelet's observations; but at the same time is consistent with what occurs, as we have already said, on the topmost and lowest boughs of a fruit tree. It shows conclusively that in the spring the night temperature near the ground is much lower than at small distances above it.

It proves that the air 12 feet above the ground is in April and May, the period of our fatal frosts, about 3° warmer than on the surface itself; that at 24 feet it is from 4° to 7° warmer; but that the difference between 24 feet and 30 feet is immaterial. Surely this is a fact not to be lightly regarded by the gardener, especially when it is found that the sharper the cold on the ground level the greater the gain in warmth on a higher level. The above table shows that although the thermometer may not fall below 32° at 24 feet above the ground, it may stand at 25° on the ground itself; an immense difference when we consider how sensitive plants are to even small variations of temperature, especially when they are growing fast, as in the spring. Whether this happens, as a friend suggests, in consequence of cold being radiated from the ground, or whether it arises from any other cause is practically unimportant. The fact remains. Only it must be remembered that if the lower temperature of the surface is really due to the radiation of cold from the earth, then similar differences would exist at all elevations above the sea.

That being so, it becomes a serious question whether in gardens where there is no natural fall to the ground, and where artificial rises cannot be provided, it is wise to rely for a crop of fruit upon dwarf trees to the exclusion of standards. For it is evident that in the first case all the blossoms may be frozen in a night, when those in the second would escape.

It is scarcely necessary to dwell further upon this point at present; the facts above cited speak for themselves. But we certainly should like to hear from intelligent observers whether any experience, having sufficient exactness for the purpose, can be produced either for or against the infer-

ence we seem justified in drawing. In the meanwhile we may point out one case which came last autumn under our own observation. In a county where there was a general failure of orchard crops, one orchard only bore as abundantly as usual, and that orchard enjoyed no advantage that we could discover, except that it stood near a river some 50 or 60 feet higher than the neighboring country. In this case was the air really warmer in the orchard than at a lower level, or was the crop secured in consequence of the air of the orchard, after having been cooled down by radiation, rolling down to the river as its temperature decreased?—(*Gard. Chron.*, 1857, p. 436.)

ON RINGING THE VINE.—M. Bourgeois presented to the Imperial and Central Society of Agriculture some shoots of a vine as the result of numerous experiments which he had made with respect to ringing, and which he stated had been completely successful as regards the improvement of the grapes, the berries of which became larger, and ripened earlier in consequence of the operation. According to him, this experiment is of great importance, especially in cold, moist, and late situations in the neighborhood of Paris, where last year the grapes did not ripen well. He also states that it prevents the berries from dropping off.

The experiments were made with a view to determine—1. At what period the ringing should be performed? 2. What should be the breadth of the ring of bark taken off? 3. The depth of the incision—that is to say, must it only go as deep as the epidermis, or must it go to the alburnum? 4. Should ringing always be performed on the young branches? 5. What would be the effect of practising it upon old wood? 6. Should it be made as near as possible to the base of the shoot, leaving however an eye to which the shoot may be pruned back? 7. What would be the effect of ringing between two bunches, and of ringing both above and below a bunch? 8. Should the shoot be allowed to grow at full length after ringing, or should it be stopped above the bunches?

Although ringing the vine has been long known and practised, M. Pepin thinks it advisable to call the attention of vine growers to this very useful proceeding, in the case of Vines placed in very unfavorable conditions for ripening.

M. Hardy, who has practised the operation for 8 or 10 years, stated that it had the effect of hastening the period of ripening from 4 to 17 days; but he remarked, at the same time, that the practice deteriorated the quality of the fruit. He had also operated upon cherries and plums; the period of ripening was earlier, it is true, but this precocity was always at the expense of the quality of the fruit. He cited an instance of a proprietor of vines in the neighborhood of Soissons who performed the operation on a large scale, and was obliged to give it up because his wines became deteriorated, and sold for less than those of his neighbors. M. Chevreux, who had tasted the grapes deposited by M. Bourgeois, declared that he found an appreciable difference between the grapes produced beneath the ring and those above it, not only in the size, but also in the firmness and solidity of the berries.

As far back as 1776, M. Bourgeois states the ringing of the vine was practised by M. Lancry; nevertheless, it does not appear that this mode of obtaining table grapes of larger size and better quality was otherwise employed than as a matter of curiosity by some amateurs who from time to time have made the experiment—not even at Thomery, where the cultivation of the vine is carried to such a degree of perfection, and where the most minute care is taken to produce the remarkable grapes which are sent to the Parisian market under the name of Chasselas de Fontainebleau.

M. Brongniart inquired if the grapes situated beneath the ring exhibited any difference from those situated above it. M. Bourgeois replied that there was none. M. Brongniart was of opinion that the operation would have no effect upon the grapes situated below the incision. According to M. Pepin, ringing weakens the plant upon which it is practised. M. Hardy confirmed this statement. Every time that he had operated upon fruit trees, he observed that it weakened the individual.—(*Gard. Chron.*, 1857, p. 436.)

Gossip of the Month.

THE NEW AMERICAN ROSE "ISABELLA GRAY."—Dear Sir,—In your notice of the above from the London Gardeners' Chronicle, you observe, "it is remarkable that our own cultivators should know nothing of such a variety." It is well known in our district. I could point to several dozen cultivators in Germantown who have for the most part had it these two years past. I understood that the whole stock was in the hands of two Philadelphia nurserymen three summers since, and it was with no little surprise that I read in the Gardeners' Chronicle about "Mr. Low having discovered it in South Carolina." If you will refer back to some of the reports of the Pennsylvania Horticultural Society, I think you will find it reported that Mr. Buist had a special premium awarded for it as a very superior variety, which it undoubtedly is. Now that it has been noticed in the Gardeners' Chronicle, our cultivators will doubtless appreciate it; yet it is remarkable that everything should have first to go there to get a reputation with us. But our ladies have to go to Paris for their fashions, why not gardeners go to London for their plants?—THO. MEEHAN.

We have been somewhat surprised to learn from our correspondent that this rose has been so well known in Philadelphia, and still more surprised to hear that it was produced from seed by Andrew Gray, our correspondent of Charleston, S. C. Since our last number we have seen in the Gardeners' Chronicle, where it seems we have to go for our information about our plants, as our own amateurs and cultivators are too negligent to give it to us, the following account of the Isabella Gray, by Mr. Rivers, which we copy:

"As the history of this rose has not been very accurately given in the advertisements, it may be perhaps interesting to your readers to know some-

thing more about it. Mr. Andrew Gray, who had been first foreman to Mr. Buist of Philadelphia, left some years since and settled in Charleston, S. C., about eight years ago. The Noisette Cloth of Gold seeded freely with him; from the seedlings he selected two, one he called Isabella, *alias* Miss Gray, after his eldest daughter; the other he called Jane Hardy, after his wife. The former has bloomed well in America, but is not equal to the Cloth of Gold in beauty. Jane Hardy does not bloom well; it is like the old double yellow rose, its buds burst without opening. Isabella Gray was sent to England three years ago by Mr. Buist, who gave me the above information, but has never bloomed till this season. There is, therefore, but one Miss Gray or Isabella Gray rose, which is likely to prove a very nice free blooming yellow rose. The Cloth of Gold was not raised in America, as is stated in one of the advertisements, but at Angers, in France, about the year 1841."

Thanks to Mr. Rivers for imparting so much information to us about our own seedling flowers; but for him we might have remained ignorant not only of the rose but of the person who raised it, and perhaps called it a new foreign variety. Even our friend Prof. Page, who knows all about roses, does not mention this in his account of fine American seedlings, in a late number.

Seriously, however, it is a shame that our own American productions should not be made known here before going to Europe for celebrity.

That the tricks of trade should be resorted to abroad to conceal the origin of a rose we can well understand; but that our own cultivators should aid in this is really surprising. In the first account which we read of this rose it was said to have been accidentally found by Mr. Low, of the Clapton Nursery, who was travelling in South Carolina. This of course was only done to blind the other London nurserymen, and prevent them from sending to Philadelphia for it, where no doubt Mr. Low got his stock, probably purchasing it with an especial contract that *nobody* should know anything about it, till he could raise a good stock for sale. Our correspondent says, that it was understood to be in the hands of the Philadelphia nurserymen three years ago, and that a special premium was awarded to Mr. Buist for it.

It is in this way that we lose the credit which really belongs to our amateur cultivators, in raising seedling plants. We make no objection to selling the stock to London nurserymen, as they probably would pay the most for it; but the fact of the production of such a fine rose, and that it was under propagation for sale, should have been given to the public as soon as the character of the rose was ascertained.—ED.

APPLE TREES WITH PINK BLOSSOMS.—An old gentleman strolled through the orchard of his nephew, and took particular notice of the blossoms of the apple and pear trees. Meeting his nephew a few hours afterwards, he told him he had been examining his fruit trees. Well uncle, said Mike, what do you think of the prospect for fruit? Poor enough, poor

enough, said the old man, you will have but little fruit from those trees this year, Michael. Why so, said Mike, I have never seen a fuller bloom than there is this spring. All that may be, said the uncle, but mark my words, Michael, you will not get two barrels of fruit from that orchard this year. You will observe the blossoms are nearly all white, no fruit will come of them; it is the pink blossom that the fruit comes from, and there are but few of them on your trees. When Michael gathered his fruit that fall, he found the truth of his uncle's prediction.—DOCTOR, *Portsmouth, N. H.*, July 9, 1857.

Massachusetts Horticultural Society.

Saturday, June 27, 1857.—Exhibited. FLOWERS: From P. Barnes, E. Stone, J. Murray, J. Breck & Son, J. Nugent, J. A. Kenrick, A. Bowditch & Son, J. McTear, W. H. Spooner, H. Vandine, W. C. Strong, Evers & Co., Galvin & Hogan, T. G. Whytal, C. Copeland, Hovey & Co., Mrs. Durfee, Miss A. C. Kenrick, and Miss Russell, cut flowers, roses, &c., in variety.

The President contributed forty varieties of Pæonies, some of them new and fine.

AWARD OF PREMIUMS AND GRATUITIES.

ROSES.—

Class I. For the best thirty varieties, to J. Breck & Son, \$8.

For the next best, to Evers & Co., \$6.

For the next best, to W. C. Strong, \$4.

For the next best, to Galvin & Hogan, \$3.

Class II. For the best twenty varieties, to Galvin & Hogan, \$7.

For the second best, to J. Nugent, \$6.

For the third best, to J. Breck & Son, \$4.

Class III. For the best twelve Perpetual roses, to Galvin & Hogan, \$5.

For the second best, to P. Barnes, \$3.

For the third best, to Evers & Co., \$2.

GRATUITIES.—To Hovey & Co., for fine display of roses, \$3.

To T. G. Whytal, for plants, \$3.

To Hovey & Co., F. Winship, E. Stone, and A. Bowditch & Son, for cut flowers, \$2 each.

To C. Copeland, P. Barnes, J. Murray, J. Hyde & Son, J. A. Kenrick, H. Vandine, J. McTear, A. Bowditch & Son, Galvin & Hogan, and Evers & Co., \$1 each.

July 11.—An adjourned meeting of the Society was held to-day—the President in the chair.

A letter was read from C. W. Dilke, Chairman of the Committee of Arrangements for the Great Fruit Exhibition of the London Horticultural Society in October next, inviting the members to contribute. A vote of

thanks was tendered to Mr. Dilke, and the Corresponding Secretary authorized to transmit the same to Mr. D.

H. H. Hunnewell, Boston, was elected a member. Adjourned to the first Saturday in August.

Exhibited.—**FLOWERS:** From Hovey & Co., fourteen varieties of Prairie roses, among which were Eva Corinne, Mrs. Hovey, Miss Gunnell, Anne Marie, Superba, President, Baltimore Belle, Triumphant, &c. From L. B. Schwartz, Boston, two specimens of African flowers, very pretty, names unknown. Prairie roses and cut flowers from F. Winship, J. Breck & Son, J. Nugent, J. French, C. Copeland, E. A. Story, Jr., Miss Russell, E. S. Rand, Jr., E. Stone, Miss S. D. Fiske, J. B. Moore, H. Vandine, W. C. Strong, W. E. Carter, Mrs. Wm. Ashby, J. McTear, Galvin & Hogan, B. Harrington and others.

AWARD OF PREMIUMS AND GRATUITIES.

PRAIRIE ROSES.—For the best, to J. Nugent, \$5.

For the second best, to J. B. Moore, \$4.

For the next best, to Hovey & Co., \$3.

GRATUITIES.—To C. Copeland and F. Winship, \$2 each.

To H. Vandine, J. Breck & Son, W. C. Strong, E. A. Story, Jr., W.

E. Carter, Miss Russell, J. French, L. B. Schwartz, E. Stone, S. D. Fiske, and Galvin & Hogan, \$1 each.

FRUIT: From C. Heard, Brighton, Black Tartarian cherries, extra fine. From J. W. Foster, Black Eagle and Black Tartarian cherries, extra fine; also White Bigarreau. From Capt. Austin, extra fine Black Tartarian cherries. From C. E. Grant, extra fine Napoleon Bigarreau cherries.

From Hovey & Co., Sir C. Napier strawberries, large and extra fine. From J. F. Allen, grapes in variety; also the Brincklé, a small-berried sort, with very inferior looking bunch. From C. F. Jones, fine figs. From J. C. Porter, grapes. From W. C. Strong, currants and a new variety of Haut-bois strawberries. From N. Smith, Jr., a seedling strawberry, of fine size, but imperfect in the berry, pale colored and without much flavor. From B. Harrington, cherries, currants and strawberries.

July 18.—Exhibited. **FLOWERS:** From J. Breck & Son, fine phloxes, and carnations and picotees. From Hovey & Co., several new and fine carnations and picotees, and phloxes. Cut flowers, pinks, &c., were contributed by J. Murray, P. Barnes, F. Winship, J. Nugent, Jona. French, T. G. Whytal, Evers & Co., Miss Russell, J. McTear, (a fine specimen of *Erica tricolor* Wilson), Mrs. Richardson, C. Copeland, J. Hyde & Son, D. Robertson, A. C. Kenrick, and others.

AWARD OF PREMIUMS.

SUMMER PHLOXES.—For the best, to J. Breck & Son, \$5.

For the next best, to Hovey & Co., \$4.

CARNATIONS AND PICOTEES.—For the best, to Hovey & Co., \$5.

For the next best, to Evers & Co., \$4.

For the third best, to J. Hyde & Son, \$3.

FRUIT: From Hovey & Co., Hovey cherries, extra fine. From I. Sargent, Black Hamburg grapes, very large bunches and fine berries, but not

highly colored. From J. W. Foster, Knevet's Giant raspberries, extra. From W. C. Strong, Caucasus, Versailles, Macrocarpa, and Grape d'Hollande currants. From Capt. Austin, Franconia raspberries, extra. From J. F. Allen, Bowker, White Gascoigne and other grapes; also, fine nectarines. From C. F. Jones, figs.

July 25.—Exhibited. FLOWERS: From C. Copeland, a fine display of roses and other cut flowers. Gladiolus from P. Barnes. Flowers in variety from J. Breck & Son, F. Winship, Jona. French, J. Beegan, J. Nugent, H. Vandine, Miss Russell, and others.

GRATUITIES AWARDED.—To C. Copeland, F. Winship and G. G. Hubbard, \$2 each. To J. Murray, \$1.

FRUITS: Currants were shown in great variety and in considerable quantities, but the quality not quite so good as usual. From J. W. Foster, very fine Cherry and Red and White Dutch currants; also, Seedling gooseberries, excellent. From A. D. Webber, very fine gooseberries. From Capt. Wilson, Victoria, Cherry, and Red and White Dutch currants, fine. From C. Holbrook, handsome peaches. From J. F. Allen, grapes of several kinds. From W. C. Strong, eight var. of currants. Currants were also exhibited by F. Dana, J. Nugent, Capt. Austin, J. Hyde & Son, B. Harrington, and others.

PREMIUMS AWARDED FOR FRUITS.

GRAPES.—For the best before July, to Mrs. F. B. Durfee, \$8.

For the second best, to N. Stetson, \$6.

For the third best, to J. F. Allen, \$4.

PEACHES.—For the best forced, to C. Holbrook, \$5.

For the second best, to G. R. Sampson, \$3.

STRAWBERRIES.—For the best, to Geo. Leland, for Jenny Lind, \$5.

For the next best, to Hovey & Co., for Sir C. Napier, \$4.

For the next best, to M. H. Simpson, for Hovey's Seedling, \$3.

CHERRIES.—For the best, to J. W. Foster, for Black Eagle, \$4.

For the next best, to Capt. Austin, for Black Tartarian, \$3.

For the next best, to C. E. Grant, for Napoleon Bigarreau, \$2.

Horticultural Operations

FOR AUGUST.

FRUIT DEPARTMENT.

The month of July, in the early part, was very dry and unfavorable for vegetation, but, after the long drought of nearly six weeks, rainy weather set in, and copious showers fell which completely saturated the ground, and gave renewed vigor to all kinds of trees and plants. This was succeeded by warm weather, with the thermometer at 90°, which gave a fresh start to vegetation of every kind.

GRAPE VINES in the early houses should now be carefully pruned, and

cleaned preparatory to starting into growth for the next crop. Air freely until it is intended to commence forcing. Vines in the succession house or greenhouse will now be ripening off the crop, and will require plenty of air, and an entire withholding of water until the fruit is cut. Vines in cold houses will now require attention, as it is the critical season for mildew: air freely in good weather. Damp the walks and border often, and guard against sudden changes or strong draughts of air through the house. Top the laterals and tie in the spurs carefully. Hardy grapes should now have attention; tie in all the strong canes needed for next year's bearing, and stop all laterals which spring from these; also cut away all small and useless shoots which crowd the others; thin out the berries if large and fine specimens are wanted: mulch the roots with old manure, and water liberally in dry weather. With a little extra care, much finer grapes may be raised than are usually obtained; and with such fine sorts as the Concord, Diana and Rebecca, which are sure to ripen, all the extra attention we may give will be amply repaid in the abundance and excellence of the crop.

STRAWBERRY BEDS may be prepared this month, and the plants set out after the 20th, if the weather is not too dry. Beds set out in spring should be kept clear of weeds and the runners carefully laid in.

PEAR and other fruit trees should be summer pruned, according to our directions in our last number. Mulch and water all trees bearing heavy crops.

PEACH trees in pots, which have had their fruit gathered, should be more sparingly watered.

BUDDING should be done this month; commence with the plums and pears.

FIG trees in small pots, intended for fruiting, should be shifted into a larger size, if they require it.

INSECTS should be looked after. The autumn caterpillar is usually very troublesome upon pear and apple trees, and they should be destroyed as soon as they make their appearance.

FLOWER DEPARTMENT.

The preparations for winter commence with this month; where there are one or more greenhouses many plants will be required to keep up a good display from autumn till spring, besides what may be termed the permanent kinds. These should now receive attention, shifting them to obtain a good growth, and pruning them so as to have dwarf bushy specimens. Soil may now be prepared for winter use, as it is all the better for being turned over three or four times before housing in the autumn.

CAMELLIAS should now be looked over, and if any of the plants need re-potting this is the time to do it. Keep them well syringed. Grafting may be done this month.

AZALEAS should have the same attention as camellias. See that they are not attacked by the thrips.

CINERARIAS, divided and potted last month, will now require a shift into larger pots. Keep them in a cool frame. Seeds may be planted now.

CALCEOLARIA seed should be sown this month.

CHINESE PRIMROSES should have a shift into larger pots, and be kept in a frame where they can be protected from the hot sun.

PELARGONIUMS, headed down last month or early this, should be repotted as soon as they begin to break.

ACHIMENES, now growing freely, may have a fresh shift into larger pots.

OXALIS BOWIEI and hirta should now be potted.

HEATHS, growing vigorously, should have a shift into larger pots; top the growing shoots to make the plants bushy, and water freely in dry weather. Syringe often.

CALLAS should be repotted this month.

MIGNONETTE AND SWEET ALYSSUM, for winter blooming, should be planted now.

TROPÆOLUMS should now be repotted and trained up to neat trellises.

VERBENAS, for winter blooming, should be repotted and kept in a frame, pinching off the tops often to get a stocky growth.

GESNERIA ZEBRINA should be potted now.

BEGONIAS should be repotted and plunged in a warm border.

CHRYSANTHEMUMS should have another shift into larger pots, and be plunged in the open border. Stop pinching the shoots after the middle of the month.

ORANGES should be repotted or top-dressed and plunged in the open ground.

MONTHLY CARNATIONS should be layered, and early young plants repotted.

CUTTINGS of all kinds of plants for winter stock may now be put in, selecting such as require it first, and proceeding with others as leisure permits.

JAPAN LILIES, now going out of flower, should be sparingly watered.

FLOWER GARDEN AND SHRUBBERY.

The late fine rains have given a fresh start to vegetation, and consequently a vigorous growth of weeds. With the warm sun these will make headway, and will require active exertions to keep them down. Hoe and rake the borders often, and keep everything neat and clean. Mow the lawn weekly, cut grass edgings, and clean and roll the walks.

DAHLIAS should be kept neatly tied up and the lower laterals cut away. Water if the weather proves dry.

CARNATIONS AND PICOTEES should all be layered immediately.

NEAPOLITAN VIOLETS should be hoed often and watered, if dry weather.

WHITE LILIES may be taken up and reset this month.

VERBENAS AND PETUNIAS should have their branches carefully pegged down as they advance in growth.

HOLLYHOCK seeds may be planted now.

ROSES may still be budded.

SEEDS of choice or rare plants should be carefully secured for producing new varieties.

PLANTS of various kinds in pots may be plunged in the open spaces in the border, where they will add much to its decoration.

THE IMPROVEMENT AND PREPARATION OF SOILS.

No matter how much skill we may possess, how much care we may give, or how much time we may lavish upon a crop, if the soil is not in the right condition our efforts will avail but very little. Without due improvement and preparation it will be impossible to arrive at any satisfactory results. It is the whole key to the great art of successful cultivation.

No subject is more important to the cultivator than this; yet it is one that is rarely thought of in making a new garden, and in most instances entirely neglected; or if attempts are made at improvement, they are done in so imperfect a manner, as to be but little better than if not done at all. If there are any who doubt the necessity of such thorough preparation, let them examine the products of gardens which have not undergone such preparation with those which have. The result will be a convincing proof of the absolute importance of properly preparing every new soil and renovating every old one, whenever good results are expected. It is not uncommon to hear cultivators wondering about the difference between their and their neighbors' crops; with precisely the same locality, the same soil, and the same care and attention, they fail to produce anything like similar results, and without endeavoring to ascertain the cause of such difference, they conclude at once it is owing to some superior knowledge which they do not possess, or that their soil is unfitted for the purposes of culture.

We have known repeated instances of such cases on the part of various cultivators of fine fruits. They have apparently neglected nothing in their eager desire to raise the finest specimens. Manure has been supplied in abundance—the best trees have been selected—the greatest attention to pruning given—water has been liberally administered and mulching duly attended to—yet all this would not accomplish what had been done by others with apparently no par-

ticular labor or care. The secret is inexplicable, and they frequently become disheartened and give up all attempt to improve this condition of things, believing the cause lies beyond their control.

Yet all this results from the want of a knowledge of the great principle upon which thorough cultivation depends, viz., a deep and mellow soil, where the roots may roam unchecked and find the food which they need for their sustenance and support. For though manure and water are the food of plants, it is forgotten that the soil is "the stomach or laboratory in which it is digested and rendered fit for being taken up by the spongioles of the roots." If, therefore, there is any check to the free extension of the roots, their power to take up food is diminished, and the growth of the plant decreased in proportion as the supply of nutriment is withheld. Hard, coarse, lumpy soils, even if deep, as well as thin earths, with a firm subsoil, are both unfit to produce a healthy and vigorous growth, because in the one case the roots meet with obstructions in their search after food, and in the other they are unable to penetrate it, only with a serious loss to the energies of the plant. All earths are not of this description, but unless soft and peaty the majority of them partake of this character and need improvement and preparation before they are fitted to the purposes of good gardening. It is not our intention to take up the whole subject of soils, as that would require many pages, but merely to give some hints which may be of general utility to the cultivator, that he may commence his work right and not find it necessary, after years of toil, to go all over it again.

The soils which perhaps embrace the greater part that are met with, except in the prairies of the West, may be classed as sandy, clayey, or loamy. Sandy soils are far the most general everywhere, the clayey ones next, and the loamy ones much more rare. We shall briefly notice them and consider the operations necessary for the improvement of each.

SANDY SOILS are such as are composed mostly of silica, without sufficient organic matter to render them cohesive.

They are consequently loose, never having a firm surface, and rarely sustain a compact growth of grass or other vegetation. They are incapable of retaining moisture and cannot hold manures any length of time, as it is soon washed away or escapes by evaporation. They possess, however, many valuable qualities; they retain heat longer than any other soils and are consequently well adapted to the growth of early crops of all kinds. They are also easily worked, and particularly well adapted to the growth of seeds or early vegetables; properly prepared they may be rendered more valuable than those of a heavier texture.

CLAYEY SOILS are such as have alumina for their base, and are naturally cold, adhesive and wet, in fact the very reverse of sandy. While the latter are loose and porous, the former are firm and cohesive, easily over-saturated with water, or baking hard by heat. They are not permeable by the atmosphere and do not absorb heat. Naturally and unimproved a heavy clayey soil is scarcely fit for the growth of plants.

LOAMY SOILS are such as have a due proportion of sand, or calcareous earths, with organic matter. They are never too hard or too loose; do not bake by heat nor become over saturated with moisture. They are not as early as sandy soils, nor so late as clayey ones. They possess all the good qualities of both and have none of the bad qualities of either. When such can be found, they require less expense to prepare them for vegetation, and retain their good qualities an indefinite length of time.

These are the soils which prevail in a larger portion of the country on the Atlantic coast, and sometimes all are found within a very limited space. Our own grounds of fifty acres contain all three, and in addition, peats and bog, and we have devoted a great deal of labor in subduing and rendering them suitable to the purposes of vegetation. It is from our own experience that we can appreciate the labors, which others will have to perform, to render unfavorable soils permanently profitable and productive.

The principal operations for improvement are Draining; Changing their Texture; and Trenching and Pulverization.

DRAINING.—This is a most important operation upon cold, wet or heavy soil, and is even beneficial on all but the driest sands, for often they are affected by springs near the surface, which keep the subsoil saturated when the surface is apparently dry. It also raises the temperature of soils, improves their mechanical texture and admits of their being more easily worked early in the season.

CHANGING THEIR TEXTURE.—After our description of sandy and clayey soils, with the fact that a majority of our gardens are naturally of one or the other of these qualities, it will be apparent that they must need much labor to render them fertile and adapted to the purposes of vegetation. In fact it is the first thing to be attended to. Sandy soils are greatly improved by the addition of clay, and clayey soils by the addition of sand. A small quantity of either of them will improve the other far more than is generally believed. To the sandy soil the addition of the clay renders the surface cohesive, and susceptible of retaining moisture long, while the clayey soil becomes more porous and open, admits atmospheric warmth, and is prevented from baking on the surface. "It is astonishing," says a recent writer, "how small a proportion of loose sand will convert a clay into a good loam, the parts of which, when moistened, form a clod when drying." By the addition of two inches to the entire surface, it becomes a good loam, while the same amount of clay added to sand produces a similar soil. By the aid of manures they are soon made rich and fertile enough for any crop, provided the intermixture has been thoroughly made, which can only be done by

TRENCHING AND PULVERIZATION.—These operations complete the work necessary for the improvement and preparation of soils. Without them little of permanent good will be effected. For all garden purposes the soil should be at least two feet deep, and if three all the better; if not naturally more than twelve inches, the proper depth must be attained by an equal intermixture of the subsoil with the surface, and the

addition of good compost or manure, together with the sand or clay as the case may require. These must be turned over or trenched in dry weather, pulverizing the whole as much as possible, repeating the operation if necessary to effect this in a thorough manner. If intended for trees, where the operation cannot be repeated, it will be necessary to perform the work well, and add liberal quantities of manure; but if for vegetables or flowers, the trenching can be repeated in a year or two, and the change be more beneficial than if completed at first. It is the practice of the gardeners who supply the great market of London, to manure and trench after every crop; it brings the fresh bottom soil to the air and light to be acted on by the weather, absorb fertilizing substances from the atmosphere, and become enriched and better fitted for supplying food when again placed within the reach of the extending roots. The best materials for enriching sandy soils are cow and hog manure, and for clayey ones horse manure.

Of the practice and details of these improvements we have not time to speak. The draining must be thorough in whatever way it is done—the admixture of soils made at the proper season, and the trenching performed by experienced hands. Ground thus improved and prepared, with a due attention to the annual application of good manures, will last a life time, and yield an amount of satisfaction to those who love to see luxuriant vegetation, as well as receive a remuneration for their labor, which no unprepared soils can possibly afford.

ON LANDSCAPE.

BY WILSON FLAGG.

IN this essay it is not designed to treat of the cultivation and improvement of landscape, but rather of its natural features, and of the different impressions which they produce upon the mind. I use the word landscape to signify the

general surface of the country, and not in the limited sense in which it is used by the painter, who regards a landscape as a circumscribed scene in nature, consisting of *foreground*, *middle-ground* and *distance*, so combined as to make a fit subject for a picture.

Landscape, in general, may be classed under four heads. 1. Level landscape. 2. Rolling, or undulating landscape. 3. Broken, or irregularly undulating landscape. 4. Mountainous landscape.

1. *Level landscape*, comprehending all that surface which is usually termed "flat country," requires no particular description. A great deal of it is seen in the Southern States, near the coast, extending inwardly with but little variation, until it reaches the mountainous region. Though not favorable to extensive, sublime or beautiful prospects, it may, under certain circumstances, be productive of each; and I am not sure that an uninterrupted level of such extent as to be bounded only by the verge of the horizon, would not be attended with sensations allied to the sublimity of a mid-ocean scene. This effect could be obtained only in particular situations, as when the whole country is open, and the view interrupted neither by woods or village settlements. The very desolation of such a scene must powerfully awaken the emotion of sublimity. Level landscape in general is very monotonous, even when interrupted by woods and villages. One becomes soon weary of seeing only near objects, and however different the scenes through which he passes, he longs to behold some diversity of surface. But levels of moderate extent, surrounded by hills, mountains, or any sort of rugged and elevated grounds, possess an indescribable charm, and may be regarded as the most beautiful portions of uneven or mountainous country.

There is another description of level landscape which is particularly attractive. I allude to those wide plains, which are interspersed with tracts of wood, rising out of them like islands out of the sea. We often observe this appearance in marshes and extensive moorlands. The dead level of the greater part is broken by a gentle rising, which is perhaps

the remains of a shoal, over which the alluvial deposits have not risen. Perhaps it was originally caused by a drift of sand, which gave origin to brambles and vines, and thus laid the foundation of a wood. A farm, or a small hamlet of cottages, is often planted on one of these islands, and is rendered pleasingly conspicuous by the open level of the surrounding plain. Some of these peculiarities of landscape, on a small scale, may be observed on the salt marshes on the eastern coast of Massachusetts. In the interior they are not unfrequent, on a still smaller scale, in extensive peat meadows.

An island in a meadow is not less attractive than an island in a lake, though it forms a more striking contrast with the water than with the level land; there are pleasant pastoral ideas associated with the former, that yield peculiar attractions to a farm in such a location. A rustic lane winding through the moorland in the direction of this little island farm, and finally reaching it, gives one a charming idea of its accessibility, and of seclusion without solitude. In an island on a lake or the sea, the idea of solitude is so intimately blended with that of seclusion, as to interrupt the train of agreeable fancies which must accompany any scene to render it either beautiful or attractive. Still, a small island in a lake, regarded merely as a feature in the landscape, is more beautiful than in a sandy plain, or a green level moor.

A little reflection would make it evident to us why a cottage or farm on the island in the moor must be more interesting than one seen among many others in the general landscape. In the former instance it makes a whole picture, and our attention when directed to it is undivided. We can easily sympathize with the inmates, because they seem to be but one family. We can carry along the whole picture of their life and occupation in our mind, which would be put into confusion by an effort to go along with the occupations of a number of families, as in a village. A picture in real life, or in real nature, as well as in a painting, must be circumscribed within narrow limits, to fix our attention and to absorb our interest. Any pleasing image that takes posses-

sion of the mind is not then immediately crowded out by others which surrounding objects may suggest. This uniqueness is one of the qualities necessary to give a picturesque expression to any scene either in nature or art. I believe we may account, on this principle, for the fact often observed, that a man of highly cultivated powers, but of limited acquirements, has more intellectual force than others of similar cultivation, whose minds are stored with a great variety of knowledge.

There is still another picturesque effect to which level landscape may be favorable, when it is generally wooded. I allude to those openings formed either by nature or by the pioneers, and spreading over the area of a mile, or a few hundred acres of perfect level. The delightful character of such a retreat is evident at once, on suddenly emerging from the depth of a forest. Such are the green savannas that occur in the pine-barrens in the Southern States, or openings purposely cleared for planting. Many such are to be seen in that region, where the cottages of the unindustrious negroes, surrounding the house of the planter, may add to the picturesque effect of the scene, in the minds of those who are not too vividly impressed by the idea of the evils connected with slavery. For pleasant seclusion, an opening of this description in the woods, rendered conveniently accessible by a by-road through the forest, cannot be surpassed. But to render such a place desirable as a residence, a hill should be near, from which, on emerging from our retreat, we could obtain a pleasant view of the surrounding country. A somewhat extended prospect must be available to every lover of nature. If it do not lie immediately before his windows, it must be within reach by a short walk.

A level country has many advantages even of those which are purely picturesque. The appearance of extensive fields of grass and grain, interspersed with wood, opening occasionally into a little village settlement, affords a pleasing variety of scenery, in spite of its level character. Here every scene comes suddenly upon the sight, since one obtains no intimation of it by distant glimpses from high

places; a level landscape permits no such anticipations. Hence this kind of scenery is not without some favorable comparisons with that of other descriptions of surface. But nature has happily interspersed the majority of level countries with occasional elevations and depressions, so that an extensive tract of land can seldom be found, without an occasional advantage of this sort.

Of all situations, a level is the most unfortunate when it forms a boundary of the sea. The sea-shore needs the accompaniment of rugged and elevated banks, from which its distant waters may be seen, and from which the vessels on its bosom may be watched, until they fade from the sight. Still there are but few persons who are insensible to the beauties of the seashore, even when it is bounded by a coast that rises only a few feet above its level. Not even this circumstance can divest it of its grandeur, or diminish the romantic interest which we feel in the great space that lies beyond the scope of our vision.

2. *Rolling or undulating landscape* is generally regarded as the most beautiful. It is undoubtedly the most capable of being highly dressed, and is that which is most favorable to tillage, because it admits of more complete drainage than a flat country, and the hills may be planted even to their summits. This description of landscape prevails extensively in a great part of the State of New York. Hence in no other part of the country are the evidences of an abundant harvest so beautifully displayed as in that State. These smooth and regular swells of land, being in May perfectly green with wheat, over an extent of thousands of acres, exhibit their produce in the most advantageous light. Here, likewise, the primitive wood is pleasingly interspersed with the fields of wheat and maize, each being sufficiently extensive to prevent that disagreeable patch-work appearance which is visible in some of the settlements of New England, where the smaller fields are devoted to a greater variety of crops.

In general a rolling landscape is more pleasing if the greater part of the wood is on the elevations, and the lower part of

the slopes and the valleys are open and devoted to tillage. Not only do the woods, when thus arranged, give greater apparent elevation to the hills and greater depth to the valleys, but they suggest instantly to the mind the idea of shelter, protection from the winds and greater comfort, both to the flocks which are pastured there, and to the dwellings built under their shadows. Still, it cannot be denied that a gently rounded hill, divested of wood, and covered with green herbage, is a very beautiful feature in a landscape. Abrupt elevations, on the contrary, ought always to be wooded. Wood occupying the narrow dales between undulating hills, while the hills are bare, always forms an unattractive scene. The wood shelters that part of the land which is already sheltered by the hills, and leaves the latter exposed to the bleakness of the winds. If the hills are cleared the valleys also should be cleared, in all tracts of country where the undulations are comparatively even and regular. When a valley is of sufficient extent to admit of a village settlement upon it, it becomes an exception to these remarks, as it is an exception to the general character of the surface.

An undulating landscape does not truly resemble the waves of the sea, which are usually crested and often broken, but rather the gentle swelling of the ocean in a calm, after some disturbance. This sort of landscape bears a greater resemblance to the drifted snow, which commonly lies in even swells, of different sizes and outlines. Such a form of surface is generally considered beautiful, because we associate the idea of beauty, more or less, with comfort and abundance; and this description of ground affords better evidence of these advantages than any other, when under an equal amount of cultivation. The lines of the surface are all gentle curves, sufficiently varied in their forms and sizes to make an agreeable combination of figures. All this is suggestive of easy ascent, of pleasant facility of travelling, of easy labor to the tiller of the soil, and to the tasteful improver. These are the ideas that enter the mind when viewing this description of surface, and cause it to produce

emotions of beauty. It is not that curve lines produce a more agreeable organic sensation than any other regular figures. Their effect is moral and suggestive, and depends on a pleasing train of thought to which they give origin. A broken and rocky surface, like that of most of the land in New England, must be more generally wooded, especially in its most abrupt portions, or clothed with green vegetation, to render it acceptable to the eye. When divested of trees and shrubbery it wears too much of an appearance of barrenness and desolation.

Yet a rolling landscape, like a level one, is very monotonous; and this monotonous appearance gives unusual charms to any interruption to the general character of the surface. A ravine, a ridge of steep and rocky hills, or a perfect level of considerable extent, appearing in the midst of this regularly rolling surface, is greatly enhanced in its pleasing effects. Hence this abrupt scenery is more highly esteemed in New York, where it is uncommon, than in New England, where it is the usual character of the landscape. I think the majority of people are more highly pleased with a country presenting to sight these even undulations, than with level or abrupt scenery. The continuous level, for obvious reasons, is not pleasing to any one; and the beauties of abrupt scenery are evident only to those who have a painter's eye, or whose minds are naturally tinged with romance. The agreeable expressions of abrupt landscape are historical, poetical or romantic. To the mere matter-of-fact man they suggest only the idea of the barren and indomitable character of the soil. To a person of poetic feelings this abrupt scenery suggests many pleasing and romantic images, which cause him to prefer it, under certain circumstances, to the more comfortable expressions of a gently rolling surface.

(To be concluded in next number.)

THE CATAWISSA RASPBERRY.

BY PROF. C. G. PAGE, WASHINGTON, D. C.

WE are greatly indebted to Mr. Joshua Pierce of Washington for his indefatigable zeal in bringing forward this valuable fruit. The berry is inferior to some others, in size and flavor, but its great recommendation is its continual bearing property. It commences to ripen fruit soon after the Red Antwerp is gone, and continues to bear until checked by hard frosts. I have realized an unexpected value in it as a source of new varieties, and to such an extent that ere long the Catawissa will be cherished only as a breeder. I have now two seedlings of the second generation from the Catawissa, and while the fruit of both is superior to the original, the bearing term is extended far beyond it. They commence bearing before the Red Antwerp and continue long after it is gone, and after two to three weeks' cessation commence bearing again and continue till frost. The seedlings from the Catawissa thus far are of special interest. In one instance I have a *fac simile* of the wild black raspberry, such as I gathered (under the name of thimbleberry) when a boy, in the old fields around Salem, Mass. I have also, now just ripening, two orange colored seedlings of delicious flavor and vigorous growth. Also one real scarlet, similar in flavor to the wild scarlet raspberry of New England, which is just beginning to ripen, and will evidently go on to bear through the season. As nearly all the progeny of the Catawissa possess the everbearing property, we cannot but look upon its introduction as the dawn of a new era in raspberry culture. The varieties are generally more hardy than the Antwerp, and the two kinds named above as bearing early and late are of gigantic growth. We shall look for some interesting developements in the descendants of this remarkable fruit, and anticipate a high position for raspberries among the pomological novelties of the day.

Prof. Page's estimate of the Catawissa Raspberry corresponds with our own, viz., that its greatest value is as a par-

ent from which to produce new and superior perpetual or everbearing varieties. We are happy to record the advancement which has already been made in this respect by our correspondent, and trust his success will not only induce him to continue his experiments, but incite other cultivators to make similar attempts at the improvement of such a valuable fruit. We have often remarked that we thought the raspberry susceptible of great improvement, and that if the same pains had been taken with it, as has been done with the strawberry, we should long ago have had new varieties very much larger and better than any we possess now.

The production of these everbearing fruits is of great importance; of the prolificness of the Catawissa in this respect there is no doubt. Its hardiness of constitution will undoubtedly enable us in time to secure not only a variety of extraordinary quality, but of much greater hardiness than any we now have, and withal a perpetual bearing habit which will supply us with an abundance of fruit up to the latest period of the year. It will give the raspberry a fresh claim upon the attention of all fruit cultivators.—Ed.

POMOLOGICAL GOSSIP.

UNIQUE DESCRIPTION OF THE DOYENNE' D'ALENCON PEAR.
“Flesh tinged with orange, coarse grained, but melting and juicy. Flavor, sprightly, vinous, good; slightly astringent near the skin. Ripens readily in autumn. It is recommended by the author, from experience, not to force the ripening of pears out of their natural season; but to mature them gradually and evenly, in rather a low temperature, giving sufficient air when the weather is favorable. The air should be a medium between dryness and a slight natural moisture, not in extremes of either. The Gray Doyenné is described by Col. Wilder in the Horticulturist, first established by Downing, and which leading work has also been well conducted ever since by good theoretical as well as

eminently practical men. It is now in very good hands, and has, as it deserves, a large circulation, and still increasing, as may be expected from the gloriously growing interest in horticulture and agriculture in all parts of the Union. Men are beginning to get their eyes open, at length, to their highest welfare, happiness, and wealth. Fruit should comprise one third of the human diet at least."

The above is from a review of Hooper's Fruit Book which we find in the *Ohio Cultivator*. We have not seen the volume, but learn from the above paper that it was designed to "correct the errors and avoid the faults of former works of the kind." We must confess from the review, which is by Mr. Bateham, formerly editor of the *Cultivator*, that we should think the object of the work just the reverse of the above, and rather intended to make "confusion more confused." If this is the result of the pomological progress of the West, their annual conventions and exhibitions, all the time and labor have been spent in vain. What the "Gray Doyenné described by Col. Wilder," the "Horticulturist first established by Downing," the "gloriously growing interest in horticulture and agriculture," "men beginning to get their eyes open," and "fruit composing one third of the human diet," have to do with a "concise description of fruits" we cannot exactly discover. Perhaps, however, the author does, and that is sufficient.

NEW SEEDLING PEAR.—We have received from Mr. J. Van Deventer, of Princeton, N. J., specimens of a new pear which originated in New Jersey. The pears were in very good order, though a little too ripe to form an accurate opinion of the merits of the variety. Mr. Van Deventer writes as follows respecting it:—

"I have had it in bearing some five or six years and am now satisfied that it is worthy of a name and more general cultivation. The great beauty of the fruit, its season of ripening, from 20th July to 10th of August, earlier than any other equally good pear, and but few days later than the Madeleine,—which I think it far excels,—will make it a very profitable market variety, and it is now a great favorite with

the confectionary and fruit dealers of the neighboring cities, so far as it has been introduced to their notice. The tree is a free vigorous grower, branches curved, erect, forming a regular handsome head; a great bearer, producing its fruit in clusters, ripening uniformly fair and perfect. I hope the fruit sent to you arrived in good order to be fairly tested, and should be glad to have your opinion of its merits."

The pears sent us were as large as the Madeleine, but more of the shape of the Jargonelle, being pyriform, and contracted near the stem. The color yellow with a fine red cheek, and a juicy and melting flesh, sweet and pleasantly flavored. Most of the specimens had begun to be little soft at the core, but we should judge if gathered in due season and properly ripened it would quite equal if not surpass the Madeleine.

WILSON'S ALBANY STRAWBERRY.—We notice some flattering accounts of this new strawberry in the *Country Gentleman*. It originated with the late Mr. Wilson, nurseryman, of Albany, N. Y., and has not yet been cultivated very extensively out of that locality. We have not yet grown the variety or seen it under culture in the neighborhood of Boston; but if it will sustain the reputation which is given it, then it will soon find a place in our amateur collections at least. The only fear that we have in regard to it is that the extreme praise which it has received will be an injury to it in the end. Take the statement for instance which we find in the above paper, viz., that "as regards productiveness, it has yielded *many times* the quantity of Hovey's, and promised to continue in bearing *several weeks* while the latter was already out of fruit. It has excelled in size, and everybody prefers its flavor. Among the berries have been gathered a number full four inches in circumference, and of four which ripened at the same time on one stalk, one measured more than four inches, and the others more than three and a half."

Now this may appear to some a very extraordinary thing, but with good cultivation it is a very small affair. The best Hovey strawberries sold in Boston market frequently meas-

ure five inches in circumference, and those which are yearly exhibited before the Massachusetts Horticultural Society measure six inches, and weigh over half an ounce each. In regard to the productiveness of the Hovey, twenty-four square feet have produced twelve quarts, and *many times* this would be a rather big crop; as to the period of bearing, the Hovey lasts five weeks, and if the Albany continues *several weeks longer* this would give some eight or ten weeks—making it almost a perpetual bearer.

We do not doubt that the Albany is a fine strawberry, and hope it may have a fair trial; but such exaggerated accounts lead many cultivators to expect a great deal, and the failure of the variety to fulfil their expectations too often consigns it to oblivion, whereas it may possess merits which render it a useful and valuable fruit. It is the history of nearly all the seedlings which have been raised the past twenty years, some fifty of which, including the McAvoy Superior,—which was awarded the prize of \$100 as the best strawberry in Cincinnati,—were superior in size, productiveness, excellence and hardiness, to any other variety. It would be difficult to find many of them now, except in the papers and catalogues where they have been described.

THE CANADIAN CHIEF GRAPE.—In our March number, (p. 117,) we gave a full account of the origin of this grape, so far as it could be obtained from our correspondent Mr. Reid, who is well acquainted with the history of the variety.

Very recently we have received a communication from Mr. Fearman, who possesses the original vine, taking us to task for expressing our opinion to a private correspondent that it was not a *hardy grape*. Not having tried the grape under our own eye, in the account above referred to we expressly stated that “its hardiness remained to be tested.” Wishing that all who desired to do so might give it a trial, and unable then to condemn it from personal experience, we did not wish to throw anything in the way of its cultivation by all who were eager to possess it after reading its history. But in writing to a gentleman who inquired of us concerning it, we stated our private opinion that it was not hardy—for this he complains in the following letter:—

“I have received a letter from Mr. E. F. Ensiyon of Madison, Ohio, ordering vines of the Canadian Chief grape; he states that you have written him that the C. C. grape is not hardy. Now sir, can you give me your reasons for stating that it is not hardy? Have you cultivated it, or have you seen it in bearing, or have you any further information concerning it than you have received from Mr. Reid, in your March number? I will state a fact to you. We have a Canadian Chief standing in the garden with two Catawbas; all in the open air; all received the same care or treatment; all have the same position as to sun, &c. The Canadian Chief matured its fruit, part of which was sent you by Mr. Reid before it was fully ripe, but the Catawbas never ripened so to be fit to eat, and this winter has killed both of them. whilst the Chief is alive with a good crop on it.

“I do not think it right for a public journalist to injure any one’s business until they are sure that that business is a fraud upon the public,—therefore my complaint to you. I answered Mr. Reid’s letter last March, but I have never learned that you have made any remarks on it, so I thought I would write you on the matter.—*I remain yours, truly,*
F. W. FEARMAN, *Hamilton, C. W., July, 1857.*”

And now, as Mr. Fearman asks us so pointedly “to give him our reasons for thus stating it is not hardy,” we will do so very plainly, as it is a duty as a journalist we owe to the public, and one we would have done before had we been in possession of the facts. They are as follows:—

Mr. E. A. Brackett of Winchester, who cultivates a great number of grapes, has the Canadian Chief, obtained from the original vine, and fruited it last year. He informs us that the wood was killed completely to the ground the last winter; that it is as tender as any foreign grape; that it is the most liable to mildew of all the grapes he cultivates, and in fine that as a variety for out-door cultivation it is entirely worthless. These reasons we trust will be satisfactory to Mr. Fearman, for our opinion that it is not a hardy grape.

THE LAWTON AND DORCHESTER BLACKBERRIES.—Perhaps we should not state what is correct if we were to say the

Lawton Blackberry had been greatly overrated, but we do know we state what is true in saying that the Dorchester has been greatly underrated. If we compare the Lawton with the wild high or low bush blackberry of our pastures, it has not been praised too much ; but if we compare it with the Dorchester, it has been rated far above its merits. Both the Lawton and Dorchester are fine fruits, but the latter is superior to the former in almost every quality which it possesses. The fruit is considerably larger than the Lawton ; it is a much firmer berry ; holds its brilliant glossy color after gathering ; bears carriage well ; and is sweet and excellent even before it is fully ripe. It is as vigorous a grower, quite as hardy, and quite as prolific as the Lawton. A fair trial has been had of the two kinds by the fruit committee of the Massachusetts Horticultural Society, for two years, who have awarded all the premiums to the Dorchester.

The great faults of the Lawton are that unless fully ripe, so as to drop from the bush, it is so sour and bitter that it can scarcely be eaten ; and when fully ripe it is so soft that it will not bear carriage, and the color changes to a bronzy red, as if the fruit had been gathered long and had begun to decay. So far as our taste goes, when quite mature we like it as well as the Dorchester ; the acid which it has is refreshing, especially when eaten with cream and sugar. But it is so difficult to gather it in this way, that, as a market fruit, it cannot compare with the Dorchester.

And this leads us to notice the ill effects which result from a poor name. The Dorchester blackberry was for a long time called the Improved High Bush, and in consequence has been supposed, by a majority of cultivators, to be nothing but the wild blackberry improved by culture. This, however, is not so ; it is a seedling which originated in Dorchester, and was introduced to notice upwards of ten years ago, by the late Samuel Downer of that place, and Capt. Lovett of Beverly who gave a full account of it, with directions for its culture, in our Magazine for 1850, (XVI, p. 261.) We trust now that its qualities and real character are becoming better known, it will be planted in every gar-

den wherever the Lawton is deemed worthy of a place, as it will give much more satisfaction to the amateur and bring a far higher price in the market.

THE MAPLES.

BY WILSON FLAGG.

IN the New England States the maples are a very important and conspicuous family of trees. Not only do they yield the inhabitants a large quantity of valuable fuel, but they are of great importance in cabinet work. It is the rock maple that furnishes that remarkable description of wood called *bird's-eye maple*. The peculiar spots in this wood are formed by a twist in the fibre produced by the commencement of the growth of a new twig which was immediately overgrown by the increase of the branch, and thereby rendered abortive. They are, in fact, the roots or germs of small branches that were never put forth. The number of species of maple in this country is not great, but these few are spread widely and numerous over all the land. Although there are about forty species of maple known to botanists, only five species have been found in Massachusetts, and two of these are shrubs.

The most common species in the vicinity of Boston is the red maple, (*Acer rubrum*.) It is remarkable that this tree should also be called the white maple, the first term having reference to the blossoms and the autumnal leaves, and the last to the whiteness of its wood. This tree is one of the most ornamental of its tribe, displaying tints in autumn, which are more various than those of the rock maple, and being remarkable for the profusion of crimson flowers, that appear before the leaves in the spring. As the flowers fade, the samaræ or keys that succeed them retain the same crimson hue, gradually fading into brown as they become mature, until the leaves are fully expanded.

The leaves of this species are comparatively small, but constitute in the aggregate a very dense foliage of a fine dark verdure. When they first appear in plaited folds, the leaves and the recent shoots are of a reddish hue. They vary considerably in form and size, being generally divided into five palmate lobes, with their margin slightly toothed. The leaves of the red maple are often tinted very early in the season, especially in swampy grounds, where they sometimes display their autumnal tints before the middle of August. This premature ripeness seems to be caused either by some want of vigor in the tree, or by the alternate action of heat and cold which are felt in the swamps in August to greater extremes than in the uplands. These colors vary considerable in different trees, being yellow in some, and orange, scarlet crimson or purple in others. The most prevalent hue among them is scarlet. Some botanists have been led to suppose, from the difference in the tints of different trees that there are several distinct varieties of the red maple.

The red maple is a finely shaped and large tree, generally round-headed, minutely subdivided into branches, and exceeded by few trees in the beauty of its ramification. It is of rapid growth, but flourishes best in a damp soil. Considering the beauty of its crimson blossoms, its dense and dark green foliage, breaking into a variety of beautiful colors in the autumn, I should assign to this species the highest rank among the maples, as a mere ornamental tree, though it comes second to the rock maple in point of utility.

The rock maple (*A. saccharinum*) is distinguished from the preceding species by its larger leaves, which are generally of a brighter green, and are remarkable for the roundness of the notch that separates the lobes of the leaf. This is also a very neat and beautiful tree, similar in its manner of growth to the red maple, having a great deal of elegance without primness, and majesty without ruggedness or irregularity of growth. It is far from being monotonous in its shape, some individuals having finely rounded heads, others being cylindrical, and a few occasionally finely tapered and pyramidal. It is very full of branches, so that, perhaps, few trees produce a greater density of shade.

The autumnal hues of the rock maple vary from a bright yellow to a scarlet, which is the predominating hue. This species is remarkable for an appearance, which, though sometimes observed in the red maple, I have seldom noticed in other trees. I allude to the tinting of the foliage in a particular spot, while all the remainder is as green as in summer. Sometimes a single branch on one side of the tree will be tinted in every leaf, of a bright scarlet, while all the remainder of the foliage is unchanged. This appearance does not seem to be caused by any defect in the colored branch, and it is often very general throughout a forest of rock maples. Sometimes the whole summit of the tree will be brightly illuminated, while all the lower part retains its unaltered verdure, and does not become tinted until a week afterwards. I believe the foliage drops from these prematurely tinted branches before it drops from other parts of the tree.

The wood of this tree receives an excellent polish, and is extensively used for veneering in cabinet work. All the varieties of its grain, the curled, the bird's-eye, and the straight grained, are extensively used in this manufacture. In architecture it is seldom employed, as it is not durable when exposed to alternate moisture and dryness; but it is employed to a considerable extent for the keels of ships, where, being constantly submerged, it does not decay.

The value of the rock maple for the production of sugar, it is impossible to estimate. Though it can never rival the sugar cane in this product, its importance is not likely to be overrated because its commercial value bears a very small proportion to its real value. The time will undoubtedly arrive, when extensive plantations of rock maple will be made for this purpose; and when they have come to maturity, the old trees, whose sap has ceased to be abundant, may be used for fuel. This tree may be successfully planted in any part of the continent, north of the point at which the Chinese sugar cane refuses to be productive. Thus every part of the North American continent may produce its own sugar.

The rock maple has not so extensive a geographical range as the red maple. It reaches from Canada to the mountains in Georgia, but is seldom found on the plains south of the latitude of Long Island Sound. New England, including the adjoining territory, seems to be the central region of its growth and the part of the country where it is most abundant. In the eastern part of Massachusetts it is rare; but it is the principal timber tree of the Green Mountains, and of the continuation of their range in Massachusetts.

The white maple (*A. dasycarpum*) is preferred as an ornamental tree to the other species in the vicinity of New York and Philadelphia, where it is extensively planted in private inclosures and by the roadside. The preference is given to it, undoubtedly, on account of its greater suitableness to the soil and climate, and its greater thriftiness of growth in dry soils, compared with the red maple. It is inferior, however, in most desirable points, to the other two species; its foliage, though glossy and silvered, is not so dense; it emits a disagreeable odor, and is destitute of those tints which distinguish the other American maples in the autumn. Its recommendations consist of a superior thriftiness in ordinary situations, its somewhat wider spread of the branches, and the silvery lustre of its bark and foliage. It has a loose ramification, and a certain prim and artificial look about it, which may possibly have rendered it fashionable in certain localities. This tree bears the name of river maple, from its frequency on the banks of streams. It is comparatively rare in Massachusetts. The wood is soft and white, and of little value in the arts.

The striped maple, or moosewood (*A. Pennsylvanicum*,) is a very remarkable tree, though it rarely exceeds the size of a shrub. There are but few trees in the forest that surpass it in grace and beauty. Emerson is of opinion that it deserves careful cultivation. "The singular striated appearance of its trunk at all times, the delicate rose color of the buds and leaves on opening, and the beauty of the ample foliage afterwards, the graceful pendulous racemes of flowers, succeeded by large showy keys, not unlike a cluster of in-

sects, will sufficiently recommend it. In France, Michaux says it has been increased to four times its natural size, by grafting on the sycamore." In this country it might be successfully grafted on the white maple.

The striped appearance of the bark of this maple is owing to the peeling of certain of the outer portions; and the name of moosewood was given it in Maine, where the moose is seen to browse upon it in the winter. We seldom find this tree except in the shade of a forest, forming a part of the under growth of larger trees. There is another small species of maple, called the mountain maple, which is only about half the size of the preceding. It is, however, a graceful shrub, and in autumn both this and the striped maple rival the other species in the beauty of their coloring.

THE CHINESE AZALEA.

BY THE EDITOR.

ONE of the greatest aids to an amateur in the selection of plants, is a correct descriptive list of the best varieties, by which he is enabled to secure a due proportion of colors, and that variety which makes up the beauty and brilliancy of a collection. It is not to be expected that catalogues will give the desired information though they may indicate in a brief manner the principal colors of some families of plants, and hence he must look to other sources for information. It is this which it is our purpose to supply.

Not many years ago, certainly less than twenty, we do not think more than half a dozen varieties were to be found in our collections, and only the curious amateur possessed more than two, the old *phœnicea* and *alba*. Loudon in his *Hortus Britannicus*, brought down to 1839, only enumerates twelve varieties. At the present time the number exceeds one hundred, though all of them are not of equal merit. It was not until the introduction of the beautiful *variegata* from China in 1833, that many new and really distinct vari-

eties were produced. It is from that period that the azalea dates its present popularity, and since then the English and Continental amateurs, as well as our American cultivators, have given more attention to it and produced many splendid and remarkable varieties.

The first American seedlings of any note were raised by Mr. Peter Mackenzie of Philadelphia, and were described in our Magazine for 1841, (VII, p. 223.) Some of them surpassed any of the European varieties, and a few of them at this day are among the showiest azaleas. Mr. R. Buist of the same city, Messrs. Feast of Baltimore, Col. Wilder and Messrs. Wales of Dorchester, and other amateurs, have produced seedlings. Our own experiments with the azalea were first made in 1843, when we raised a large number of seedlings, four or five of which are remarkably fine, though only two of them have been named and introduced into general cultivation. With few exceptions, however, the great number of kinds in our cultivation are English or French varieties. We trust, however, that our American seedlings will, ere long, as some of them now do, surpass these productions of our transatlantic friends, and find a prominent place with them in every greenhouse.

We shall classify the varieties according to their principal tints, as follows:—

WHITES.

- | | |
|---------------------------|-------------------|
| 1. Alba, (the old white), | 6. Mont Blanc, |
| 2. Alba perfecta, | 7. Mattapan, |
| 3. Alba magna, | 8. Narcissiflora, |
| 4. Alba pleno, | 9. Phœnicea alba, |
| 5. Leucomegestre, | 10. Snowflake. |

No. 1 is the old white, so long the only white cultivated in our collections; it is an abundant bloomer, and still a desirable sort, but its foliage is not so large and fine as some of the newer ones, nor its flowers as large and showy. No. 2 has a very neat and compact habit, and fine large flowers. No. 3 is new, with somewhat of the habit of the variegata, and with very large flowers. No. 4 is slightly double, but

is not so profuse in blossom as the others. No. 5 is showy and fine, with a vigorous foliage. No. 6 is new, of a somewhat slender habit, but with fine flowers. No. 7 is an American seedling surpassing all the others, both in its vigorous habit and the size of the flowers which are nearly four inches in diameter; the petals are of remarkably firm texture and of the purest white; it is not yet introduced into general cultivation. No. 8 is a variety received from China, with semi-double flowers which are abundantly produced; but its habit is not very vigorous nor its foliage very good. No. 9, though a good white, will not compare with several in this class; its habit is rather straggling. No. 10 is a seedling of ours, superior to the old white, retains its foliage well and produces large flowers.

WHITE GROUNDS, STRIPED OR TINTED.

- | | |
|---------------------------------|--------------------------------|
| 11. <i>Admiration</i> , | 16. <i>Gledstanesii</i> , |
| 12. <i>Bealii</i> , | 17. <i>Madame Miellez</i> , |
| 13. <i>Beauty de l'Europe</i> , | 18. <i>Toilette de Flora</i> , |
| 14. <i>Criterion</i> , | 19. <i>Variegata</i> , |
| 15. <i>Exquisita</i> , | 20. <i>Vittata</i> . |

The additions to this beautiful class have been numerous of late years. Since the introduction of the *variegata*, the attention of amateurs has been devoted to the growth of striped varieties, with a more vigorous habit than the parent,—which is difficult to manage,—and their efforts have been very successful. No. 11 is one of the latest improvements and is really a most beautiful plant; its habit is good and the flowers distinctly striped. No. 12 is a Chinese importation also very fine. No. 13 is a French variety, of great merit, the stripes being of a nearer approach to scarlet than the others; it has, however, a rather delicate habit. No. 14 is new, somewhat in the style of *variegata* but a rounder and better flower and the plant has a nicer habit. No. 15 is well known as truly deserving its name; its habit is robust and if the flowers were not quite so starry it would be difficult to surpass it. No. 16 is an old favorite, having been frequently exhibited; it is still one of the best, but

somewhat difficult to manage. No. 17 is new, and we have only seen a few imperfect flowers on a freshly imported plant, but it appears to be a superb acquisition. No. 18 is nearly white, with slight streaks or pencillings of rose; it is a very large flower and of a robust habit. No. 19 is the parent of the variegated sorts, and when well grown remarkably beautiful. No. 20 is from China, where it was found by Mr. Fortune. Nearly all these varieties succeed best when grafted or inarched upon vigorous growing stocks like *phœnicea*; otherwise they are apt to die off suddenly.

REDS.

- | | |
|-------------------------|-------------------------|
| 21. Apollo, | 26. Osbornii, |
| 22. Decora, | 27. Perryana, |
| 23. Duke of Devonshire, | 28. Symmetry, |
| 24. Fulgens, | 29. Triumphans superba, |
| 25. Haynau, | 30. Danielsiana. |

In catalogues several varieties of azaleas have been described as scarlet; but this color in its purity has not yet been obtained. We therefore class them under the general head of REDS, by which we mean the various shades between brick red and a reddish scarlet. Nos. 21 and 23 somewhat resemble each other; they have a dwarf compact habit, and large round finely shaped flowers of a very brilliant color. 22 is superb; the color is very deep and rich and the habit of the plant all that could be desired. 24 is an old variety, of a tall slender habit and rather small flowers, but abundantly produced. 25 is new and exceedingly fine, with the habit of the *lateritia*. 26 and 27 are both remarkably beautiful; the former having a finely rounded flower of a soft but brilliant hue. 28 is well named; the flower in its outline forms nearly a perfect circle; the habit is compact and the bloom abundant. 29 is very showy and brilliant, a most robust grower with glossy foliage. 30 is very pretty with a tall habit.

CRIMSON AND PINK.

- | | |
|----------------------|---------------------------|
| 31. Carmine rose, | 33. Copei, |
| 32. Carnosa superba, | 34. Coquette de Flandres, |

- | | |
|------------------|--------------------|
| 35. Elata, | 40. Speciosa, |
| 36. Excellens, | 41. Speciosissima, |
| 37. Formosa, | 42. Triumphans, |
| 38. Remingtoni, | 43. Watsonia, |
| 39. Rosea magna, | 44. Wardii. |

Nos. 31, 33, 38 and 43 are American varieties raised by Mr. Mackenzie of Philadelphia, some years ago, and are very fine, particularly 33 and 38, the latter having very large and finely formed flowers; 33 is a most abundant bloomer, but the petals are slightly wavy. 32 is fine, with a more compact habit and smaller foliage. 34, 36, and 44 are similar, though varying in shade. 35 is very brilliant, with deep spots on the upper petals. 37 is new and superb. 39 is also new and excellent, with a pretty habit and well shaped flowers. 40 and 41 are similar in color but unlike in other qualities; the former is a huge flower, not so round as some, but bold and showy, the habit is pendent; 41 is the darkest of the two. 42 is of a light crimson shade, but distinctly spotted on the upper petals, with a rather stiff, erect habit. 43 has a tint of violet, which, added to its profuse flowering habit, renders it a desirable kind.

PURPLES.

- | | |
|------------------|-------------------|
| 45. Amœna, | 48. Mackenzieana, |
| 46. Coronata, | 49. Phœnicea, |
| 47. Crispiflora, | 50. Zenobia. |

The purples as a class have not the beauty attached to the others; still they are very showy and heighten by contrast the brilliancy of the deeper colors. No. 45 is a curious specimen of recent introduction from China; it is double, that is there are two flowers to each blossom, one inside of the other; the habit exceedingly dwarf, compact and beautiful, and the deep purple, almost violet flowers are produced in such profusion as to cover the plant. It is very hardy and easily grown. 46 inclines to the crimson shade, grows very vigorously, with handsome foliage and superb flowers. 47 is a Chinese species, remarkable for having the edges of the corols crimped or fringed; the color is also deep and rich,

and the foliage glossy and fine ; it is one of the best. 48 is of a purple hue with a straggling habit and large flowers. 49 is too well known to need a description ; it is the old purple azalea of all collections. 50 is a seedling of ours, with very large flowers, more of a lilac than a purple ; the petals are very thick and leathery ; it is a free grower and great bloomer.

SALMON, ROSE, ETC.

- | | |
|--------------------------|----------------|
| 51. Glory of Sunny Hill, | 53. Splendens, |
| 52. Præstantissima, | 54. Venusta. |

No. 51, though classed as a pink by some, approaches more to salmon, and might be called a salmon pink. It is very double, flowers freely, and is altogether the best and only good double sort we have seen. 52 is very beautiful. 53 has a tall loose habit, but produces an abundance of bloom. 54 is new and fine, with large flowers and a dark green neat foliage.

This may appear a large list and puzzle the amateur for a selection. All are not equally beautiful, though all are worthy of cultivation where there is room ; but for small greenhouses a selection may be made which will comprise the excellence of each class. Such a selection might include, among the Whites, Nos. 1, 2, 7 and 10 ; White Grounds, Nos. 14, 15, 16 and 18 ; Reds, Nos. 21, 22, 23, 26, 28 and 29 ; Crimson and Pink, Nos. 32, 35, 38, 39, 40 and 42 ; Purples, 45, 46, 47 and 50 ; Salmon, &c., the whole.

It is somewhat singular that no azalea has yet been obtained with yellow flowers. The most successful hybridizers have entirely failed. We are not, however, without hope that it will yet be produced. It would add greatly to the interest of this superb flower.

Our descriptions are made up from such varieties as we have seen in bloom. We have several additional kinds which have a great reputation, and a number of remarkable seedlings, and new varieties are yearly produced by the English, French and Belgian cultivators. These we shall describe when we have an opportunity to see them all in bloom.

FLORICULTURAL NOTICES.

NEW LANTANAS.—The lantana is one of the most beautiful summer blooming plants, and is rapidly becoming as great a favorite as the verbena, which it somewhat resembles in the shape of its flowers. Greater variety of color is only wanting to render it one of the most desirable of bedding-plants. Yet it supplies what we do not possess in the verbena, an abundance of bright yellow and orange tints which add so much to the gaiety of every flower border. A few years ago we had only three or four species or varieties, but at the present time we have nearly twenty and of a great number of shades from white to crimson. Every year adds to our collections, and some of the newest are very distinct and beautiful. We have now in bloom four new varieties, two of which are much deeper colored than any we have yet had. We give the names and descriptions:—

Wilhelm Shule.—Straw color with yellow eye, changing to blush.

Rosea elegans.—Blush with yellow eye, changing to pink.

Abbé Touvré.—Deep yellow, changing to dark orange red.

Fellowii.—Orange, changing to crimson red.

The lantanas are as readily raised from seed as the verbena, and flower abundantly the first season. With care in selecting seeds, many new and distinct varieties will undoubtedly be produced.

NEW FUCHSIAS.—Some new and quite distinct fuchsias have recently been introduced, which add much to the interest of this showy plant. Heretofore there has been too much similarity in the kinds, but the newer sorts show signs of improvement in this respect. The French amateurs, who look more for striking colors than mere form, have succeeded in producing some remarkable varieties which we hope soon to see in bloom. Among the number are some with striped corollas. The English cultivators have also raised some very fine kinds. We name a few of those which have been added to our collections the present year:

Venus de Medicis, Volcano d'Aqua, Climax and Favorite ; Camelion, Bellidiflora fl. pleno, Espérance, and Surprise, the last four French varieties.

NEW ACHIMENES.—The following are the names of some of the new Achimenes now coming into bloom:—A. amabilis, Aurora, elegans, magnifica, ocellata, violacea, and picturata.

365. SONERI'LLA E'LEGANS *Wight*. ELEGANT SONERILLA.
(Melastomaceæ.) Africa.

A stove plant; growing one foot high; with pink flowers; appearing in winter; increased by cuttings; grown in leaf mould and sandy loam. *Bot. Mag.*, 1857, pl. 4973.

“A most lovely Melastomaceous plant, remarkable for the beauty of its leaves and flowers, and singular among that natural family for the ternary arrangement of the parts of the flower.” The leaves are handsome, being purple on the under side, and the petioles are blood red. The flowers appear in terminal clusters of a bright pink, and bloom in the winter. It is a native of the Neilgherries, and first flowered in the collection of Messrs. Veitch, in January last. (*Bot. Mag.*, April.)

366. XANTHOSOMA SAGITTIFOLIUM *Schott*. ARROW-LEAVED
XANTHOSOMA. (Aroideæ.) West Indies.

A stove plant; growing six feet high; with white flowers; appearing in winter; increased by division of the roots; grown in light rich soil. *Bot. Mag.*, 1857, pl. 4969.

A fine hothouse plant with the habit of an Arum, but with very large leaves, often two or three feet long, and large showy white flowers somewhat resembling the Calla, but not so open. In large hothouses where there is plenty of space it is a noble plant. (*Bot. Mag.*, June.)

367. BEGONIA HERACLEIFOLIA VAR. NIGRICANS *Hook*. HOG-
WEED BEGONIA, BLACKISH-LEAVED VARIETY. (Begoniaceæ.)
Mexico.

A greenhouse plant; growing one foot high, with blush flowers; appearing in winter; increased by cuttings; grown in light, rich soil. *Bot. Mag.*, 1857, pl. 4983.

“A very handsome variety, the leaves being deep green, blotched with a deeper and almost black tint at the margins of the lobes; the petioles, scapes and ramifications of the

flower stalks are tinged with red, the bracts are pale green, the petals nearly white, and the broad wing of the fruit is rose colored." Like most of the family it flowers in winter, and its peculiarly formed leaves and pretty flowers render it a desirable species. (*Bot. Mag.*, May.)

368. *BEGO'NIA GRIFFI'THII* *Hook.* MR. GRIFFITH'S *BEGO'NIA*. (*Begoniaceæ.*) *Bootan.*

A stove plant, growing one foot high; with blush flowers; appearing in winter; increased by cuttings; grown in light sandy soil. *Bot. Mag.*, 1857, pl. 4984.

A very beautiful *Begonia*, received under the name of *B. picta*, but which proves to be the *Griffithii*. The leaves are remarkably showy, being large in proportion to the size of the plant, dark green, beautifully variegated, with a broad pale green line all around near the edge, and blood colored in the centre and upon the margin; the plant is leafless, and the flower stems are stout, erect, and ornamented by a cluster of four to six very large blush colored flowers. It is one of the finest species yet introduced. (*Bot. Mag.*, May.)

369. *ECHVE'RIA CANALICULA'TA* *Hook.* CHANNELED-LEAVED *ECHVE'RIA*. (*Crassulaceæ.*) *Mexico.*

A greenhouse plant; growing two feet high; with red flowers; appearing in spring; increased by cuttings; grown in light sandy loam and leaf mould. *Bot. Mag.*, 1857, pl. 4956.

The *Echeverias* are pretty plants similar to the *Crassulas*, with thick fleshy glaucous leaves, and spikes of brilliant colored flowers. The present species is entirely new. It is from the mountains of Mexico, and flowered in the Royal Gardens at Kew. The flower stem is one and a half to two feet long, bearing a raceme of red flowers, orange colored on the inside, erect, and nearly an inch long. It is a showy plant. (*Bot. Mag.*, June.)

370. *THUNBE'RGIA LAURIFO'LIA* *Lindl.* LAUREL-LEAVED *THUNBERGIA*. (*Acanthaceæ.*) *Malayan Peninsula.*

A stove climber; growing six feet high; with pale blue flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1857, pl. 4955.

A new and very striking species of the well known *Thunbergia*, with flowers nearly four inches in diameter, of a delicate pale blue, with a conspicuous yellowish eye. It is

a rapid-growing climbing plant and the flowers appear in terminal clusters and at the axils of the leaves. It was raised from seeds received from the Malayan peninsula by Mr. Ingram of the Frogmore gardens. It flourishes in the stove, trained up to the rafters or up the back wall, but it would undoubtedly, in our climate, grow freely turned out into the open ground in summer in the same way as the *Cobæa*. It flowers at various seasons of the year. It promises to be a most decided acquisition to our climbing plants. (*Bot. Mag.*, May.)

371. *GARDE'NIA CITRIFO'D'RA* *Hook.* ORANGE SMELLING
GARDENIA. (*Rubiaceæ.*) Natal.

A greenhouse plant; growing two feet high; with white flowers; appearing in spring; increased by cuttings; grown in loam, leaf mould and sand. *Bot. Mag.*, 1857, pl. 4987.

A deliciously fragrant species of the beautiful Cape jasmine, producing an abundance of white flowers about the size of an orange blossom, and quite as sweet scented, from whence its name. The plant forms a spreading evergreen shrub, about two feet high, with opposite, sub-coriaceous, elliptical-lanceolate, acute leaves, and copious axillary clusters of white flowers. It is an entirely new species and will be a great addition to our list of fragrant flowering plants. (*Bot. Mag.*, June.)

372. *BEGO'NIA WAGENERIA'NA* *Klotzsch.* WAGENER'S BEGO-
NIA. (*Begoniaceæ.*) Venezuela.

A greenhouse plant; growing one foot high; with white flowers; appearing in spring; increased by cuttings; grown in peat and leaf mould. *Bot. Mag.*, 1857, pl. 4988.

Another new Begonia, similar to some of the older sorts, but "remarkable for the white or cream white cymes of two petaled (mostly) male flowers, and the pale green cymes of five petaled (mostly) female flowers, with their long twisted lobes or branches of the style." It has a straggling habit, but is a very free flowerer during the spring months. Dr. Klotzsch has made it a species of a new genus which he calls *Moschkowitzia*, but Dr. Hooker thinks it most accordant to nature to preserve the old genera *Begonia* intact, and considers the so-called generic distinctions merely as sectional char-

acters. It was sent from the Berlin garden to Kew. (*Bot. Mag.*, June.)

373. BEFA'RIA MATHE'WSII *Feilding and Gardner*. MR. MATHEWS' BEFARIA. (Ericaceæ.) Peru.

A greenhouse shrub; growing four feet high; with yellowish flowers; appearing in spring; increased by layers; grown in peaty soil. *Bot. Mag.*, 1857, pl. 4981.

A pretty shrub with the habit of the *Andromedas*, bearing clusters of sulphur yellow flowers. The leaves are small, dark green above and glaucous beneath; they are copiously produced. The plant has a good habit, with reddish colored branches. It is a native of the mountains of Peru where it was found at a high elevation, and was raised from seeds sent home by Mr. Lobb, in the collection of Messrs. Veitch. It is a neat ericaceous shrub. (*Bot. Mag.*, May.)

374. CYPRIPE'DIUM HERSUTI'SSIMUM *Lindl.* VILLOUS LADY'S SLIPPER. (Orchideæ.) Java.

A stove plant; growing one foot high; with green and brown flowers; appearing in spring; increased by division of the roots; grown in loose peaty soil. *Bot. Mag.*, 1857, pl. 4990.

“An extremely handsome species” of the *Cypripedium*, allied to *insigne*, *villosum*, &c., but distinct from all. It has very large flowers of various tints of purple and green, brighter and handsomer than any of the species. Its growth and treatment are the same as that of *C. insigne*, and it blooms in spring. (*Bot. Mag.*, June.)

OUR ORNAMENTAL TREES.

BY THE EDITOR.

14. THE SASSAFRAS TREE. (*LAURUS SASSAFRAS*, *L.*)

THE *Sassafras*, though one of the most common of our indigenous trees, seems to have attracted very little attention as an ornamental object. It is rare to find a good specimen out of its native woods. Even in Great Britain, where it was early introduced, there are but few fine trees, and London's whole account of it, in his *Arboretum*, is made up from

Michaux's, Bigelow's and Nuttall's works. It is, however, one of our most beautiful indigenous trees, equally attractive from the glaucous hue of its various shaped leaves in spring, or the gay tints of its foliage in autumn. To these qualities may be added its highly fragrant or camphorated leaves and bark, and its abundance of bright red capsules which contain the seeds.

The Sassafras, (FIG. 18,) is one of the most widely distributed of our American forest trees. From the vicinity of Portsmouth, N. H., in the north, it extends to Lower Louisiana in the south; and from the Atlantic Ocean on the east to



18. THE SASSAFRAS TREE.

the remotest wilds of Upper Louisiana beyond the Missouri in the west, embracing an extent in each direction of more than 1800 miles. It is so abundant as to be ranked among the most common trees. It grows on every variety of land, both dry and gravelly as well as moist and fertile, excepting the pine barrens of the Southern States. It does not, however, in all these places attain its greatest perfection; this is confined to the fertile soils, on which it may chance to grow, such as form the declivities which skirt the swamps and sustain the luxuriant forests of Kentucky and Tennessee.

Here it reaches the height of 50 or 60 feet with a well proportioned and handsome head. Towards the north it becomes a smaller tree, rising only to the height of fifteen or twenty feet, and frequently appearing but a large shrub, though Mr. Emerson speaks of measuring some specimens 40 feet high and 2 feet in diameter; but they are rather rare.

The Sassafras was introduced to Europe as long ago as 1633, and appears to have been one of the first trees which attracted the attention of Europeans, probably owing to the medicinal character of its bark and roots. For more than 200 years it has retained a place among the best European pharmacopœas, and at the present time the oil which is distilled from it forms a considerable article of commerce. Historically it possesses much interest, as it has been said to have led to the discovery of America; it was its strong fragrance, smelt by Columbus, that encouraged him to persevere when his men mutinied, and enabled him to convince them that land was near at hand.

The Sassafras is a rather slow growing tree. Its branches grow at nearly right angles from the stem, but curve upwards at the ends. The bark is of a yellowish green color. The leaves are remarkable for their variety of shape on the same tree, and no two will be found alike. They are four or five inches in length, alternate, sometimes entire, sometimes two or three lobed and rounded at the end. When young they are downy and of a tender texture, but with age they assume a smoother and glossy hue. The tree is diœceous, and the fruit is of an oval shape, bright red, with dark blue seeds. In the autumn the foliage passes through the various shades of delicate buff, yellow or orange, and for a short time enliven our autumnal landscape with their gay and beautiful tints.

The Sassafras is rather easily cultivated from the suckers which spring up around the roots, an objection which has been made against it as an ornamental tree. The trouble, however, of keeping them down is nothing compared with the beauty of the tree. In many places it may be planted where it will assume the character of a large shrub. The suckers

should be carefully detached from the roots, and planted out in nursery rows, where in a year or two they will make pretty specimens. It may be also propagated from seeds, but this is a slow process, as the seeds should lie in a heap to rot one year before being planted, and frequently they do not come up till the third year. Any good light rich soil will suit it admirably, and if in a somewhat sheltered situation it will grow all the more rapidly and soon attain a good size.

This beautiful tree has, in common with others, been neglected. Let it no longer be overlooked for exotics which can hold no comparison with it as an ornamental object. The delicate hue of its glaucous foliage in spring, its varied and deep lobed leaves, and the rich coloring of their autumnal tints, entitle it to a prominent place in every pleasure ground or landscape scene.

General Notices.

MANETTI ROSE STOCK.—I entirely agree with most of Mr. Rivers' remarks on the excellence and peculiarities of this stock. But I as entirely disagree with him when he would confine what he designates the "Folkestone system of yearly removal" of roses to such as are planted on light sandy soils. And how the father of root pruning can consistently advocate or even sanction any deviation from a principle so beneficial in its results, and so universal in its application, I am at a loss to understand. He may contend that replanting is carrying root pruning to extremes. But I shall show presently that this is by far the most efficient, and (where plants stand as close as roses generally do) most economical method of performing that operation. That Mr. Rivers has Pillar roses on this stock that have been left alone for years, and still of the most vigorous growth, I can verify; but this fact does not in the least affect the question, as these may be considered purely natural objects, and as such best left to themselves. To them the knife is seldom applied, and the roots and branches maintain their natural proportions. But for dwarf roses to furnish beds or clumps, where the plants are objects of the highest artificial culture, the knife is most unsparingly applied, all equilibrium between the roots and branches entirely destroyed, and the necessity of its restoration renders root pruning indispensable. I think it will be granted that the treatment demanded in these cases must be widely different and the results of the different systems will

be best understood by examining examples of each in autumn. In the bed or group of unremoved or stationary roses, if at all in decent health, will be found plants producing strong, rampant, unsightly, ill-ripened shoots that have, (along with an admixture of suckers), ever since the first bloom in June, disfigured the groups, robbing the shoots destined to produce next season's bloom, and reducing them to so much worthless spray. Now Mr. Rivers and the advocates of the STATIONARY system may admire the shoots described as so many specimens of fine luxuriant growth—to me they can never be aught save so many unmistakable proofs of neglected culture. Compare this with a group that has been replanted annually, and the contrast is remarkable; here we find no such unprofitable expenditure of the energies of the plant as the production of the basket rods described; on the contrary, all has tended to perfect a mass of clean, healthy, compact, well-ripened shoots—a state of things indispensable to produce a profusion of well-formed blossoms on any class of plants whatever. And after all—all this is attained by less trouble and expense than is generally bestowed on the stationary system. In beds or clumps (and to these my culture has been principally directed) what can be more expeditious or simple than to begin at an end or corner, turn over the soil two or three feet, carefully remove the roses with the roots as entire as possible, manure the thoroughly broken up soil, remove all appearance of suckers or buds from the stock, (and after the second year on the Manetti, as Mr. Rivers has observed, these will be few indeed); give the roots and branches what pruning may be required, plant deep, make what alteration in the disposition of your plants the habit or color may suggest, and an operation upon which so much depends is complete. I need hardly add that the operator who is anxious to succeed will complete the operation as rapidly as doing it thoroughly will permit, and those who damage the plants by exposure, through unnecessary delay, have no right to expect, nor do they deserve, success.—(*Gard. Chron.*, 1857, p. 486.)

WHAT IS THE HANDSOMEST FLOWERING HARDY SHRUB of July, after the rose? Some may say the fuchsia, but it is scarcely an ornament of July; others may point to the Scarlet geranium, but it is tender; a third will possibly contend for the *Berberis aquifolium*; and we should acquiesce in the decision if flowers constituted the beauty of that glorious evergreen; but it is a fruit, and not a flower of July. For ourselves we contend, without the least hesitation, for *Spiræa callosa*.

"*Spiræa callosa*! what may that be?" cries some eager reader. "I never heard of such a plant. I know *Spiræas*, but they are not so very remarkable; *Spiræa ariæfolia* is now in flower, and it is pretty enough, but not at all striking; *Spiræa Lindleyana* is no doubt a finer thing, but it is tender and rather coarse, and white-flowered also; but what can *Spiræa callosa* be? I never saw it advertised; I don't see it in the nursery catalogues; I have not seen it in my late visits to the great nursery gardens near town. What can it be to be placed on such a pinnacle of fame?"

That all this is true we have no doubt; for *Spiræa callosa* is not a novelty, nor an exhibition plant; nor a florist's flower. Its leaves are not speckled and spotted, nor its flowers as red as a pæony's, or as big as a dahlia's. But it is a gem for all that, when care is taken to cultivate it well.

Imagine a shrub about four feet high, and as much in diameter, most gracefully branching from the ground. Let its slender shoots be dull red, and its simple leaves a quiet green, such as the most fastidious artist would select for a contrast with brighter colors. Then let every branch burst out into spreading twigs loaded with tiny flowers arranged like those of a *Laurustinus*, but more loosely, the youngest dull red and as large as a pin, others more grown, with a vivid crimson centre, when the gay petals are preparing to burst their dingy calyx, and looking like rubies in a rusty setting. Such is the infancy of *Spiræa callosa*. More mature, the crimson petals begin to spread and reveal their still more rosy centres; and at last the ring of crimson stamens gradually unfolds and forms a glowing halo round the centre. Should the reader be able to receive all these things upon his mind's eye, he will then begin to know what *Spiræa callosa* is like. Though each of these tiny flowers does not occupy the fifth part of an inch, yet their number most amply compensates for their smallness. Each truss is full two inches across, and every branchlet bears about three such trusses, of which that in the middle is full blown, while the side ones are still closed up; and at least a month's supply of flowers of all ages is provided at the time when the bush first breaks into blossom. Does not a plant like this deserve a niche in the temple of Flora Juliana?

Spiræa callosa is a native of Japan, whence it is said to have been introduced by Mr. Fortune, through Messrs. Standish & Noble. It derives its name from the presence of a small red callosity seated on the end of each of the numerous notches that border its leaves.—(*Gard. Chron.*, 1857, p. 531.)

THE NEW ROSES.—Foremost among these is the glorious General Jacqueminot (H. P.), which, although perhaps wanting a little in doubleness, is nevertheless brilliant in the extreme, and retains its color under bright sunlight even better than *Géant des Batailles* itself. A fact worth knowing in connection with this variety is that it comes much more double on the Manetti stock than on the Briar. Flowers of it in a small clump in front of Mr. Wood's house, on the Manetti, were this year as large and full as could possibly be desired. Whether or not however this will happen a second season remains to be seen. The Manetti, it may be mentioned, throws unusual vigor into the charming Tea rose *Gloire de Dijon*. Of two plants of similar age and size, turned out against a wall here on the same day, the plant worked on the Manetti is now three times as large as that on its own roots; it likewise produces blooms of immense size with much more salmon color in them than is commonly found in flowers of this variety. The Manetti stock for some kinds of roses is therefore a favorite here.

Perhaps one of the most brilliant colored and double of all roses is Lord Raglan, a variety fast getting into favor. It is said to have been raised from seed saved from Géant des Batailles. Its blooms are very large and their color quite dazzling. In vigor it far surpasses its parent. This variety cannot fail long to be a favorite, as it is in all respects a first class rose.

Of varieties better known, but about which too much can hardly be said, may be mentioned Souvenir de Leveson Gower, crimson, very double, and possessing a beautiful rose scent; Jules Margottin, a sort like Baronne Prevost, but brighter in color, very double, and one of the most profuse blooming of roses; Auguste Mic, light pink; Madame de Cambacères; Madame Domage, a sort like Jules Margottin, but lighter, finely scented but somewhat inconstant; Madame Andry, large and globular; Louise Odier, a very hardy, good kind; Prince Leon, double and beautiful in shape; Triomphe de Paris, purplish crimson. Of very dark roses, none beats Arthur de Sales, and for general effect we should not omit Sir Joseph Paxton and the Old Bourbon Queen, both of which when planted in masses are very striking. Of delicate pink Hybrid Perpetuals, none surpass Mrs. Rivers and Madame Vidot, both of which are free flowering and truly beautiful.

Among really new roses the best are Adelaide Fontaine, a sort in the way of Louise Peronny, but larger and quite as good in form; Belle Angevine, striped pale flesh, apparently an improvement on Panaché d'Orleans; Cardinal Patrizzi, rich deep velvety crimson, very dark; Louise Magnan, a good yellow, tinged white, and Prince Imperial, a kind with dark rose-shaded flowers of great size. These are all Hybrid Perpetuals. Among Noisettes, the best are Madame Massot, pale flesh and beautifully cupped; Madame Schulz, shaded yellow, and Triomphe de Rennes, yellow, very double and good.

General Simpson (H. P.) is a good rose, darker in color than Louise Odier, and the same may be said of General Pelissier, a variety in the way of William Jesse, but larger and with more lilac in it. Duchess of Norfolk, which was described in a former notice of this place, is found to make a useful variety for pot culture.—(*Gard. Chron.*, 1857, p. 519.)

HOW TO KEEP PEARS FROM WASPS.—At the end of October and beginning of November, wasps and bees, no longer having plums and grapes to devour, attacked my late pears. Day after day I found a Fondante de Noel, or a Beurré Diel, or a Bonchrétien de Rans, or a Doyenné d'Hiver bored into. Rain got into the holes, and, not being able to escape, soon made the fruit rot, so that I expected to lose all my pears. But one morning it occurred to me to put a pinch of plaster of Paris into the holes. The plaster absorbed the moisture, and soon formed a hard crust which held fast to the flesh and stopped all further access of water or air, so that not a single fruit decayed.—(*Revue Horticole.*)

THE IVY-LEAVED SNAPDRAGON.—The walls and woodwork of the old locks, on the Thames, are beautifully decorated with groups of graceful

plants that would altogether form choice studies for the pre-Raphaelite painter. Perhaps the most elegant of these is the Ivy-leaved Snapdragon, (*Linária cymbalária*), a pendent plant, with glossy, deep green, ivy-like leaves, and quaintly formed flowers of violet color, with yellow throat. It appears this is not strictly an indigenous plant; but that it was originally introduced from Italy into our gardens, from which it has escaped and naturalized itself through the country, having now become as thoroughly English as any family that came in at the Conquest. From Oxford to Teddington we are continually meeting with the flowery festoons of this pretty plant, wherever old stonework is found in proximity to the water; we may suppose seeds of it have in old times escaped from some Oxford garden washed by the Thames, and, having been carried downwards by the stream, were deposited in convenient resting-places along the river's course. This will account for the abundance of the plant on the line of the Thames, while in most other districts it is hardly ever met with.—(Mrs. S. C. HALL in the *Art Journal*, 1857.)

Gossip of the Month.

THE GOVERNMENT GREENHOUSES.—The city of Washington and its environs are everywhere exhibiting the munificence of Government in the erection of noble structures and magnificent achievements of engineering skill, and in the improvement and embellishment of the public grounds; but, in surveying the whole, the eye rests with a spirit of inquiry upon one of these objects of very dubious aspect and questionable import. The question at once arises, What are the Government greenhouses for? For what purpose is that huge pen so conspicuously set off at the foot of Capitol Hill, with a twenty feet border, filled with hollyhocks, portulaccas, &c.? For what purpose does the Government support an establishment for the propagation of “florists’ flowers,” and what becomes of all the plants and flowers propagated there from year to year? Is this a nursery for display and for the gratification of visitors? If so, it is wholly unworthy the Government of the United States and the nation. There are in the country hundreds of private collections vastly its superior. Is it to aid in the promotion of horticulture? If this be its purpose, it is a signal failure; and it is worthy of note that at the recent splendid exhibition of the Washington Horticultural Society the Government greenhouses were not represented by a single contribution. The plants of this establishment are kept in fine condition by the intelligent and skilful gardener, Mr. Smith, and some of the choice specimens might have been displayed to advantage on the tables of the society. It was commendable in the Government to provide a green and hot house for the reception and propagation of the plants sent home by the Exploring Expedition, but that necessity has now ceased, and at this

moment there are more rare and choice exotics by thousands in private collections than can be found in the Government greenhouses and grounds. If there is or should be hereafter occasion for the propagation and distribution of rare exotics, there seems to be no reason why the Government should cultivate florists' flowers, and be at the expense of houses for camellias, roses, geraniums, chrysanthemums, &c. If, indeed, it is intended that the Government should go into this business, it is to be hoped that it will be done on a magnificent scale, and in such manner as to afford gratification and instruction to amateurs, florists, and gardeners visiting Washington, and that there will be employed a sufficient number of *bouquet-makers* to supply all the visitors, at least the strangers, with a few flowers in recognition of the vested rights which every citizen would have in the great National Floral Museum.—CHAS. G. PAGE, in the *Nat. Intelligencer*.

Prof. Page asks some very pertinent questions, and we should like to see them answered. On our part, we think the whole thing is a waste of the public money, without either credit to the Government or the country. A great deal has been said about the establishment of EXPERIMENTAL GARDENS by our Horticultural Societies; but with the example of the London Horticultural Society before them it is quite doubtful if any of them will hazard a trial. The Government, however, here has an opportunity to aid in this work and do something beneficial, just in the same way the London Society is now doing, viz., propagating and distributing, by lot, all the new and rare plants it can procure. Let all the florists' flowers be given away,—not because they are not appreciated and are not worthy of culture,—but because their room is wanted for more valuable purposes. Then let a collector be sent to California, to Oregon, to Mexico, or South America, to gather new plants, seeds, roots, &c., sending them to the garden at Washington, where they should be reared and multiplied as rapidly as possible, and then distributed gratuitously among the prominent nurserymen in the United States for further dissemination and sale. In this way all the magnificent trees, the splendid plants and beautiful flowers, with which our continent abounds, will not have to be sent to Europe to be named and then imported here for sale. By such a course Government would receive the thanks of every lover of plants throughout the country.—ED.

THE OSAGE ORANGE FOR HEDGES.—Col. Johnson, Secretary of the N. Y. State Agricultural Society, thus speaks of the Osage Orange hedges in the Mount Auburn Cemetery at Cincinnati, Ohio:—The finest Osage Orange hedges we have seen surround these grounds; planted and trained under the direction of Mr. Ernst, for about six years, they are now most attractive and entirely successful. Where time and attention can be given to this hedge it can be made most attractive and useful—but we much doubt whether it can be generally introduced among farmers, who generally have so little time to devote to the careful training and rearing of the hedge—without which it will prove of little protection; and at the best, it must be protected with an enclosure around it, for several years, before it can be of any avail.—*Journal of N. Y. State Ag. Soc.*

THE FALL EXHIBITIONS.—The exhibitions of various Horticultural Societies and State Associations take place during this and the next month. We annex a list of some of those which are likely to afford a general interest to cultivators in all parts of the country:—

The Massachusetts Horticultural will hold its 29th annual exhibition on the 22, 23, 24 and 25 of September, at the Music Hall in Boston.

The New York Horticultural will hold its fall exhibition in New York, at Niblo's Saloon, on the 29 and 30 of September, and Oct. 1.

The Brooklyn Horticultural will hold its annual show in Brooklyn, N. Y. on the 16 and 17 of September.

The American Institute will open its 29th annual fair at the Crystal Palace, New York, on Tuesday, Sept. 15, and continue for a month or longer.

The Albany County Agricultural will hold its fifth annual fair at the Washington Parade Ground, in Albany, on the 15, 16 and 17 of September.

The Illinois State Agricultural will hold its fifth annual fair at Peoria, on the 21, 22, 23 and 24 of September.

The Michigan State Agricultural will hold its ninth annual fair at Detroit, on the 29 and 30 of September, and 1 and 2 of October.

The New York State Agricultural will hold its 17th annual fair at Buffalo, on the 6, 7, 8 and 9 of October next.

The Ohio State Board of Agriculture will hold its eighth annual fair at Cincinnati, on the 15, 16 and 17 of September.

The Tompkins County Agricultural and Horticultural will hold its 13th fair at Ithaca, N. Y., on the 23, 24 and 25 of September.

The Massachusetts State Agricultural will hold its fair in Boston, on the 21, 22, 23 and 24 of October next.

The Fruit Growers of Western New York will hold an exhibition at Rochester, N. Y., on the 18 and 19 of September.

The Ohio Pomological will hold its eighth annual session at Cincinnati, on the 14th of September, and continue three or four days.

THE NEW ROSE ISABELLA GRAY.—In your last, the remark is made that I “had not mentioned Isabella Gray among American seedlings.” In one of my recent communications (p. 130) I speak of this rose as “being preferred here in Washington to the celebrated Augusta Rose.” Last year it bloomed finely in our gardens, and is a decided acquisition, and as it was so widely distributed here at the time of my writing, I mentioned it rather incidentally.—*Yours,* CHAS. G. PAGE.

Massachusetts Horticultural Society.

Saturday, August 1, 1857.—An adjourned meeting of the Society was held to-day—the President in the chair.

A committee of five was appointed to nominate a list of officers for the

ensuing year, consisting of Messrs. Stickney, F. Burr, Jr., W. R. Austin, B. Harrington, and F. Winship. Adjourned two weeks to Aug. 15.

Exhibited. FLOWERS: From E. S. Rand, Jr., gloxinias, achimenes, roses, verbenas, &c. Cut flowers in variety from F. Winship, P. Barnes, C. Copeland, J. Nugent, Mrs. Richardson, J. McTear, Miss Russell, A. C. Kenrick, S. Sweetser, J. Murray, T. G. Whytal, A. Bowditch & Son, J. W. Foster and others.

GRATUITIES AWARDED.

To J. Murray, C. Copeland, F. Winship, and J. Breck & Son, for cut flowers, \$2 each.

To Mrs. Richardson, Miss Russell, A. C. Kenrick, J. Nugent, J. McTear, T. G. Whytal, and A. Bowditch & Son, \$1 each.

FRUIT: From Geo. Wilson, Cherry currants, extra fine; also, Victoria and White Dutch. From J. W. Foster, Early Harvest apples, Dorchester blackberries, and Victoria and Red Dutch currants, extra. Dorchester blackberries from L. Jennings, G. Merriam, J. Nugent, and J. McTear. From L. Kinsley, grapes. From O. Bennet, fine peaches. From H. Vandine, Doyenné d'Ete pears. From F. Dana, currants. From C. S. Holbrook, peaches.

From J. F. Allen, Bowker, Bishop and other grapes, and Brown Turkey figs.

Aug. 8th.—Exhibited. FLOWERS: From Hovey & Co., Lantana Abbé Touvre, rosea elegans, Wilhelm Shule and Fellowii, dahlias and phloxes. From J. Breck & Son, phloxes, gladiolus, &c. Cut flowers in variety were also sent by J. Murray, Jona. French, Barnes and Washburn, G. G. Hubbard, J. Nugent, E. Stone, C. Copeland, E. S. Rand, Jr., F. Winship, J. W. Foster, A. Bowditch & Son, and others.

PREMIUMS AWARDED.

BALSAMS.—For the second best, to J. Breck and Son, \$3.

For the third best, to J. Nugent, \$2.

FRUIT: From B. Harrington, Williams apples. From Messrs. Burr, Red Astrachan apples, fine. From J. W. Foster, currants, Dorchester blackberries, and Early Harvest apples. From G. Merriam, Dorchester blackberries, fine. From J. Nugent, Dorchester blackberries, extra. From C. S. Holbrook, peaches, very large and fine. From H. Vandine, three var. plums, pears, and Dorchester blackberries. From F. Dana, Red Astrachan apples. From J. B. Moore, Dorchester blackberries.

Aug. 15th.—An adjourned meeting of the Society was held to-day—the President in the chair.

Ad. Gage, West Cambridge; E. A. Ward, Cambridge; R. S. Martin, Boston; G. R. Sampson and I. Sargent, Brookline, were admitted members.

Adjourned one week to Aug. 22.

Exhibited.—FLOWERS: From the Botanic Garden, Dioscorea pandurata, Crinum americanum, and other rare shrubs and plants. From J. Breck & Co., fine phloxes and a great display of annuals. From Hovey & Co., 40 var. of phloxes, including the following: M. Rical, Laurent de St. Cyr, Jeane Rouillard, Mad. Corbay, Mad. Milleret, Madame Basseville, Mad. de

Vatry, Carmarina, rubra superba, M. Hardy, Gem, Florence, &c., and several seedlings. Annuals and other flowers were contributed by J. Nugent, C. Copeland, J. Murray, Barnes & Washburn, E. S. Rand, Jr., T. G. Whytal, F. Winship, E. A. Story, J. W. Foster, Miss Russell, B. Harrington, and others.

AWARD OF PREMIUMS AND GRATUITIES.

PHLOXES.—For the best, to J. Breck & Son, \$5.

For the next best, to Hovey & Co., \$4.

For the third best, to J. Nugent, \$3.

PETUNIAS.—For the best collection, to Barnes and Washburn, \$4.

For the second best, to J. Breck & Son, \$3.

For the third best, to F. Winship, \$2.

ANNUALS.—For the best display, to Barnes & Washburn, \$6.

For the second best, to J. Breck & Son, \$4.

For the third best, to J. Nugent, \$3.

GRATUITIES.—To F. Winship, for annuals, \$2. To C. Copeland, for display, \$3. To J. Murray, for annuals, \$2. To the Botanic Garden, for native plants, \$2.

FRUIT: From Messrs. Burr, Red Astrachan apples. From J. W. Foster, Early Bough, Sops of Wine, and Early Harvest apples, and Dorchester blackberries. From G. B. Cutter, Williams apples and Dorchester blackberries. From B. Harrington, Williams apples. From G. Merriam, Dorchester and Lawton blackberries. From E. S. Rand, Jr., peaches. From W. W. Wheildon, Sops of Wine and Early Bough apples.

From Hovey & Co., Supreme de Quimper pears. From F. Marsh, Sops of Wine and a seedling sweet apple. From J. F. Allen, a fine bunch of Bishop grapes, weighing 2 1-2 pounds. From Dr. E. Wight, Bloodgood pears. From S. W. Fowle, Myrobalan plums. From J. B. Moore, Capt. Austin, and J. Nugent, Dorchester blackberries. From H. Vandine, plums, pears and apples.

Aug. 22d.—An adjourned meeting of the Society was held to-day—the President in the chair.

Letters were received from the President, J. S. Cabot, and Vice Presidents French, Newhall and Richards, declining to be candidates for office another year.

The committee appointed for that purpose placed upon the table a printed list of the officers nominated by them for the ensuing year.

Adjourned two weeks to Aug. 29th.

Exhibited.—FLOWERS: From J. Breck & Co., one hundred varieties of phloxes, including some new and fine sorts. From Hovey & Co., twelve varieties of new phloxes, among which were La Candeur, fine white, Mad. Adelbert de Beaumont, Mad. Gerandean, Mad. Aguillon, &c., and two rare seedlings, very beautiful. From E. S. Rand, Jr., fine seedling gloxinias, a seedling phlox called Mrs. Partington, and other flowers. Cut flowers in variety from C. Copeland, J. Murray, W. H. Spooner, Jr., Barnes & Washburn, C. Newhall, J. Nugent, F. Winship, C. J. Hendee, E. A. Story, B. Harrington, and others.

GRATUITIES AWARDED.

To J. Breck & Son, for fine phloxes, \$3.

To C. Copeland, J. Nugent, Barnes & Washburn, F. Winship, and J. Murray, for displays, \$1 each.

FRUIT: From Hovey & Co., Summer St. Germain, Passans du Portugal, Dearborn's Seedling, Winship's Seedling, Bloodgood, Bell, Gustin's Summer, Espadonne, and Supreme de Quimper pears—the latter fine; also, Bough apples. From G. Merriam, Dorchester and Lawton blackberries; these two kinds were tested in full committee, and there seemed but one opinion as to quality—and that was entirely in favor of the Dorchester. The committee design to call it hereafter by this name, as it originated in that town.

From E. Brown, Bloodgood and Jargonelle pears. From E. S. Rand, Jr., peaches. From C. A. Easterbrook, Williams apples. From F. Dana, seedling pears No. 2. From W. W. Wheildon, Summer Pearmain and River apples. From B. Harrington, Sops of Wine apples. From J. Nugent, Dorchester blackberries, extra fine. From S. W. Fowle, plums, supposed to be a seedling of the Chickasaw—a great bearer and handsome but poor quality. From C. Newhall, grapes. From H. Vandine, fine plums and Bloodgood pears.

Aug. 29th. Exhibited. FLOWERS: From J. Breck & Co., A. Bowditch & Son, Barnes & Washburn, Hovey & Co., Jona. French, J. Nugent, and T. G. Whytal, verbenas for premium. From E. S. Rand, Jr., gloxinias and cut flowers in variety.

From Hovey & Co., upwards of one hundred varieties of phloxes, among them several new ones not before exhibited; also dahlias, among which were La Defi, Jules Biarne, Polichinello, Jaguarita and other new ones; and nine seedling Japan lilies. Flowers were also exhibited by F. Winship, J. Nugent, J. Murray, Breck & Son, W. H. Spooner, Jr., C. Copeland, and others. Seedling phloxes by S. Walker, some of them fine.

AWARD OF PREMIUMS AND GRATUITIES.

VERBENAS.—For the best display, to Bowditch & Son, \$4.

For the second best, to J. Breck & Son, \$3.

For the third best, to Barnes & Washburn, \$2.

For the best new seedling, to E. S. Rand, Jr., for a white, the Society's silver medal.

GRATUITIES.—To T. G. Whytal, for blue seedling, \$1.

To Jona. French, for seedlings, \$2.

To Hovey & Co., for Japan lilies, \$2.

To Hovey & Co., Barnes & Washburn, and T. G. Whytal, \$1 each for verbenas.

FRUIT: From G. B. Cutter, G. Hyde, J. A. Eastabrook, B. Harrington, and Mrs. L. Spalding, Williams apples, very fine. From C. S. Holbrook, very fine Syrian and other grapes. From H. Vandine, Ives' Seedling and other plums; also, Beurré Giffard, Muskingum, Rostiezer, and Sweet Jargonelle pears. From E. Brown, fine Bloodgood pears. From A. D. Weber, Rostiezer pears.

From Hovey & Co., Summer Francreal, Boston, Summer St. Germain, Winship's Seedling, Gustin's Summer, Dearborn's Seedling, and Julienne pears. Peaches from Dr. Durfee.

Obituary.

DEATH OF THE HON. LEWIS EATON.—We have been pained to learn, just on the eve of issuing this number, of the death of the Hon. Mr. Eaton, of Buffalo, N. Y., on the 22d of August, in his 69th year. Mr. Eaton had for a long time been a zealous lover of Pomology, and from the deep interest which he felt in its behalf was instrumental in extending the taste for fine fruits in and around Buffalo. He had a large and fine collection of fruits. Through the labors of his son, Mr. J. B. Eaton, our correspondent and friend, the public have from time to time been favored with the results of his examination of his father's trees, which has aided in making better known many fine fruits. A writer in the *Buffalo Courier* says:—"It has been the good fortune of few men to be more extensively known, or more generally respected, than the subject of this sketch. For years he occupied a prominent position in the public eye, and enjoyed a large share of the public confidence. In early life he was a sagacious, active, and influential politician, and commanded in his native county a large and enviable political power. For the last few years he has withdrawn, in a great measure, from active politics, and devoted his time to his own private business. In his friendships he was ardent and sincere, and never failed in manifesting the fidelity of that friendship, when occasion presented itself, to render a friend "some service." He was a good judge of men, and was distinguished for his success in winning them to his views, when called upon to exert that influence either in his own behalf, or for those who enjoyed his friendship. Whatever enterprise engaged his attention, he gave to it his untiring energies; and when industry and perseverance could secure success, he rarely failed in the accomplishment of the purpose he aimed at. He was a kind and devoted husband, and an indulgent and affectionate father. His loss to his family will be deeply felt—indeed, it is irreparable."

Horticultural Operations

FOR SEPTEMBER.

FRUIT DEPARTMENT.

The summer just passed has been one of the coolest we have experienced for some years. On no day has the thermometer exceeded 93°, and only

on five or six days has it reached as high as 90°. There has been an unusual number of cloudy, showery, and rainy days, and more than the average of rain. Nothing has suffered from drought this year, but, on the contrary, the quantity of moist weather has over-saturated low and damp localities not well drained. Fruits generally look well, though they are considerably later than usual. Grapes have mildewed in many places, and from present appearances such late kinds as the Isabella and Catawba will scarcely ripen, unless a warm and dry September succeeds.

GRAPE VINES, in houses intended for very early crops, should now be set to work. Close up the house, syringe often, and allow the rains to refresh the borders if they have been kept dry; if cold nights occur, kindle light fires to keep up an even temperature. Vines in the greenhouse will now have ripened their wood, and may be partially pruned and divested of a portion of their ripest leaves in order to admit light to the plants, as they will soon be placed in their winter quarters. Vines in cold houses will be ripening their crop this month, though somewhat later than usual. Withhold water as they advance to maturity, and keep the house well aired both night and day in fine weather.

STRAWBERRY BEDS may be made all this month, after which it will be too late. Keep old beds clear of weeds, and clip the runners if extending too rapidly; it will strengthen the plants that remain.

PEAR TREES may be yet pruned, stopping the late growth being often necessary, but more particularly so this moist season.

FRUIT should be gathered in due season, particularly pears, and ripened in the house.

INSECTS require constant attention. The autumn caterpillars are very numerous this year, and, if not checked early, will overrun a whole tree in a few days.

FLOWER DEPARTMENT.

The month of September is the time to see that all is right throughout the houses. If painting or glazing is required, or the flues or hot water pipes are out of order, this is the time to attend to it, that there may be no delay when cool nights set in. Usually it is not safe to leave the more tender plants out after the 20th of the month, though frosts may hold off later. If not housed early the cool weather gives the plants a check which it will take some time to recover from.

CAMELIAS should be put in order for removing to the house. If the foliage is unclean, syringe it well or wash with a sponge; top dress the plants if they require it.

CHRYSANTHEMUMS in pots will now be growing well, and should have liberal supplies of water and occasionally liquid manure. All the fine specimens should be removed to the house before heavy frosts. Plants turned out into the open ground should be taken up and potted.

AZALEAS suffer from the late rains, and should be removed in doors early.

CINERARIAS should have another shift into larger pots and be kept in a frame where they can be sheltered from heavy rains.

CALCEOLARIAS, sown last month, should now be removed to pots and have the protection of a frame.

CHINESE PRIMROSES will need another shift this month.

PELARGONIUM cuttings, put in at the end of July or beginning of August, will now be well rooted and should be potted. Shelter in a frame till well established, when they should have an airy place in the greenhouse.

MONTHLY CARNATIONS, intended for winter blooming, should be made ready for removal to the house.

VERBENAS for winter blooming should have a good place in a frame, plunged in tan, and protected from cold rains.

ROSES, growing in the open ground, should be potted the last of the month if wanted for early blooming.

FUCHSIAS, done blooming, should be placed away under the stage during winter.

CUTTINGS of Petunias, Salvias, Verbenas, and all kinds of plants for a spring stock, should now be put in.

HOthouse PLANTS of all kinds should be removed in doors as soon as the weather becomes cool, or they receive a check which greatly injures them.

NEAPOLITAN VIOLETS should be potted this month.

NEMOPHILA seeds for winter blooming should be planted immediately.

HELIOTROPES should have the protection of a frame on cool nights.

FLOWER GARDEN AND SHRUBBERY.

A continuation of wet weather has increased the labors in this department. Weeds grow apace, and lawns look as fresh as spring. The borders need frequent hoeing and raking, and the lawns and grass edgings repeated cutting. See that neatness and order prevail everywhere, and improve every opportunity to perform the work, not seeking an excuse for neglect that the weather is unfavorable.

DAHLIAS should be kept tied up to stakes, as one of our September gales might make sad havoc with them if this was neglected.

CARNATIONS AND PICOTEES should be taken up and set out in beds, where they can have the protection of a frame.

NEAPOLITAN VIOLETS should be planted out in frames this month.

LILIES of various kinds may be taken up and reset.

PÆONIES may be transplanted now.

EVERGREENS of all kinds may be safely removed this month; it is as good a time as the spring.

HOLLYHOCK seeds may be planted, if not already done.

HERBACEOUS PLANTS of most kinds may be taken up, divided, and reset this month.

HYACINTHS, TULIPS and other bulbs may be planted this month.

PREPARE ground for planting in October or November, and forward all work which can be done at this season.

A CHAPTER ON TRENCHING.

ALTHOUGH we make such frequent use of the word trenching, in treating upon the improvement or preparation of ground and the growth of shrubs, flowers or vegetables, it has occurred to us that its meaning may not be fully understood by all who would wish to become successful cultivators. Gardeners and professional men need not be told what the operation of trenching is, as they are familiar with it from early life, and know the benefits which result from it; in fact that it is of the first importance in all good gardening, and is one of the operations they are earliest made acquainted with, and one which they perform over and over again, whenever new ground is brought under cultivation, or old gardens resuscitated and improved.

But there is a class of individuals who are yearly becoming interested in gardening and who are ambitious of becoming good cultivators, who are neither acquainted with the works of the best authors, nor have any practical knowledge of what good cultivation consists; who do not understand in what the operation of trenching consists, and are completely at a loss to comprehend the process by which it is accomplished, or its importance when completed. As it is our province to aid this class of readers we have thought a short chapter devoted to the subject, in explanation of the *modus operandi* of proceeding, would not be without its value, and possibly lead to its more general adoption by all who can appreciate its necessity whenever great results are expected.

If we should say that not one garden in five hundred has ever been trenched, we should probably be very safe in our estimate. In fact, we have, in the course of an extensive observation of several years, never seen but very few grounds which have been thoroughly trenched, in the true meaning of the word. From the mistaken notion of many who think

they understand in what the operation consists, the soil is often only dug over twice the ordinary depth, and this is frequently called trenching. The great fear which too many individuals have that the turning up of a little of the subsoil will ruin a garden, has prevented them doing anything more than turning over or digging up the surface, without penetrating below the loam which overlays a sandy, gravelly, or clayey substratum. They seem to think that nature is only to be followed and not assisted, though the products which they are to raise upon the soil are as different from what nature supplies as it is possible to conceive. He who expects that a Beurré Diel pear will thrive where a wilding will almost break down beneath its weight of perfect fruit, or imagines he can raise strawberries of the largest size where our wild berries grow in profusion, is simply greatly mistaken, and if he does not believe it at first, he will find, to his great disappointment and cost, that it is so in the end. Nearly all our finest fruits, flowers and vegetables are the result of long amelioration, under the highest system of culture, by the most skilful professional men, and to retain these in the perfection to which they have arrived, the same extraordinary efforts must be continued, or failure will be the result. Such being without doubt the tendency of ordinary cultivation, it is all important that, knowing wherein failure consists, we should strive to avoid it, and achieve success.

It is the common remark, even among intelligent men, that their soil is not adapted to the growth of certain crops; that it is too light or too heavy, too sandy or too clayey; that this fruit or that fruit will not succeed; and, without making any attempt at overcoming these difficulties, they sit down discouraged in their efforts, firmly believing they have been unfortunate in the selection of their grounds, and that there is no means of improvement. Our personal experience recalls to us numerous cases of this kind, where inquiries have been made as to what could be done to render their labors successful. In every case where our advice has been followed, these discouragements have melted away be-

fore the successful application of the spade, the pickaxe, and liberal manuring. Trench, Trench, Trench, is the motto, especially for our New England soil—and it is for those who do not understand what this is, that our present article is an explanation.

With these remarks, in connection with what we have said before in regard to thorough cultivation, we proceed to detail the operation of trenching ground in the most complete manner.

The object of all trenching being to increase the depth of soil, and supply a reservoir of moisture, the deeper it is dug, provided the subsoil will admit of it, the better. In a stiff, clayey subsoil, with only a moderate covering of strong loam, or in a soil underlaid with a hungry sand or gravel, it would be impossible, only by the addition of considerable quantities of sand to one, and clay to the other, to trench more than two or two and a half feet. But where the surface soil is from eighteen inches to two feet, it may be trenched three and a half feet, no matter what the substratum may be. As a general rule, however, two and a half feet may be considered an average depth, which will answer very well for crops of all kinds. Where there is one soil that will admit of a greater depth, there are ten which will not do so.

When land intended for trenching is fixed upon, the work may be proceeded with at any season, provided the earth is not too wet; the best guide to its proper condition is, when, by digging of it up, it will fall to pieces readily, and not adhere in one solid mass or clog; especially in clayey soils should a dry time be taken, otherwise the ground will be left in a coarse, lumpy condition, very unfavorable for cultivation. Sandy soils are dry enough at any time, unless during a heavy fall of rain.

First mark out the ground with proper stakes, just the same as for ordinary digging. Commence on one side of the plot by taking out by a line a trench three feet wide, and of the desirable depth, whether two and a half or more feet; wheel this to the opposite side of the ground, where it will

be wanted to fill the last trench and finish the work. Next mark out by a line another trench, of the exact width of the first. Then commence by taking off the top spit or spade depth, and throw it into the bottom of the vacant trench; return back with another spit, which should be thrown on the top of the first. The next spit should be thrown on the top of the last, and so proceed till the trench is cleared out just two and a half feet, making the bottom perfectly level, that no water may lay on the inequalities of surface. In this way mark out trench after trench till the work is done, finishing off with the soil wheeled from the first trench for that purpose. The work is then completed and ready for manuring and planting.

This is plain trenching. But if the soil is in poor condition, and it is intended for fruit trees, or indeed any heavy crop, manure should be liberally worked in as the trenching proceeds. To do this effectually after the first spit is thrown into the open trench, a good layer of manure, say of the depth of an inch, should be spaded in. After the next spit is thrown off, another layer of manure should be added in the same manner, and for every spit or spade depth a layer of manure of greater or less quantity should be dug in and incorporated with the soil. It will then be in fit order to grow any crop in the highest condition. For fruit trees, or any permanent crop which is to occupy the ground for years, this is the way of performing good trenching. But for vegetables or temporary crops the successive mode of trenching is considered by many practical men the best; it is effected in this way, which we copy from an old author, and one of the best gardeners England has produced:—

“Trench three spits deep, by which the bottom and top are reversed, and the middle remains in the middle: take three crops off this surface, and then trench two spits, by which the top becomes the middle and the middle the top; and take also three crops off the surface, and then trench three spits, by which that which was last the middle and now the top, becomes the bottom, and that which is now the bottom and was the surface at first, now becomes the

surface again, after having rested six years. Proceed in this manner alternately, the one time trenching two spits, and the other three; by which means the surface will always be changed, and will rest six years and produce three."

The second mode of trenching, for vegetables and other heavy crops, is undoubtedly preferable to the reverse system, described first, as an entirely fresh surface is brought up every few years, the benefits of which are apparent to every cultivator. Still, as it is attended with some trouble, especially in gardens of small extent, where there are numerous trees, it is best to begin with the most thorough reverse trenching, by which the surface soil is placed at the bottom, and the poorer subsoil brought up, where it can be heavily manured and acted upon by the sun and air, and receive the benefit of the dews and rains, as well as subjected to the frosts of winter, which alter and improve its mechanical texture.

A third mode of trenching is to mix the surface and subsoil together. This may be adopted when the surface is very rich and tolerably deep. To trench in this way proceed as follows: after the first trench is taken out, begin at one end of the second one, and open a space three or four feet long; then break down the surface with a spade from top to bottom, so that the whole will be intimately mixed together, which should be then thrown into the first trench, and the work proceeded with till the whole is thrown out. If manure is to be worked in it should be done as the soil is thrown into the open trench.

In each of these modes of trenching it should be borne in mind that a thorough pulverization of the soil is necessary; it must not be thrown over in lumps or clods, but broken fine, either with the pick or spade. The manure should also be well incorporated throughout, that it may not lie in masses in one place, without any in others. The surface of the ground need not be levelled till the whole work is done.

Such is our chapter on trenching, which we hope will render the practice familiar, and aid in inducing all who are making new gardens to begin right at the commencement, and not have the work to go over again.

LANDSCAPE.—PART II.

BY WILSON FLAGG.

IRREGULAR or broken landscape constitutes the prevalent feature of Massachusetts and the greater part of New England. It seems to have been originally caused by the washing of the soil from the sides of the hills, leaving only their rocky foundations, precipitous and perpendicular in some parts, while the summits of the rocks swell out of the ground in rounded forms in other places. There are few countries whose surface, unless it be mountainous, is so wild, so irregular and so favorable to picturesque effects, as New England. Instead of gently rolling hills, we find hills of endless forms and sizes, furrowed, precipitous and convex, rising suddenly out of levels. Many of the latter are peat meadows, overflowed in winter, and green with a growth of ferns and grasses at other seasons. When these valleys have been reduced to tillage, they become productive farms; and the little settlements upon them, with their surrounding hills crowned with evergreen woods, are singularly romantic. The most characteristic specimens of this kind of scenery lie on the coast, especially on the northern shore of Massachusetts Bay.

This description of landscape is highly favorable to the purposes of the painter or of the improver of nature. The bold, rocky hills, partly denuded and partly covered with trees, long ridges of drift often following the course of streams, basins formed by steep hills, and containing ponds of water, represent a mountainous country in miniature, and give origin to a greater diversity of scenes than a rolling landscape. Though the latter may present as great a difference in the size and arrangement of the hills and valleys, yet the general prevalence of curves in their outlines causes every scene in most respects to resemble every other. In a broken surface, curves are mingled with straight lines and angular forms—the horizontal with the perpendicular, the pyramidal with the convex, the furrowed hill with the un-

broken level, constituting an endless variety of configurations and outlines.

As the rolling landscape resembles the surface of the drifted snow which was exposed while falling to the action of the winds; the broken landscape resembles the same, after man has thrown it into heaps, to promote his own convenience. The former may still be attractive after it has been divested of its wood, on account of the pleasing curves of its smooth and undulating surface; but the abrupt landscape is very ugly, if the hills are cleared both of wood and shrubbery, as nothing is left to cover the baldness of the rocks, which seldom, except in the shade of woods, support a carpet of green herbage. But when these abrupt hills are covered with wood, and the valleys are in variegated tillage and pasture, no description of landscape can exceed it in beauty. To improve this kind of surface all cultivation must be confined to the valleys, and to the smooth and convex elevations; for nothing is more unsightly than these broken prominences crowned with a potato plat, with their declivities stript of all vegetation, except here and there a tree or a shrub defaced by the currents of sand and gravel, which the rains have washed down from the ploughed land.

There can be no beauty in a bald rocky hill without trees or shrubbery. We may be charmed with it if it be very spacious, as expressive of a sort of dreary sublimity; but this expression fails when the greater part of it is ploughed and tilled. I have often experienced the pleasure of a ramble over an extensive range of bald hills, but have always had reason to suppose that this pleasure was enhanced by a view of the beautiful landscape of the surrounding country, presenting the opposition of fertile vales, little winding streams, and hills nodding with wood. The valleys, plains and groves spread out below, when viewed from this desolate elevation, add to the emotion of dreariness and grandeur those sensations of voluptuous delight which a pastoral scene always inspires.

It is from these pleasing oppositions that abrupt landscapes derive the greater part of their effect, since an unchangeable

abruptness would be more tiresomely monotonous than a dead level. But this seldom prevails over a great extent of territory. In general it alternates with level openings, affording not only a contrast of surface, but also many pleasing oppositions in their vegetation, the hills having a *flora* as well as *sy/va* very different from that of the plain. In a rolling country there is a tiresome monotony of vegetation as well as of surface, as the summits of the hills do not differ enough from the valleys to give rise to any important difference in the character of the plants that occupy them. In broken landscape the character of the vegetation changes as suddenly as the rocks emerge from the plain. On the latter we find the common agricultural grasses, under the care of the tiller of the soil, or perhaps the indigenous vegetation of the lowlands. The rocks that stand above this level are often covered with ferns, overlapping one another, so as to form a brilliant green roofing, shaded by trees and shrubbery, and forming a perfectly distinct contrast with the plain and its productions. If the whole be wooded, we find on the hills the oak, the pine, the birch and the hickory; in the meadow the alder, the willow, the white cedar, the red maple and the tupelo.

The man of taste sees in this kind of surface an opportunity of converting the most rugged scenes into a beautiful picture. By careful and judicious management, he may produce any kind of a scene or composition that may be desirable. As water has been denominated the "eye of landscape," rock-bound hills, with their embroidery of woods and shrubbery, are the eye-brows of landscape, and are essential to its completeness. Every one is aware of the total want of expression attached to a sheet of water, whose surface does not sink perceptibly below the level of its banks and of the plain around it. It is like the unmeaning eye in the face of one who has no brows nor eyelashes. A border of wood relieves the tameness of such a sheet of water, but to make it beautiful it must be surrounded by hills, and these must be partly wooded. It is the wood that animates and beautifies the ponds we see in the uncleared

tracts of country, and causes them to present a striking opposition to those near a large town whose inhabitants have stripped the banks of their wood.

Mountainous landscape has always been admired, and will never cease to charm the eyes and excite the imagination of the dullest of mankind. However reluctant we might feel to be surrounded by contiguous mountains, and imprisoned within their valleys, we are all delighted with a journey that leads us through their romantic passes and over their fearful heights. Every step in our progress opens a new scene to our vision, charming us alternately with confined and extensive views, on the outside of a range often sublime, and affecting the mind with a peculiar exhilaration. Great altitude is one of the most remarkable sources of sublimity arising from position, and the emotions produced by it are the more vivid when we have just emerged from some green pastoral valley.

A sense of sublimity may be excited in imaginative minds by contemplating a mountain from below; but in general a prisoned sensation must be felt in a mountain valley, proceeding from a consciousness of restraint upon our freedom. Here we have no breadth of prospect as we should have on an island, and must feel more as if we were confined by walls, even though we might emerge from it more easily than we could escape from the island. But it is certain that we are prepared to feel the influence of great elevation on arriving at the summit of a mountain, if we have just emerged from a residence in a deep mountain valley, more forcibly than if we had just arrived from a residence on the plain or in the open country.

Still the moral influence of a permanent home in a mountain valley, contrary to what it seems upon first consideration, must be highly favorable to cheerfulness, by increasing our susceptibility to be agreeably affected by the scenes that are spread out above and beyond us, and which can be seen only by leaving the valley. Our egress from our retreat must always be highly exhilarating and hopeful, because our journey is upward, and every step widens the circumference

of our vision. But if our home is on an elevated site on the mountain, that affords us a boundless prospect, its influence must be depressing, since we cannot improve our prospect by leaving our situation. Our journey into the world is downward, and every step narrows our landscapes, and brings objects which were grand and beautiful, at a distance, so near as to be tame and uninteresting. I can believe, therefore, that if one is subject to melancholy, he would find its cure more certainly by making his home in a deep valley than upon an elevated mountain site.

For a permanent residence I should prefer a plain with a view of mountains at a long distance, to a valley among the mountains, or to the mountain itself. The exhilaration produced by a wide prospect and great altitude is a tone of mind which cannot be long sustained, and we should soon lose our susceptibility to be affected by it, if it were constantly before our sight. But a view of distant mountains is not exhilarating. It acts quietly upon the imagination, when the mind is in a reflective mood; but it is never glaring, and affords no unnatural stimulus. The same may be said of any remarkable prospect from our doors and windows, if placed conspicuously before us. We gradually lose our power of enjoying it and similar views. Hence our daily and familiar prospects should never be of an exhilarating or an exciting nature; for everything that exhilarates, when habitually indulged, deadens the sensibility. Our terrestrial views about our home should be quiet and pleasing, but not remarkable, to preserve the healthy tone of the mind, as our daily food should be plain and simple to preserve the health of the body.

For obvious reasons it may not be so with celestial views. The sky, during a greater part of the day, is a mere canopy of light. Its exhilarating influences are felt only on extraordinary occasions, which are transient. It is beautiful when the sun rises and when he sets, enveloped in highly refractive vapors, and sublime when curtained by illuminated masses of finely organized clouds. But these scenes are not liable to tire us by their frequency or their duration. Give

me, therefore, a clear and unobstructed view of the heavens where I am to reside, but I should prefer a confined view of the landscape.

It is a popular error to suppose that the inhabitants of mountains acquire, from their habitual scenery, a lively imagination and an expanded mind. The effect of their position must be rather contracting, because they are for the most part confined in valleys, and are comparatively shut out from the world. It is not their limited view of the heavens and the earth that narrows their minds, but their want of intercourse with society; for mountaineers are seldom engaged in commerce, which is the grand enlightener of nations. They are herdsmen and tillers of the soil, and by living apart from the world they acquire a clannish spirit and become addicted to superstition and fanaticism. It is further believed that the inhabitants of the mountains are more warlike than the inhabitants of the plains. Their superior skill and success arise from the greater facilities afforded by their position, for practising the artifices of war. They know all the passes and all the grand points for entrenchment and attack. This knowledge and these advantages have gained them a comparatively false reputation for courage and heroism.

Nature has confined her moral and intellectual gifts to the inhabitants of no particular description of surface. A constant familiarity with the sublime scenes of nature does not exalt the imagination; neither does a confined valley, with its narrow prospects both of the heavens and the earth, cramp the mind or harden the sensibility. It is the want only of education and of intercourse with the world that produces such effects. It cannot be denied that there is a moral influence arising from landscape; but contrary to the general opinion, the influence of tame and rather homely landscapes, if they are neat and agreeable, is the most favorable. All those scenes that enchant by their beauty, or dazzle and intoxicate by their grandeur, when constantly before us are depressing, producing the same effect upon the mind that narcotic stimulants produce upon the nervous system.

Still the majority of the inhabitants of every country are unaffected in any way by their daily and habitual prospects. These exhilarating and depressing influences are chiefly felt by persons of more than ordinary culture or poetic sensibility.

It is to individuals of the latter description, however, that these remarks are addressed ; and of these I believe the majority would bear testimony to the correctness of my theory. They will agree with me in remarking that a moderate share of the beauty and sublimity of landscape, in the scenes about our home, is the most desirable on account of its influence on the mind and the spirits. We can attribute to unsightly and monotonous views, and dreary and ugly objects surrounding our daily walks, only a bad and disagreeable influence ; but it is not depressing ; it is simply unsatisfying ; and if one be within the reach of fine prospects, he is always, under these circumstances, prepared to enjoy them. Landscapes ought, therefore, never to be artificially decorated. They should be dressed only as they are dressed by nature, who, while she provides endless scenes of beauty for those who seek for them, never cloy's our sight by their profusion. Though the influence of moderately pleasing natural scenery is healthful and never tiresome, yet I can imagine nothing so absolutely melancholy and depressing as a country universally dressed in the highest style of English landscape art.

THE GRAVENSTEIN APPLE.

BY CAPT. JOHN DE WOLFE, DORCHESTER, MASS.

DEAR SIR,—As there appears to be some discrepancy in the account of the origin, name, and time of introduction of the Gravenstein apple in this country, I beg leave respectfully to hand you the following statement, not that I think there is any especial merit in the introduction, as I think we are all bound to do what good we can in promoting and enriching the products of our own soil ; neither do I make

any pretensions to be a connoisseur in fruits, or vegetables ; but this I can say, without the fear of contradiction, that in early youth I had a kind of natural instinct, or faculty, which enabled me to find the best apple tree in the neighboring orchards, the darkest night that ever was, with as much facility as in riper years I could find my way, both night or day, blindfold, to maintop-bowline. However, if it should be considered that there is merit in such introductions, I see no reason why my dish should not be the right side up in order to receive what may legitimately fall therein ; and if nothing prior to the following can be shown, then perhaps it may be well to record the fact, viz :—

Being at Copenhagen, in the fall of 1825, I noticed at the wharves a number of small craft from Holstein with fruit, principally apples ; I bought some which were recommended as the Gravenstein, a very superior apple, highly flavored as to taste and smell. I was so much delighted with this fruit, never having heard of it before, and being desirous of cultivating it in my little garden in Boston, I requested my friends, Messrs. Good Reynolds & Co., to purchase for me, at the nursery, two trees of that kind of fruit, and to be sure that they were the genuine Gravenstein, which they did. On my arrival in Boston, in May following, the trees being nearly seven months out of the ground, I had some doubts as to my being able to make them live. Knowing Gen. Dearborn to be an amateur in these matters, I presented him with what I thought to be the best one, and planted the other myself ; they both lived and grew vigorously. About a year after, I moved to Bristol, R. I., and took my tree with me and planted it there, and when I left that place several years subsequently it was in a bearing state.

I was desirous to know the origin of its name, and place, and was informed that it originated in a nobleman's garden in Holstein, near to a family gravestone,—hence the name Gravenstein.

We are highly pleased to receive this interesting account of the introduction of this fine apple into this country by

Capt. De Wolfe. Whether it had been brought here before or not does not make his endeavors to introduce it any the less creditable to him, knowing as he did that we had no such fruit in the neighborhood of Boston, and quite ignorant that it had been imported elsewhere, if in fact it had.

The letter is thoroughly characteristic of such an old salt as is Capt. De Wolfe. If he was the first to introduce it,—as he undoubtedly was into Boston,—he certainly is entitled to the thanks of every lover of fine fruits, among which the Gravenstein apple takes the highest rank. That there is a merit in the introduction of such no one will deny, for, next to the actual origination of a new variety, the introduction of one, whether native or foreign, is a highly meritorious act. Of our native fruits, especially, more than three quarters are accidental seedlings, some of which, now the most esteemed sorts, would have undoubtedly remained unknown until the present day, but for the good judgment of our intelligent cultivators who introduced them to notice.

It would be interesting to know the origin, history, and introduction of every fine fruit; but many of our best varieties have no authentic history, and some are involved in such obscurity that it would be futile to attempt to trace them out. When, however, any facts can be added to the account of such as we have, it is important that they should be generally known.

The Gravenstein is one of those whose origin is somewhat uncertain; according to the most authentic account we have of it in the *Horticultural Transactions*, it originated at Holstein, as Capt. De Wolfe has stated. From this we learn that “the parent tree, probably raised accidentally from seed, existed in the middle of the last century in the garden of the Duke of Augustenberg, at Gravenstein, in Holstein. Hirschfeld, who first described the apple, says its name is derived from Gravenstein, a ducal estate and castle in Sleswick. Others assign it an Italian origin.” This account of the Gravenstein was published in 1822, in the work just alluded to, accompanied by a beautiful colored plate of the fruit. Specimens of the apple were exhibited before the

London Horticultural Society in 1820, by Mr. Wilmot and other cultivators, and numerous trees had been imported from many parts of Germany and Sweden. This is the history of its introduction into England.

Of its introduction to this country we have no very definite information. Neither Coxe or Thatcher mention it in their treatises, and the first account of it in any pomological work appears in Kenrick's *Orchardist*, in which he attributes its introduction to Capt. De Wolfe; but on looking over the old *New England Farmer*, we find a letter from Judge Buel to Mr. S. Downer, containing a list of apple trees, presented through him to the members of the Massachusetts Horticultural Society. This letter is dated Oct. 11, 1829, four years subsequent to Capt. De Wolfe's visit to Copenhagen. In this letter, among other apples, he enumerates the Gravenstein, and remarks that this and other German sorts, was imported by Mr. C. Knudson, a German nurseryman, probably near Albany. Judge Buel particularly states that the Gravenstein "is known to be a superior fruit." This is all we can find relative to its introduction into the vicinity of Boston.

From this it would appear that the Gravenstein was imported previous to 1826, at which time Capt. De Wolfe gave his tree to Gen. Dearborn, as trees could hardly have been propagated and sent from Albany so early as 1829, if not imported before 1826. Still the trees sent by Judge Buel may have been very young, perhaps only one year old, though probably not less than two.

We have concluded that Capt. De Wolfe was not the first to bring the Gravenstein to this country, though we have only the supposition to the contrary, from the letter of Judge Buel. But that he first introduced it here there is not the least doubt, and probably it has been mostly disseminated in this neighborhood from this source. What became of the trees sent to the Massachusetts Horticultural Society we do not know, but we believe they were distributed to Mr. Downer and others, prominent members, who were deeply interested in the culture of fruits.

We repeat that we are pleased in laying Capt. De Wolfe's account before our readers. If others who have been instrumental in raising or introducing fine fruits will only render similar accounts, we shall have authentic information not only in regard to the origin of new varieties, but the introduction of those already well known. It would add to our stock of pomological knowledge, and awaken an interest which we do not feel in fruits of unknown or uncertain origin.

THE PETUNIA.

BY PROF. C. G. PAGE, WASHINGTON, D. C.

WHEN this flower was first introduced here it seemed to promise much in the way of novelties, from the great facilities it presented for the operation of hybridization and its ease of propagation. From thousands of crossings, repeated through several seasons, a great variety of beautiful flowers were produced, of every kind of variegation; but the experiment was on the whole unsatisfactory, for in nearly every flower which was spotted, splashed or striped, the change seemed to be the result of a defect or disease in the plant. The leaves of the plants were generally spotted or striped with white from a failure in the production of chlorophyle, and consequently the plants were generally unhealthy and difficult to keep a going, and therefore a few choice varieties of selfs of good habit came to be generally preferred to the fancy petunias. But a new era has now begun in petunias, and it is not a little remarkable that a flower so simple as this should possess such extraordinary capabilities. The new double varieties are not instances merely of the production of double flowers by the conversion of the organs of reproduction into petals, or a second corolla, but are in reality *beautiful monstrosities*, consisting of flower upon flower so gracefully superposed as to give the appearance of one flower. The single petunias have also made a broad stride this season, and I have now the satisfaction of witnessing

the daily development of beautiful varieties of striped petunias of perfectly healthy habit and of every shade, from pink striped with white to intense crimson and purple striped with white, all the result of hybridization with a chance seedling, beautifully striped, grown here by Mr. Jardin. I commenced this spring hybridizing with this striped variety and several choice selfs of robust growth, and the rewards of the experiment far exceed my expectations. It only remains now to repeat the characteristics of the Jardin upon the new double kinds to place the petunia in the front rank of florists' flowers. The Jardin is a medium size flower of good form and substance, with white stripes upon a deep pink ground. The flowers occasionally sport back to a dingy white, or an entire pink, and sometimes are curiously marked by one half of the corolla being white and the other pink or rose. The plant is of a healthy, strong and erect habit, and an immense bloomer. The new striped kinds of its generation are quite superior to it in size and color; while they have its excellent habit of growth. Imagine the Countess of Ellesmere somewhat enlarged and beautifully striped with clear white, and you have a good portrait of one of the new productions, and add to this picture a robust and unblemished habit of plant, and the petunias of 1857 will date among the most *recherché* of bedding and pot plants.

TREES IN MOUNT AUBURN.*

BY WILSON FLAGG.

It is not generally understood that there may be too many trees as well as too many flowers in a rural cemetery, too many for the beauty as well as for the convenience of the place. When trees are crowded closely together, they lose their lateral branches and all their characteristic beauty. One broad-spreading tree that covers a wide space of ground

*From the manuscript of a work about to be published by James Munroe & Co., entitled "*Mount Auburn, its Scenes, its Beauties and its Lessons.*"

is more serviceable for shade, and more beautiful and attractive in its appearance, than ten or twelve tall, slender trees occupying the same space. This remark is particularly applicable to trees in cemeteries, in which it is desirable to obtain as great a canopy of shade and foliage with as little incumbrance from the roots and stems of trees as can be made to subsist together. The trunk of one broad headed tree occupying the space of one or two feet in diameter, leaves the remainder of the ground that is shaded by it free to be used for a burial spot. A number of smaller trees occupying the same space fill it up so closely with their roots and stems, as to render it useless for the burial of the dead ; and though it will not be denied that there is grandeur in a dense forest of such trees, there is vastly more of this quality in a grove of trees which are broad and perfect in their shape. The first may be compared to a hall with a flat roof sustained by a large number of small pillars ; the last to a roof consisting of a few noble arches resting on massive columns, leaving unoccupied a wide intermediate space.

Mount Auburn would be at present a more beautiful place, and more convenient for the purposes to which it is dedicated, if, at the time of its consecration as a cemetery, it had been entirely free from wood, and afterwards had been judiciously planted with young trees of the prevailing species. Very few well formed trees are to be seen in these grounds, because they are mostly the elongated trees of the forest, which occupy a great deal of space in proportion to the amount of shade afforded by them, and greatly encumber the burial lots. Unfortunately, in those parts of the grounds which contain a new growth, proper care was not originally used to remove the supernumerary trees, to allow the remainder to spread out into an ample head. The pines, for example, in front of the gateway, look as if they were the primitive occupants of the forest, having been allowed, in the early stages of their growth, to stand too closely together, and to run up without lateral branches. Had only one in five or six of the present number been planted, or had they been thinned out year after year, so as to prevent the

branches of any one tree from interfering with those of its neighbors, a grove of noble trees would have spread their broad canopies of shade over this ground, charming the sight of every admirer of nature.*

It may be further remarked that it is injurious to the monuments to stand under the drip of trees, which ought not, therefore, to grow inside of the burial lots; and the only trees that ought to be planted near the lots are such as do not widely extend either their roots or their branches. Such are the different species of the *arbor vitæ*, and other coniferous trees that acquire a slender pyramidal shape. The advantages of trees in a cemetery cannot be enjoyed without a few attendant evils; but the latter might in some measure be avoided, if the larger kinds of trees were confined to the avenues and to certain tracts which are not to be used for the burial of the dead. The avenues, to answer this end, should be made of sufficient width to permit a row of large trees to stand and spread their branches freely on each side. The foot-paths, on account of their narrow width, should be bordered only with shrubbery and trees of a slender, spiry growth. The elm and the oak, which require great amplitude of space, ought to be extirpated from all narrow and confined situations.

The idea of attaining picturesque effects in a rural cemetery, by the grouping of trees, cannot be carried into practice. The necessary formality that must prevail in the construction of the paths and avenues, and in the geometrical forms of the burial lots, especially when they are inclosed by a fence, prevents any such groupings and combinations. A formal irregularity is no more picturesque than any other kind of formality. The wild and rather pleasing disorder apparent in the natural arrangement of the trees in Mount Auburn, is every year becoming obliterated, as proprietors cut down the occupants of the lots and leave only those in the paths and avenues. As often as a new proprietor lays

* These remarks do not reflect upon Mr. Mann, the present superintendent, whose practice is highly judicious and commendable. The thinning of the plantation ought to have been made more than twenty years ago, and would probably not have been neglected if one capable man had at that time the entire control of such matters.

out a burial lot, he is obliged to destroy all or nearly all the trees within its bounds. The trees must at last, therefore, be confined almost entirely to the avenues, forming rows that correspond with their directions, and exhibiting in their disposition the same irregular formality. But as the remaining trees will increase in breadth, in proportion as their number is lessened, the grounds will continue to be as well shaded as they are at the present time, and will be improved in grandeur and beauty.

It is apparent that in many cases, either some fine trees must be sacrificed, or the burial lot must be devoted to the trees instead of the graves. A great deal of judgment must be required to determine when it would be expedient to reserve the lot in order to save a tree. If the latter be young, vigorous and of good proportions, it ought to be transplanted into a convenient and appropriate location; if it be too large to be removed, the value of the tree should decide its fate. The fate which must, at some not very distant period, come upon the trees now within the lots, might suggest the expediency of planting trees near them in the avenues, in anticipation of it. The young trees thus planted would supply the places of the old growth as it is removed; and exhibit superior size and beauty. Twenty years hence, the aspect of Mount Auburn will be less wild; it will have less of the peculiar attractions of a forest; but if nothing be neglected that ought to be done, it will be a more beautiful place, independently of its monuments, than it is at the present time.

If we were preparing a rural cemetery for the use only of those who may be on the stage, after the present generation has passed away, our wisest course would be to select a spot that is entirely destitute of trees, and plant them, after laying out the grounds, in those places only in which they might always conveniently remain. But our predecessors could not have acted more wisely than they did when they selected a wooded tract of land. The present must not be wholly sacrificed to the future; and Mount Auburn, which was perhaps the most beautiful tract of forest in the country, became immediately after its establishment admired as a

garden of nature, no less than as a place consecrated to the burial of the dead. Since that time, while to a certain extent it has been suffering the loss of its original attractions, of its primitive and characteristic beauty, trees of a nobler growth have been advancing to supply the places of the less beautiful denizens of the forest, and under their shade a highly dressed surface is taking the place of the mossgrown turf of the pasture.

When selecting trees for planting in a cemetery we should reject all those species which are inclined to throw up suckers from their roots, as this habit is the source of a great deal of trouble to the keeper of the grounds, and the cause of considerable mischief to the burial lots. Of the kinds which are the most addicted to this habit may be mentioned the beech, the locust, the wild cherry, the abele and all the species of the poplar. In the vicinity of any of these trees the grounds will generally be covered with suckers, often over-running the graves, and choking the turfs and the flower beds with their intrusive growth. Among exotic shrubs, the common white spiræa of the gardens and the lilac are of this description. Of the wild shrubs, the barberry and the elder have the same habit, though the viburnums, whose flowers resemble those of the elder, are free from it.

The preceding remarks are intended as mere suggestions of some of the obvious means of improving the arboreous features of Mount Auburn. The beauty and grandeur of fully developed and wide-spreading trees have not been sufficiently appreciated, and the value of a mere forest growth has been comparatively overrated. How would the majestic appearance of the trees on Boston Common be diminished, if the space now shaded by them were occupied by ten times the present number, with only the same amount of branches and foliage? The forest has certain charms which cannot be transferred to a grove of perfect trees; but the decorations of art and the elegance of dressed grounds cannot be made to harmonize with the former, and in proportion as the works of the sculptor and the operations of the gardener are made manifest, must the park-tree be allowed to

take the place of the forest tree. It is important that the proprietors of lots should consider these points, that all their operations may be consistent, and may serve to bring about one grand and uniform result.

OUR ORNAMENTAL TREES.

BY THE EDITOR.

15. THE SHRUBBY TREFOIL. (*PTELEA TRIFOLIATA*, *L.*)

AMONG the trees conspicuous at this season of the year, for their foliage or fruit, may be noticed one with deep green leaves and large terminal clusters of elm-like looking seeds, which hang in such profusion as to give a tufted appearance to the head. It is the shrubby trefoil, or *Ptelia trifoliata*, a small growing tree, which, though not mentioned by Michaux or Nuttall, or by other eminent writers upon our native trees, is notwithstanding a very desirable ornamental tree, and worthy of a more prominent place than it has as yet attained, for it possesses many good qualities, one of which alone should entitle it to recognition, viz., that it will thrive freely in a shady situation.

We can find but a meagre account of the *Ptelea* in any of the numerous works which we have at hand. As usual, Loudon's *Arboretum* is the most complete, though he quotes his description from De Candolle. It appears from his account that it was early introduced into England, so long ago as 1704, but from some cause it was lost, and it was not till 1724 that it was reintroduced again, by Catesby, who sent it from the Carolinas.

The *Ptelia trifoliata*, (FIG. 19,) is a native of the United States, and is found from New York to Carolina in shady moist hedges and on the edge of woods among rocks. How abundantly it is distributed we have no account, but we should have supposed Michaux would have noticed it had it been very common, attaining as it does in Europe the height

of 40 feet, and probably quite as great a height in its native habitat, particularly in Carolina. It is one of our hardiest trees, quite as much so as the oak, yet its northern limit seems to be New York, as Mr. Emerson does not enumerate it in his *Trees and Shrubs of Massachusetts*.



19. THE SHRUBBY TREFOIL.

The trees grow from 10 to 40 feet high. Loudon says when it is pruned up with a single stem, it forms a handsome low tree, with a hemispherical head, but in British gardens it is more frequently found as a large shrub, with numerous stems proceeding from some basal point. The leaf is composed of three leaflets that are acute ovate, and the middle one tapered towards its base. The flowers are in

corymbs, usually tetrandrous. They are small, greenish white, and appear in corymbose clusters, in June and July. These are succeeded by flattened winged capsules (or seeds) somewhat resembling the elm, at this season nearly covering the tree, appearing so abundantly and in such large clusters as to weigh down the smaller branches. Few trees are more conspicuous in September than the *Ptelia*, loaded with its tufted clusters of seeds, set off, as they are, by the deep green foliage of the plant, which it retains till late in the season, when it changes to a dull yellow, and soon falls off.

The *Ptelia* is of easy cultivation. It grows readily from seeds, or layers, or even cuttings, (which should be put in in the autumn.) Its rate of growth is not rapid, probably 18 inches a year at the most. Our own trees, ten years old, are 15 feet high; but in England they have specimens 25 feet high, and in France, in the *Jardin des Plantes*, there are trees 60 years planted which are 37 feet high, and 40 feet in the diameter of the head. The old Bartram specimen is only 10 feet high.

Being hardy, says Loudon, and easy of culture, in any common soil, the tree is not uncommon in collections, and it well deserves a place there, both on account of the beauty of the leaves and of the fruits, and the handsome general form of the tree. From the little we could learn about it, we supposed it scarcely worthy a place among ornamental trees; but our own specimens have proved the most attractive objects in the autumn season, and we commend it as a very desirable tree for ornamental plantations, or for producing effect in groups, where its trifoliate leaves, profusely decked with the large clusters of seeds, form a pleasing contrast with the larger foliage of other trees.

FLORICULTURAL NOTICES.

NEW GLADIOLI.—The great improvement which may be effected in flowers by hybridization was never more apparent

than in the production of the new Gladioli by the French cultivators. They have raised them of almost every conceivable shade, of blush, salmon, straw, yellow, buff, chamois, pink, rose, lilac, crimson, red and scarlet, self-colored, mottled, striped, &c. A rich treat has been afforded us in the inspection of a fine bed of some of the newest kinds. It is fortunate that they are so easy of cultivation that they will soon be as abundant as the Gandavensis, and within the means of every lover of plants. They add much to the beauty of the garden, flowering as they do throughout August and September. The names of some of the new sorts are Calendulacea, Oracle, Penelope, Edith, Harlequin, Aristote, Danæ, Osiris, &c., &c.

375. *PUYA VIRE'SCENS* Hook. GREENISH FLOWERED PUYA.
(Bromeliaceæ.) New Grenada.

A stove plant; growing three feet high; with white flowers; appearing in spring; increased by division of the roots; grown in light rich soil. *Bot. Mag.*, 1857, pl. 4991.

A showy bromeliaceous plant, with leaves one and a half to two feet long, which spring from the root, throwing up tall scapes which are terminated with a spike of white, or pale yellowish green flowers. Like all of this tribe it requires plenty of room, when it forms a handsome object with its large leaves and fine cluster of blossoms. (*Bot. Mag.*, July.)

376. *RHODO'DENDRON VEITCHIA'NUM* Hook. MR. VEITCH'S
RHODODENDRON. (Ericaceæ.) Moulmein.

A greenhouse shrub; growing three feet high; with white flowers; appearing in spring; increased by grafting; grown in sandy peat soil. *Bot. Mag.*, 1857, pl. 4992.

Another new and superb acquisition to this now extensive tribe of plants, and as distinct as it is new. It is quite unlike anything we at present possess, and has attracted great attention among admirers of the rhododendron. Fine flowering specimens were exhibited at the London Horticultural Society's meeting in May last, and it is thus spoken of in the report of the exhibition:—"Among new rhododendrons exhibited by Messrs. Veitch, is a new kind from Moulmein, with pure white blossoms, measuring full four inches across, and crisped around the edges like *Azalea crispiflora*. This

must be regarded as a valuable acquisition to the greenhouse varieties of this genus." The plate represents a beautiful flower, pure white, and even more beautifully crisped on the edge than the Azalea. The foliage is not large, three to four inches long, and the flowers are produced in clusters of from three to five, not in globose heads as with the older kinds. The habit of the plant is good, and it does not attain the unwieldy size of the arboreum tribe, which are too large for ordinary collections. It is a distinct and highly attractive species. (*Bot. Mag.*, July.)

377. *DORONICUM BOURGÆI* *Schultz.* BOURGÉAU'S LEOPARD'S BANE. (Compositæ.) Canary Islands.

A greenhouse plant; growing two to three feet high; with purple flowers; appearing in spring; increased by cuttings and seeds; grown in light rich soil. *Bot. Mag.*, 1857, pl. 4994.

A highly ornamental greenhouse plant, flowering during the spring months along with the purple flowered species of the Cineraria, (or Senecio, for to that genus they are now generally referred,) of the Canary Islands. It was detected by M. Bourgeau, (now happily, for science, engaged on account of the British government on an exploring expedition in North America,) in the Canary Islands in 1855. It has much the appearance of the Cineraria, with a similar habit, and heads or corymbs of purple flowers. It is however more vigorous, often growing three feet high. It is of easy cultivation and a profuse flowerer. (*Bot. Mag.*, July.)

378. *FORSYTHIA SUSPENSÂ* *Vahl.* PENDULOUS FORSYTHIA. (Oleaceæ.) Japan.

A hardy shrub; growing three feet high; with yellow flowers; appearing in spring; increased by layers; grown in good garden soil. *Bot. Mag.*, 1857, pl. 4995.

A rare and handsome species of the well known Forsythia, of which the *F. viridissima* is so conspicuous an ornament of our shrubberies in April and May, when its gay yellow blossoms, distributed in such profusion over its leafless branches, enliven the spring months. The *F. suspensa* is a fine companion to it. The flowers are larger and handsomer than *viridissima* and appear before the leaves; the wood has a conspicuous red bark, and the shoots are almost as pendulous as a willow. The present is the original species

upon which the genus was founded. It was introduced from Japan into Europe (Holland) so long ago as 1833, but appears only recently to be known in England. Siebold states that in Japan it is scarcely known but in a state of cultivation, and seems to be derived from China. It is easy of increase, as the long pendulous branches soon strike root if covered with earth. If hardy, as it undoubtedly is, as much so as *viridissima*, which occasionally has its buds injured by very cold winters, it will prove a decided acquisition. (*Bot. Mag.*, July.)

379. RHODODE'NDRON THOMPSONI *Hook.* DR. THOMPSON'S
RHODODENDRON. (Ericaceæ.) Sikkim Himalaya.

A half hardy shrub; growing six feet high; with deep crimson flowers; appearing in spring; increased by grafting; grown in sandy peat soil. *Bot. Mag.*, 1857, pl. 4997.

One of the fine Sikkim rhododendrons discovered by Dr. J. D. Hooker at an elevation of 13,000 feet, and quite hardy in England. It is the deepest colored of all the rhododendrons, and it would be a valuable species to hybridize our *catawbiense* with, by which process much darker varieties would be obtained. Its elevated locality induces us to think it will prove hardy in our climate. It is undoubtedly one of the finest of the Himalayan species. (*Bot. Mag.*, Aug.)

380. THUNBERGIA HARRISII *Hook.* LORD HARRIS'S THUNBERGIA. (Acanthaceæ.) Moulmein.

A greenhouse climber; growing ten feet high; with yellow and pale blue flowers; appearing in spring; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1857, pl. 4998.

We recently described the new and beautiful *Thunbergia lancifolia*. We now have another species which surpasses even that fine variety. It is a recent acquisition brought from Madras, where it was carried from Moulmein, its native locality. It is a rapid growing climber, with large leaves, and immense clusters of large purplish blue flowers, shading to straw color in the throat. It was raised at Kew from seeds received from Lord Harris, governor of Madras, and flowered abundantly through the winter and spring months of last year. A botanical friend writes Dr. Hooker, in regard to its native locality, as follows: "Certainly we have a very splendid *Thunbergia* in Moulmein. It is a

common plant here, and the jungles, especially in the neighborhood, are full of it. It flowers in January, indeed throughout the cold season, and as it is a rampant climber and free grower, adds much to the beauty of the jungle. I knew it was an undescribed plant, *i. e.*, that it had not appeared in any published Flora; but as it had been for some years introduced to the neighborhood of Calcutta I imagined that you must have known all about it, and possessed plants long ago, otherwise I should certainly have called your attention to it. If it grows at home as it does here, no hot-house, except your splendid one, will hold it. It is indeed a fine thing, but I have never seen seed. It is in my garden, running all over a Jack tree, and in a neighbor's, but here nor there does it ripen seed. I brought my plant when young from the jungle." Dr. Hooker remarks that they find no difficulty at Kew in keeping the plant within bounds. It is one of the finest climbing plants, and we think in our climate will flower in the open air in summer. (*Bot. Mag.*, Aug.)

381. BURTONIA SCABRA *Broun.* ROUGH-LEAVED BURTONIA.
(Leguminosæ.) King George's Sound.

A greenhouse plant; growing two feet high; with purple flowers; appearing in spring; increased by cuttings; cultivated in sandy peat and leaf mould. *Bot. Mag.*, 1857, pl. 5000.

One of the pretty New Holland plants, with a heathlike foliage, and terminal spikes of very bright rose and crimson flowers. It was introduced to England many years ago, but subsequently lost, and it was not until 1855 that it was introduced again, having been raised from seeds sent to the Botanic Garden of Dublin. It is a very showy greenhouse plant, and worthy of introduction to all choice collections. (*Bot. Mag.*, Aug.)

382. TYDÆA AMABILIS *Pl. et Lind.* HANDSOME TYDÆA.
(Gesneraceæ.) New Grenada.

A stove plant; growing two feet high; with spotted rose colored flowers; appearing in spring; increased by offsets; cultivated in very light peaty soil. *Bot. Mag.*, 1857, pl. 4999.

A plant in nearly all respects, except the color of the flowers, resembling *Achimenes picta*, which is now called *Tydæa picta*. The leaves have the same dark nerves, but the flow-

ers are dark rose spotted with purple. It was imported from Popayan, in New Grenada, where it was discovered in 1855 in the cold regions of the Cordilleras, at altitudes of from 8 to 10,000 feet. M. Linden therefore considers it a greenhouse plant. No doubt it will do well in a lower temperature than the Achimenes. It flowers in spring, and in this appears somewhat unlike the others, which bloom all summer. Perhaps, however, it was owing to some peculiar treatment of the plant. (*Bot. Mag.*, Aug.)

General Notices.

PHLOXES.—Of late years, these have been making rapid progress in the march of improvement, and although nearly all the varieties of this beautiful genus will grow freely in almost any garden soil, still they are seldom found in first class condition. As Messrs. Downie & Laird of Edinburgh have been most successful not only in raising fine varieties of this flower from seed, but also in flowering them in perfection, we beg to lay before our readers the mode of culture adopted by them, which is as follows:—

In the first place, they select a sheltered, but at the same time an open situation for them, having a rich loam not over sandy, at least one and a half to two feet deep. This they will trench over in autumn in a rough manner, avoiding at the same time heavy manuring, more especially leaf mould or decayed vegetable matter; this last generates insects, which eat the young plants. If the ground has been well manured for any previous crop it is much safer to plant out without manure, and rather depend upon giving the plant some in a liquid state once or twice a week, just before they are coming into bloom. Nothing answers better for this purpose than sheep droppings; applications of this kind both add to the size of the spike and impart to the foliage a dark shining green. Great caution is enjoined on this point, as it is stated that many fine collections have been lost by injudicious manuring. Also avoid, if possible, planting on a steep or sloping piece of ground, as few plants suffer so soon for want of water as the phlox. In dry weather the beds should receive a good watering at least once a week. Should this be neglected, the plants will come both weakly and prematurely into bloom, and have a very unsightly appearance; and, as young plants produce much finer spikes than old ones, cuttings should be struck the summer before they are wanted under a hand glass, and potted off as soon as struck, (which will generally be in about four weeks,) and kept in pots in a cold frame over winter. Towards the end of March, if the

weather is favorable plant out in rows two feet apart in the row, and three feet asunder, according to circumstances. To procure a succession of bloom, take the strongest cuttings from the old stools, when they are about three inches long; use five-inch pots, putting one cutting into each pot; place them on a gentle hotbed, and when well rooted and hardened off they may either be planted out or repotted in eight-inch pots, plunged out in any sheltered situation, and taken into the greenhouse when they begin to show bloom. These will be found useful if wanted for exhibition about the end of August or beginning of September. To grow phloxes in perfection they should be renewed from cuttings at least every three years, and, if wanted for exhibition, two or three stems may be left on an old, and one only on a young plant. Have them well secured to stakes and protected from rain, and, if possible, from scorching sunshine.

About the middle of March, a selection should be made from plants struck the previous season, taking care to choose those that are throwing up vigorous shoots. Put one plant in each pot, allowing not more than two stems to each, using pots from eight to twelve inches in diameter, according to the strength of the plants, avoiding too much drainage. Pot with rich fibry loam, adding a little sand and well decomposed manure. The dwarfier growing sorts may be placed under glass at once, either in a cold frame or greenhouse, and kept as near the glass as convenient. The dwarfier they can be grown the better. Give air on all possible opportunities. A little weak liquid manure may be given with advantage occasionally. The tall growing varieties may be plunged out of doors in any sheltered situation, and brought into the conservatory or greenhouse. If they have long naked stems the pots can be placed out of sight, so as to make the heads of bloom display themselves above other plants. By a careful selection, and only bringing the plants in-doors as they show flower, a succession of bloom may be kept up from June till September. When quantities of them are grown as just described, they produce a beautiful display.

In repotting the phlox care must be taken not to break or reduce the ball, although shifting from a twelve to an eighteen-inch pot, as on this particular much of the future success of the plant depends. Should large specimens be wanted, those that have flowered once may be kept over winter in a cold frame, and if this is inconvenient they may be plunged out of doors and covered over with three inches of coal ashes or tanners' bark, taken up early in spring and repotted and thinned to three or four stems, and treated as formerly directed; they will then amply repay any care and attention that may have been bestowed upon them.

The following are well adapted for most purposes, being dwarf and bushy in habit:—

Abdul Medschid Khan,	Criterion,	Masterpiece,
Admiral Linois,	Dr. Leroy,	Monsieur Fontaine,
Alice Allain,	General Brea,	President M'Carrel,
Amabilis,	Harold,	Princess Mathilde,
Antagonist,	Lichniflora,	Queen Victoria,
Colonel Dundas,	Leonida,	Rubra.
Countess of Home,	Madame Couslin,	

It may be added that a collection of phloxes, kindly presented to the London Horticultural Society by Messrs. Downie & Laird, may now be found in the Gardens at Chiswick. Many of the same varieties are also at present beautifully in bloom in private establishments, and for the decoration of mixed borders nothing could possibly be handsomer.—(*Gard. Chron.*, 1857, p. 581.)

MANURING FOREST TREES.—In your paper of the 8th inst. there is an article on this subject; perhaps the following remarks may be of some use to your correspondent. I have made a few experiments and observations how trees might recover their health and become useful and ornamental to those who possess them. The want of proper nutriment either to vegetables or animals soon shows itself in one way or another, and food applied even in a rough state is to all appearance greedily received when animated beings are in want of it. The trees I intend to make a few remarks upon had fallen into a languid state through want of food, or, in other words, the soil appears to have been worn out by means of the crop that grew upon it. In a hollow part of a wood where some elms and other trees were planted some years ago, symptoms of decay manifested themselves in a very prominent form, such as the leaves turning yellow early in the season and falling off, when others in a more healthy state remained longer to perform the office assigned them. Leaves in such a state make little wood for the tree that bears them; the young shoots apparently never ripened their wood, for many of them died, and the trees altogether had a decaying appearance. The hollow ground was used to put rubbish in that came from the garden and other places. It was thought at first that the rubbish would kill the trees by burying the roots too deep, but much that was put there was of vegetable origin, which soon decomposed, and being of a porous nature did not prevent the air from reaching the roots, and instead of injuring the trees they soon began to show signs of improvement. Their health recovered rapidly, their leaves expanded in length and breadth, their shoots did the same, and their leaves, instead of being the first to droop in the autumn, continued to hold on as long as most deciduous plants do. From these observations we may learn that even old trees may be made to have a healthy old age, and young ones that have set prematurely in their growth, from want of proper soil to grow in, or some deficiency in the constituent parts of the soil, may be made, either by liquid or solid food, to resume a healthy state, and may live from generation to generation a shelter and an ornament in the place which they occupy. Liquid manure may also be applied with advantage to forest trees. In a plantation where the trees were chiefly oak, elm, maple, Spanish chestnut, and birch, and the soil light, the subsoil being of a clayey nature, where liquid manure was applied to some of the trees, they profited greatly by it. The few elms that remain in the plantation in the natural soil measure on an average about one foot seven inches in circumference at three feet from the ground; the maples or sycamores in the same soil measure about one foot nine inches in circumference at three feet from the ground. In the same plantation and same soil there are two

places where the maple and elm have grown much better than the rest. These have had their roots occasionally watered with liquid manure, and the difference in the measurement of the stems shows that they agree well with such treatment. In one of the places the circumference of the maple, three feet from the ground, is three feet five inches, and contains about 12 cubic feet of timber, and the elm measures four feet in circumference, and contains about 20 cubic feet of timber; in the other place the maple measures three feet six inches in circumference, and contains about 14 cubic feet of timber, and in both places the trees are remarkably healthy, and stand about 18 feet apart. It may be a long time before such manure can be spared for growing forest trees, and there are some kinds to which it would do more harm than good if it were applied, such as pine and fir trees; but if even the slops thrown away as waste water from gentlemen's and farmers' kitchens and dairies were applied to the purposes of arboriculture, there would be both pleasure and profit derived from the application. Many trees may be seen growing in soils naturally poor and unfitted to carry heavy timber without assistance, and trees considered by many to be in the last stage of existence may be made to renew their growth; for, give a tree room to grow and food to live upon, and vegetable physiologists will not be able to tell how long it should live and how large it should grow.—(*Gard. Chron.*, 1857, p. 598.)

TREE GUARDS.—In reply to an inquiry whether the rubbing of sheep is injurious to ornamental trees, I have observed that it has been injurious. I have a guard, which I adopted after trying many several years ago, and subsequent experience has confirmed its advantages. It is formed as follows:—Take stakes, such as are used for hurdles for sheep folds, drill holes through each three or four inches from the top and from the bottom; then saw another stake across into two-inch lengths, and drill each in the direction of the growth; thread the stakes and the short pieces, alternately, as many as may be necessary to surround the stem of the tree, on a copper wire at each end, and close it round the stem and fasten the wire. This forms a secure cradle, very much resembling that put over a horse's neck to prevent his reaching to bite a blistered leg. Space must be left to admit of the growth of the stem for three or four years. The cradle lies loose round the tree, on the surface of the ground, and never damages it; and it effectually prevents barking, for which some animals have a most inconvenient propensity. Three feet stakes are sufficient for sheep and five feet for cattle.—(*Ib.* p. 598.)

MANDEVILLA SUAVEOLENS.—This beautiful climber is generally treated as a stove or greenhouse plant, at least I have not noticed any account of its having been grown in the open air. If the following mode of treatment, therefore, is new to any of your readers, I shall be pleased to have been the means of bringing it under notice. The circumstances which led to my treating it as a hardy plant are these. I had a large specimen on the back trellis of a vinery, where it grew most luxuriantly for some years. Every

summer, however, it was attacked with green fly and red spider, and notwithstanding every exertion these pests not only maintained their hold on the Mandevilla, but the latter spread to the vines, which I need not say it greatly injured. I saw I had no chance of ridding the vines of spider unless I removed the plant from the house, and I reluctantly made up my mind to do this. Observing, however, that such branches of it as passed through the sashes at the top of the vinery to the open air continued to flourish till the beginning of winter, I began to think that the plant was not so tender as it had been represented to be, and accordingly I determined to give it a trial on a wall. I therefore cut it in to the bare woody stem, about three feet from the ground, and removed it into a good sized pot which I placed in a small orchard house erected here last autumn. During the whole of the winter it received no covering, and there being no fire in the house the thermometer frequently fell as low as 20° , and on one or two occasions to 17° . The vitality of the plant, however, continued unimpaired, and I planted it out towards the end of March on a wall with a south aspect. As the season advanced the stem became studded with numerous buds, which in due time threw out branches, and it is now growing and blooming abundantly. If the weather is at all favorable I hope to have it flourishing for a couple of months to come, and I am sanguine enough to hope, from the degree of cold to which it was subjected last winter and stood uninjured, that I shall be able to preserve it during the ensuing cold season by covering it with a thick mat.—(*Ib.* p. 598.)

FERN GROWING.—It should be borne in mind that there is, in the case of stove ferns, the same necessity for a period of rest (induced by lower night temperature in winter than in spring and summer) as in that of other stove plants. But this important point in stove fern culture is too often overlooked, and if any difference of temperature occurs, it is rather the result of chance than of intention, and as a consequence the plants literally live too fast—2 or 3 years' growth are compassed in one year, and the result is drawn weakly fronds—so tender indeed that a little sunshine, damp or extra air at once disfigures or destroys them: 55° to 60° at night in winter will keep any stove fern, in this catalogue, in good health, and prepare it for a vigorous spring growth.

Air, too, should be regularly given, in moderation, in summer, to lessen the effect of excessive sunshine. This particularly applies to July and August—when artificial heat ought to be entirely discontinued—and the stove fernery, for a while, cease to be a stove in point of temperature. Such a structure, if kept quite close during bright sunshine, will, though shaded, be unbearably warm, and many of the ferns in it will speedily show that its close heat is more than they require. Moreover, in such a close and high temperature it is scarcely possible to spend an hour without an amount of personal inconvenience that very much detracts from the gratification every fern-lover feels in a leisurely and frequent inspection of his collection.

Soil.—The peat, which must be the basis of the compost, ought to be of a rather spongy and very fibry nature—such as orchid growers use, and

which abounds in decayed moss, fibry roots, and the decaying creeping stems of the common brake—avoid the close, heavy, dark-colored kind which, when very wet, becomes a dark muddy mass. For small ferns no loam need be added, but for large growing kinds in large pots moderate-sized pieces of yellow turfy loam, with the herbage decayed, and used in moderation, is decidedly advantageous, as it retains moisture longer than peat does, and in consequence many of the tiny roots will cling to the pieces of it. Enough of pure white sand should be used to give the compost a slightly sandy appearance. Let the relative proportions be of peat at least two thirds—of loam one-third or less. To keep the mixture porous, and to secure proper drainage through it, add to it a liberal portion of freestone; or better still, and every where accessible, well burnt cinders—proportioning the size of the pieces to the size of the plants. The compost must not be sifted. In the lardy fernery, out of doors, the soil is not of so much consequence as in pot culture. It may be composed of decayed leaf-soil (where peat cannot be got) and loam, and for large-growing kinds even loam alone would do. If peat, however, can be procured, by all means let it form half the mixture.

Water.—A too frequent impression prevails that water may be unsparingly used in pot culture, and in carrying that impression into practice the soil is often reduced to little else than bog-mud, and as a matter of course all the more delicate and most succulent kinds perish—hence one cause for the supposed difficulty in cultivating many *Cheilanthes*, *Nothochlænas*, &c., and the frequent loss in winter of the gold and silver *Gymnogrammas*. The right practice is not to allow the fronds to droop from dryness of the soil, but as soon as its surface looks and feels dry, give water at once and enough—not little and often; and if the drainage and compost are right the soil may be touched a few minutes after watering without soiling the fingers. The drainage in the bottom of the pot need not exceed one fourth of its depth. Syringing or sprinkling (in either case as slightly as possible and with rain water) the foliage of all ferns, excepting the very succulent and small hairy kinds, that are cultivated under glass, is very advantageous, if practised once or twice daily during the warmest summer weather.

Insects.—The two greatest pests to the fern-grower—thrip and brown-scale—are not easily extirpated. The thrip seriously disfigures the fronds; to destroy it, remove the most infested fronds and fumigate the others often, but cautiously, with tobacco, or use tobacco-water, adding to it a little black sulphur, and applying the mixture with a camel's-hair brush, syringing it off again in a few hours—repeat the application till all trace of it disappears. The brown-scale should be removed by hand; if the fern is much infested with it, cut away all the fronds at once and remove any trace of it on the new growth.

Glass covered Fern Cases are too frequently kept as close as though the plants were undergoing a long sea voyage, and required the total exclusion of the external air. This is the chief cause of the ferns in so many of these very interesting structures having a drawn and untidy appearance, and the glass soiled and obscured by the condensed moisture. Perhaps the

following hints may be useful:—*Case* for the soil should have a perforated bottom, and be made to fit into, but not to touch, the bottom of a water-tight outer one, having an appliance for removing the drainage-water occasionally. *Soil*.—The same as for large pot ferns (see above), to be raised considerably above the rim of the case, and to rest on at least an inch of large cinders or other pieces of porous drainage material. *Air*.—Admit occasionally, but not on very dry sunny days, as it is then desirable to retain the internal moist air. Small glasses may be slightly tilted on one side; large ones must have special ventilators. *Water*.—As air is given occasionally, and the case has a perforated bottom, there will be a moderate escape of moisture from the soil, and that will have to be replaced at distant intervals, and then only when the surface gives slight indications of dryness. *Planting*. Nothing is eventually gained by crowding the plants and leaving no room for future growth. Occasionally wash and well dry the glass, replacing it quickly.—(*Gard. Chron.*, 1857, p. 613.)

PEGS FOR BEDDING PLANTS.—Several modes of pegging down plants have lately been recommended. Nothing, however, answers more perfectly than pegs cut from the common brake during the month of September and early in October. The cutting them is an amusement for children, and would make a good excuse for a picnic. My children make a nice sum for the Missionary Society every year by selling them to friends at one shilling per hundred.—(*Ib.* p. 614.)

Societies.

UNITED STATES AGRICULTURAL.

The annual exhibition of this Society was held at Louisville, Ky., on Tuesday, Sept. 3d, and was attended by a large concourse. Owing to the earliness of the season, the show of fruits was not large, and the contributors were principally from the West. Had it been later in the year, undoubtedly quite a number of cultivators would have sent specimens from the East. We copy the following report of the fruits and flowers from the Louisville papers:—

Floral Hall.—The collection of J. F. Willey, of Indiana, embraced 80 kinds of apples, some of them fine specimens; also 35 varieties of peaches. J. Sigerson & Brother of St. Louis exhibited 144 varieties of apples. These gentlemen select as the best for summer apples the Sanders June, Yellow Harvest, and Caroline June; for fall apples, the Wine, Rambo, and Late Queen; for winter, the Canfield, Jeniton, Newark or Fall Pippin, and Harrison. Beside the apples, they showed some 47 plates of pears. Dr. J. A. Warder of Cincinnati exhibited very fine specimens of Catawissa raspberries, and some remarkable seedling Crab apples, and a few superior pears.

R. Buchanan of Cincinnati had very fine looking specimens of apples and pears. E. J. Todd of Indiana showed 50 kinds of apples, and 9 specimens of native grapes. Ormsby Hite of Kentucky, whose farm is on the Ohio river about four miles from Louisville, exhibited 32 varieties of apples, and some native grapes. G. E. Heinsohn of Jefferson County, Ky., apples and grapes. J. Johnson of Ky., Catawba and Isabella grapes, and 12 varieties of apples. Wm. Heaver of Cincinnati, 30 varieties of pears, and hothouse grapes. N. Durfee, Esq., of Fall River, Mass., exhibited the most tempting bunches of hothouse grapes that we ever saw. He had one bunch of the Palestine weighing 10 $\frac{3}{4}$ pounds; a splendid bunch of large Muscat of Alexandria and some Black Hamburgs. Hobbs & Walker, 30 varieties of apples. Arthur Peter, Esq., near this city, exhibited 21 plates of pears, and six varieties of peaches. For plums, Mr. Wright of Indiana obtained the first premium.

Hon. M. P. Wilder, of Mass., displayed 100 different varieties of pears, but did not compete for a premium. Lawrence Young, Esq. of this county, who from the first has entered into the labors of the preliminary arrangement with untiring zeal, had on exhibition, in a neat glass case, a plate of Alexander apples, faultless in shape and color; one of American Summer Pearmain, and one of Yellow Egg plums. He had also a very large Van Zandt's Superb peach, and 40 varieties of pears, not competing for premiums. He took the premium for the best 50 varieties of apples, and exhibited also a basket of apples declared by the judges to be the best on exhibition. T. Collins of Indiana showed about 20 plates of apples, and Mr. A. H. Ernst of Cincinnati, a fine lot of pears.

The new Chinese hemp is thought to be destined to supersede the variety in common use. The plant is seventeen feet; it is sown broadcast, like other hemp, requires only a moderately rich soil, and is said to yield 1400 pounds per acre.

J. P. Morton of Louisville had seven kinds of asters, white, blue and crimson; a *Cissus discolor*, with its curious leaves of dark green, clouded with ash color, and tinged underneath of a deep maroon tint; and a *Lantana*, tall, tree-like and graceful in appearance. E. Wilson exhibited the curious *Araucaria excelsa*.

The feather-like, tasteful decorations of evergreens spread over the slight pillars and beams of the hall, were designed and made by Henry Manz, a nurseryman of Louisville. On tables were monster vegetables, and bags and barrels of grain of all kinds.

The following is the award of premiums for fruits:—

Apples.—First premium to Lawrence Young, Jefferson Co., Ky.; second premium to John Sigerson & Brother, Missouri.

Best 30 varieties, first premium to Hobbs & Walker & Co., Jefferson Co., Ky.; second premium to O. Hite, Jefferson Co., Ky.

Best 12 varieties, first premium to Jacob Johnson, Jefferson Co.; second premium to George E. Hancock, Jefferson Co.

Best dish, first premium to George E. Heinsohn, Jefferson Co.; second premium to J. M. Robinson, Kentucky.

Pears.—Best 50, first premium to Wm. Heaver, Ohio; second premium to J. Sigerson & Brother, Missouri.

Best 30 varieties, first premium to Wm. Heaver, Ohio.

Best dish, first premium to Jacob Johnson, Ky.; second premium to S. L. Gaar, Jefferson Co.

Best 12 varieties, first premium to J. A. Warder, Ohio.

Peaches.—Best, first premium to J. E. Willey, Ind.; second premium to J. W. Wright, Ind.

Best dish White Flesh Clings, first premium to John F. Willey, Ind.; second premium to Jacob Clore, Ky.

Watermelons.—Best, special premium to Wm. Hinton, Ind.

Musk Melons.—Best, special premium to G. E. Heinsohn, Ky.

Plums.—Best varieties, P. S. Burk; one variety, J. Thatcher, Ky.

Raspberries.—J. A. Warder, Ohio.

Grapes.—Native or Seedling, to Miss E. J. Todd, Ind.

Isabella, first premium to Henry Nantz, Jefferson Co.; second premium to Jacob Johnson, Ky.

Catawba, first premium to Jacob Johnson, Ky.; second premium to O. Hite, Louisville.

Foreign, first premium to N. Durfee, Mass.; second premium to Wm. Heaver, Ohio.

Massachusetts Horticultural Society.

Saturday, Sept. 5, 1857.—An adjourned meeting of the Society was held to-day—the President in the chair.

Exhibited.—**FLOWERS**: From J. Breck & Son, German asters, phloxes, verbenas, &c. From Hovey & Co., German asters (20 varieties), verbenas, dahlias, &c. From S. Walker, seedling phloxes. From W. C. Strong, Clerodendron Fortunii, and seedling verbenas. From Jona. French, asters, verbenas, &c. From E. S. Rand, Jr., achimenes, seedling gloxinias and other flowers. Cut flowers, asters, &c. were contributed by Mrs. Richardson. Miss A. C. Kenrick, Miss C. P. Barnes, F. Winship, C. S. Holbrook, T. G. Whytal, J. Murray, J. W. Foster, W. Burch, Barnes & Washburn, J. Nugent, Evers & Co., W. E. Carter, G. N. Noyes, Galvin & Hogan, C. F. Copeland, J. Waterhouse, A. Bowditch & Son, and others.

AWARD OF PREMIUMS AND GRATUITIES.

ASTERS.—For the best 30 flowers, to Hovey & Co., \$5.

For the second best, to J. French, \$4.

For the next best, to Evers & Co., \$3.

For the next best, to J. Breck & Son, \$2.

PERPETUAL ROSES.—For the best, to F. Winship, \$5.

For the second best, to Galvin & Hogan, \$4.

For the third best, to J. Breck & Son, \$3.

GRATUITIES.—To W. E. Carter for bouquets, J. Murray for heath, and Barnes & Washburn for display, \$2 each.

FRUITS: From T. Hastings, Early Black and Diamond plums, both fine. From E. A. Story, Pumpkin Sweet apples. From C. E. Grant, Coolidge peaches. From Wm. P. Perkins, Muscat of Alexandria, B. Hamburg, Wilmot and Cannon Hall grapes. From N. Stetson, Shanghai peaches, well grown and of so large a size (11 inches in circumference, weighing about 12 oz. each) as to prove the main attraction on the tables of to-day. This is a seedling raised from a stone received from Shanghai—hence the name. It is a clingstone, of delicious flavor, and, as it will probably become widely disseminated, the Committee suggest that it be called “Bridgewater.”

From J. Nugent, Dorchester blackberries. From F. Marsh, Cogswell apples. From I. Davis, seedling apples. From W. Lothrop, peaches. From J. Murray, B. d'Amalis pears. From E. S. Purdy, peaches. From G. Wilson, Rostiezer pears, fine. From S. W. Cook, pears. From S. W. Fowle, Dearborns, very fine. From J. Munroe, Pumpkin Sweet apples. From Mr. Humphrey, two varieties grapes. From W. W. Wheildon, six vars. apples. From F. Dana, three vars. pears, and mandrakes. From J. F. Allen, figs and grapes in variety—one variety a seedling from Black Hamburg and Chasselas, which, from the peculiar coloring of the skin, will prove valuable as a wine grape, in the manufacture of Port or Claret. From Hovey & Co., seven varieties of pears.

AWARD OF PREMIUMS FOR FRUITS.

APPLES.—For the best 12 summer apples, to G. B. Cutter, for the Williams, \$6.

For the second best, to J. W. Foster, for the Early Harvest, \$4.

PEARS.—For the best, to Hovey & Co., for the Boston, \$5.

For the next best, to H. Vandine, for the Muskingum, \$3.

For the third best, to A. D. Webber, for the Rostiezer, \$2.

BLACKBERRIES.—For the best, to J. Nugent, for the Dorchester, \$5.

For the second best, to G. Merriam, for the Dorchester, \$4.

For the third best, to J. B. Moore, for the Dorchester, \$3.

For the fourth best, to J. W. Foster, for the Dorchester, \$2.

CURRENTS.—For the best, to J. W. Foster, for Red Dutch, \$3.

For the next best, to Capt. G. Wilson, for Victoria, \$2.

GOOSEBERRIES.—For the best, to A. D. Webber, \$3.

For the second best, to J. W. Foster, \$2.

RASPBERRIES.—For the best, to J. W. Foster, for Knevet's Giant, \$4.

For the second best, to W. R. Austin, for Knevet's Giant, \$3.

For the third best, to L. Jennings, for Knevet's Giant, \$2.

The Supreme de Quimper, exhibited by Messrs. Hovey, would have received a premium, but was ruled out, they having been awarded one premium under the same head.

Sept. 12.—Exhibited. FLOWERS: From J. Breck & Son, verbenas, phlox, fine gladiolus, spireas, larkspurs, dahlias, asters, lobelia, fine, Senecio, fine seedling *Tropæolum Breckii* and *Tropæolum Randii*, two fine seedlings, probably hybrids between *T. Lily Schmidt* and *T. pulcherrima*, and far superior to either for border flowering or greenhouse culture. From G. G. Hubbard, Cambridge, fine display of verbenas. From Barnes & Washburn, dahlias, gladiolus, salvias, datura, larkspurs, fine seedlings, verbenas, phloxes, lilies, *Centaurea tigris*, petunias, roses. From E. S. Rand, Jr., verbenas, heliotropes, achimenes, *Perilla*, phloxes, *Tropæolums*, gentian, lilies, roses, *Loasa*, *Begonias*, *Vallota purpurea*, two blooms and leaf of *Nymphaea cærulea*, *Hedychium Gardnerianum*, very rare. From Hovey & Co., verbenas, gladiolus, fine, dahlias, a fine display. Cut flowers, bouquets, &c. were contributed by T. Smallwood, J. Nugent, B. Harrington, G. D. Noyes, J. O. Williams, C. Copeland, F. Winship, J. Murray, J. W. Busch, and others.

GRATUITIES AWARDED.

To Barnes & Washburn, J. Breck & Son, F. Winship, and C. Copeland, \$2 each.

To J. Murray, Hovey & Co., and Miss Russell, \$1 each.

FRUITS: From H. G. Fettee, Coolidge peaches. From F. Dana, seedling pear No. 12. From A. Burnette, Belle Lucrative pears. From F. Marsh, Persian melons, raised in open ground, very fine. From G. Merriam, Bartlett pears. From J. F. Allen, Late Admirable peaches and grapes in var. From S. G. Perkins, Boston nectarines, extra fine. From S. W. Fowle, a handsome show of the Alexander apple. From S. A. Bemis, Red Astrachan and Early Bough apples, raised in the vicinity of the White Mountains. From H. Vandine, Tyson, Andrews, Shurtleff Seedling, Muskingum and Cushing pears; Washington, Apple, Duane's Purple, Green Gage, Harding's Seedling, Pond's Seedling, Smith's Orleans, Corse's Notabene, Jefferson, Columbia, Lawrence's Favorite, Scruiger's Scarlet Gage, Red Gage, Ives' Seedling, Penobscot, Bingham, Huling's Superb, New Orleans, Aspinwall Seedling and Kirk plums. From A. Dexter, Harvard pears. From E. M. Richards, Christiana melons, fine. From B. Harrington, Queen and Foundling apples; Bartlett and other pears. From J. W. Newhall, figs, extra fine, open culture. From Hovey & Co., Thomas plums; Watson and other pears. From J. Nugent, Dorchester blackberries. From E. A. Story, Harvard pears. From T. Hastings, extra fine Diamond plums. From W. G. Randall, Maiden's Blush apples. From C. E. C. Breck, Fallawater apples. From E. Brown, apples and pears.

THE TWENTY-NINTH ANNUAL EXHIBITION OF THE SOCIETY was held at the Music Hall, Boston, on Tuesday, Wednesday, Thursday and Friday, the 22d, 23d, 24th and 25th of September. The arrangements for the accommodation of the fruits and vegetables were the same as in previous years,—five wide tables running the length of the main floor for the fruits, and two beneath the gallery, running crosswise, for the vegetables. The plants in pots were displayed to better advantage than last year, two circular stands, in addition to the permanent stage, being erected for the smaller

and choicer kinds, with a long table for the smaller designs and bouquets. No decorations were made around the hall this year, its high finish and pan-nelled ceiling being in themselves beautiful.

The designs were not of so high an order as last year. Indeed very few of them came up to our idea of what they should be. That by Mr. Harris, gardener to H. H. Hunnewell, which obtained the first prize, was worked with flowers in a harmonious arrangement of colors, but the design did not please us so well as the execution. A cornucopia contributed by Mrs. I. Lombard, Jr., of Newton, was one of the most tasteful designs in the hall. The plants in pots were about the same as in previous years; some collections being better and others not as good. A *Nymphæa cærulea* from E. S. Rand, Jr., in a small tank, attracted much attention. A miniature design of a cottage and garden, from T. G. Whytal, afforded some idea of the taste which may be displayed in laying out small suburban grounds. Many smaller pieces we have not time to particularize.

The Germania Band discoursed exquisite music both day and evening, and on Friday, the closing night of the Exhibition, the hall was filled to overflowing with the members and their families, invited guests and the public, a large proportion of whom were ladies, to hear the Rev. Henry Ward Beecher, who had been invited to deliver an address upon the occasion. It is hardly necessary to say that the expectations of the numerous assembly were not disappointed. The reverend gentleman, who is himself a cultivator and familiar with the theme, took up the subject of "flowers," and in his happiest manner portrayed the pleasure arising from the possession of a garden, and the nurture of plants, as well as the influence of flowers on our daily lives. We hope we may be able to give the address in full in a future number, and therefore shall not make any extract from the meagre reports which have already been published.

We proceed to give as complete an account of the exhibition and award of premiums as the lateness of the month and our room will admit:—

PLANTS IN POTS:—From J. P. Cushing, twenty-five plants, among which were fine specimens of *Chamærops humilis*, *Cycus revoluta*, &c. From M. P. Wilder, twenty plants, including *Stephanôtus floribunda*, *Physiánthus álbens*, *Gardénia Fortúni*, &c. From Hovey & Co., twenty plants, among them *Rondelètia speciösa*, *Ardisia crenulata fructo álbo*, lantanas in variety, *Stephanôtus floribundus*, *Cissus discolor*, &c. From F. Wmship, twenty plants, including *Abútilon álbum*, *Erythrina crista gállii*, *Cryptomèria japónica*, &c. From E. S. Rand, Jr., twenty plants, among them several fine gloxinias, achimenes, *Cissus discolor*, *Nymphæa cærulea*, &c. &c. Plants were also contributed by A. Bowditch, T. W. Walker, E. A. Story and others.

FLORAL DESIGNS:—From H. H. Hunnewell, a large columnar design, brilliantly arranged with showy flowers. From Mrs. Wm. Kenrick, a floral cross with the inscription I. H. S. worked in flowers. From Mrs. E. A. Story, a beautiful moss flower stand, worked with much skill. From Miss S. W. Story, a specimen of oriental painting, representing a bouquet of flowers. From T. G. Whytal, a miniature suburban cottage and grounds,

very prettily arranged with beds of flowers, and plants representing trees, &c. From Mrs. W. P. Houghton, Newton, a Chinese pagoda, very neatly worked and containing within, a dish of very fine flowers. From Jona. French, a large urn, covered with amaranths in diamonds and lozenges, filled with an immense bouquet. From Mrs. Wm. Ashby, a floral temple. From Mrs. I. Lombard, Jr., a cornucopia of fruits and flowers, executed in the most tasteful manner and deservedly attracting great attention. Other smaller designs were contributed which we have not room to enumerate.

BOUQUETS:—From Hovey & Co., two superb bouquets, composed principally of red and white Japan lilies, dahlias and asters. From Galvin & Hogan, two large bouquets. From F. Winship, two smaller bouquets, composed principally of marigolds and love lies bleeding, &c. Parlor bouquets were contributed by J. Nugent, M. P. Wilder, Hovey & Co., Galvin & Hogan, E. S. Rand, Jr., and others. Numerous bouquets also ornamented the tables and flower stands throughout the hall.

WARDIAN CASES:—Some very pretty examples of Wardian cases were contributed by Messrs. Graff, of New York, which were much admired. The plants were in fine condition, and afforded a good opportunity to examine this novel and interesting mode of growing plants in the parlor. We intend soon to give some account of the method of growing plants in these cases, which we hope to see more generally introduced among us, as parlor ornaments.

CUT FLOWERS:—The display of cut flowers was liberal and excellent. Mr. C. Copeland filled one stand with roses, dahlias and various other flowers, most tastefully arranged as regards color, &c. Messrs. Barnes & Washburn had a fine show of dahlias, Japan lilies, &c. F. Winship had a similar stand, and Messrs. Rand, Breck & Son, Hovey & Co., A. Bowditch, G. G. Hubbard and others, had handsome collections; that of Messrs. Hovey & Co. embracing a large number of new and fine dahlias, Japan lilies and asters.

The following is the award of premiums in this department:—

PREMIUMS AND GRATUITIES AWARDED FOR DESIGNS, PLANTS, ETC.

POT PLANTS.—For the best display, to J. P. Cushing, \$25.

For the second best, to M. P. Wilder, \$20.

For the third best, to E. S. Rand, Jr., \$15.

For the fourth best, to T. W. Walker, \$12.

For the fifth best, to F. Winship, \$10.

For the best specimen plant, to Hovey & Co., for *Cissus discolor*, \$10.

For the second best, to E. S. Rand, Jr., \$8.

For the third best, to J. Murray, \$6.

COXCOMBS.—For the best six in pots, to T. W. Walker, \$3.

For the second best, to J. W. Edmonds, \$2.

BALSAMS.—For the second best six in pots, to T. W. Walker, \$2.

FLORAL DESIGNS.—For the best, to H. H. Hunnewell, \$20.

For the second best, to Wm. Ashley, \$15.

For the third best, to Thomas G. Whytal, \$10.

For the fourth best, to Jona. French, \$8.

For the fifth best, to Mrs. E. A. Story, \$5.

For the sixth best, to Mrs. J. A. Kenrick, \$3.

BOUQUETS.—For the best pair suitable for the Bradlee vases, to Galvin & Hogan, the Bradlee plate, \$10.

For the best pair suitable for the Jones vases, to F. Winship, \$10.

PARLOR BOUQUETS.—For the best pair, to M. P. Wilder, \$8.

For the second best, to James Nugent, \$7.

For the third best, to Galvin & Hogan, \$6.

For the fourth best, to Hovey & Co., \$5.

For the fifth best, to F. Winship, \$4.

For the sixth best, to E. S. Rand, Jr., \$3.

HAND BOUQUETS.—For the second best, to E. S. Rand, Jr., \$3.

MANTEL BOUQUETS.—For the best, to William E. Carter, \$5.

CUT FLOWERS.—For the best display during the exhibition, to C. Cope-land, \$15.

For the second best, to E. S. Rand, Jr., \$12.

For the third best, to Barnes & Washburn, \$10.

For the fourth best, to F. Winship, \$8.

For the fifth best, to J. Breck & Son, \$6.

GRATUITIES.

FLORAL DESIGNS.—To Miss E. M. Harris, \$4; to Anna C. Kenrick, \$2; to Mrs. W. P. Houghton, \$4; to Miss S. A. Russell, \$3; Mrs. Wm. Richardson, \$4.

PARLOR BOUQUETS.—To J. Breck & Son, \$1; to Bowditch & Sons, \$1; to Galvin & Hogan, \$2; to H. S. Mansfield, \$1.

LARGE BOUQUETS.—To Hovey & Co., \$6; to Breck & Co., \$3.

DECORATIONS.—To Miss E. M. Harris, for frames of flowers, \$3; to J. W. Foster, for stand bouquets, \$2; to Mrs. I. Lombard, cornucopia, \$10; to E. S. Rand, Jr., for blue lily of Egypt, \$10; to Miss A. C. Kenrick, for design, \$2.

POT PLANTS.—To Hovey & Co., \$5; to A. Bowditch & Son, \$1; to E. S. Rand, Jr., \$3.

SPECIMEN PLANTS.—To J. Breck & Son, for *Cissus*, \$2.

CUT FLOWERS.—To Hovey & Co., \$4; to Bowditch & Son, \$5; to J. Murray, \$3; to J. Nugent, \$2; to R. Sykes, T. Smallwood, T. W. Walker, E. Stone, G. G. Hubbard, and E. A. Story, \$1 each.

FRUIT:—From the President of the Society, 110 varieties of pears, including several new kinds, among which were *Beurré Clairgeau*, *Gustave Burgoyne*, *Pie IX*, *Merriam*, *B. Sterckman*, *Vessouziere*, &c.; also several seedlings.

From Hovey & Co., 235 varieties of pears, including *B. Bachelier*, *B. Clairgeau*, *B. Sterckman*, *Fondante du Comice*, *Gerando*, *Sheldon*, *Beurré Langelier*, *King*, *Oswego Beurré*, *Oswego Incomparable*, *Gustave Burgoyne*, *Beurré Superfin*, *Adams*, *Belle Julie*, *Abbott*, &c. &c.; also, 15 var. peaches, and *Rebecca* and *Concord* grapes.

From M. P. Wilder, 130 varieties of pears, among them *Beurré Benoits*, *B. Superfin*, *B. Sterckman*, *Lodge*, *Nouveau Poiteau*, *Adams*, *Sheldon*, *Pie IX*, *Abbott*, *Dallas*, *Styer*, *Conseilleur Ranwez*, &c.

From S. Walker, 90 varieties pears, including Merriam, Jersey Gratioli, Doyenne Sterckman, &c. From R. Manning, 80 var. of pears. From T. W. Walker, 22 var of pears.

From H. Vandine, 70 varieties of pears and 30 varieties of plums; among the latter fine specimens of Jefferson, Columbia, Lucombe's Nonsuch, Green Gage, Bingham, Coe's Golden Drop, &c.

Very fine collections also came from the following contributors:—J. Stickney, 30 varieties pears. A. D. Williams, 35 var. of pears and 20 var. of apples. G. Southack, 20 var. of pears. A. Bowditch & Son, 40 var. of pears. R. W. Ames, 40 var. of pears. W. R. Austin, 25 var. of pears. J. Gordon, 35 var. of pears. Evers & Co., 30 var. of pears and 20 var. of apples. Dr. J. A. Stetson, 22 var. of pears and 11 var. of apples. W. Bacon, 12 var. of pears. S. Downer, 15 var. of pears. A. Low, 15 var. of pears and 3 var. of peaches. S. Sweetser, 7 var. pears. Galvin & Hogan, 30 var. pears. Lake & Co., 43 var. of apples, and wild grapes. N. Stetson, 4 var. of peaches. A. Parker, 4 var. of pears. P. R. L. Stone, 3 var. of pears and 4 var. peaches. C. E. Grant, 4 var. grapes and a superb design hung with some of the best Hamburg grapes in the hall. From J. B. Moore, 12 var. of apples. From Thaddeus Clapp, 30 var. of apples and 10 of peaches. From W. W. Wheildon, 3 var. of pears and 16 var. of apples. J. Eustis, 20 var. of apples. Numerous other smaller collections of various fruits filled the tables.

The display of grapes was excellent. From Mrs. F. B. Durfee, 8 var., superb specimens, large clusters and large berries and the black kinds finely colored. From H. S. Mansfield, Millville, a collection of 12 var., all well grown and finely colored. From C. S. Holbrook, 12 var. of grapes, excellent. From E. S. Rand, Jr., 8 var. of grapes. From C. Minot, Somerville, 6 var. of grapes. From J. Breck & Son, 8 var. of grapes. From M. H. Simpson, fine Black Hamburg and Syrian grapes. From S. Austin, 6 var. grapes. From E. W. Bull, beautifully ripened specimens of the Concord grape. From Dr. C. W. Grant, Newburgh, N. Y., Delaware, Union, and Logan grapes, the former very handsome. From Geo. W. Campbell, Delaware, O., very fine Delaware grapes. From W. Brocksbanks, Hudson, N. Y., Rebecca grapes. Isabella Grapes, though not ripe, were sent by several contributors.

PREMIUMS AND GRATUITIES FOR FRUITS.

APPLES.—For the best 30 varieties, to Thaddeus Clapp, the Lyman plate, \$20.

For the best 20 varieties, to J. Eustis, \$15.

For the best 10 varieties, to J. A. Stetson, \$10.

For the second best, to J. B. Moore, \$8.

For the third best, to J. Gordon, \$6.

For the fourth best, to Evers & Co., \$4.

For the best five varieties of 12 specimens, to B. Harrington, \$8.

For the best dish of apples, 12 specimens, to N. H. White for Hubbardston Nonsuch, \$5.

For the second best, to Seth W. Fowle, for Alexander, \$4.

- For the third best, to J. A. Stetson, for Fallwater, \$3.
 For the fourth best, to Evers & Co., for Hubbardston, \$2.
- PEARS.**—For the best 30 varieties, to M. P. Wilder, the Lyman plate, \$20.
 For the second best, to J. Gordon, \$15.
 For the third best, to Hovey & Co., \$12.
 For the best 20 varieties, to R. W. Ames, \$15.
 For the second best, to J. Stickney, \$12.
 For the third best, to A. D. Williams, \$8.
 For the best 10 varieties, to W. R. Austin, \$10.
 For the second best, to Wm. Bacon, \$8.
 For the third best, to Ariel Low, \$6.
 For the fourth best, to S. Downer, \$4.
 For the best single dish, to J. Eaton, for Flemish Beauty, \$5.
 For the second best, to Ariel Low, for Belle Lucrative, \$4.
 For the third best, to Wm. Bacon, for Andrews, \$3.
 For the fourth best, to J. A. Stetson, for Beurré d'Anjou, \$2.
- GRAPES.**—For the best five varieties, to Mrs. F. B. Durfee, \$10.
 For the second best, to C. S. Holbrook, \$8.
 For the third best, to C. Minot, \$6.
 For the fourth best, to S. Austin, \$4.
 For the best two varieties, to C. E. Grant, \$5.
 For the second best, to C. T. James, Providence, \$4.
 For the largest and best collection, to H. S. Mansfield, Millville, \$10.
 For the third best, to E. S. Rand, Jr., \$6.
 For the fourth best, to Breck & Son, \$4.
 For the best specimens of native grapes, to E. W. Bull, for Concord, \$5.
 For the second best, to G. B. Cutter, for Isabella, \$4.
 For the third best, to Newell Harding, for Isabella, \$3.
 For the fourth best, to Thomas Waterman, for Diana, \$2.
- PEACHES.**—For the largest and best collection, to Hovey & Co., \$5.
 For the second best, to Thaddeus Clapp, \$4.
 For the third best, to Stone & Son of Newton, \$3.
 For the fourth best, to F. Dana, \$2.
 For the best single dish of peaches, to Nahum Stetson, \$3.
 For the second best, to Wm. H. Ryder, \$2.
 For the third best, to W. A. Crafts, \$1.
- PLUMS.**—For the largest and best collection, to Henry Vandine, \$5.
- ASSORTED FRUIT.**—For the best basket of fruit of various kinds, to C. S. Grant, \$10.
 For the second best, to James Murray, \$8.
 For the third best, to M. P. Wilder, \$6.
 For the fourth best, to Spooner & Curtis, \$5.
 For the fifth best, to Jonathan French, \$4.
 For the sixth best, to Wm. A. Crafts, \$3.

GRATUITIES.

- APPLES.**—To Lake & Co. for collection, \$10; to A. D. Williams, do., \$6; to J. Stone & Son, do., \$6; to W. W. Wheildon, do., \$6; to J.

W. Coolidge, do., \$5; to J. Gilbert, Jr., do., \$3; to Wm. Baker, for two dishes orange pippins, \$1; to M. H. Simpson, dishes of pippins, \$1; to C. Copeland, for a collection \$3; to H. Harrington, dish, \$1; to George Newhall, collection, \$2; to W. H. Spooner and C. F. Curtis, dish of Baldwins, \$1; to James Munroe, dishes, \$2; to J. A. Kenrick, \$2; to Mrs. J. Lovett, 2d, \$3; to J. W. Foster the Horticulturist for one year; to Nathan White, do.; to Mrs. J. Lovett, \$3.

For extra specimens, single dishes, one dollar each to B. Harrington, for the Queen of the Orchard; Hovey & Co., for Porter; J. Gordon, for Grand Sachem; J. B. Moore, for Hubbardston; T. Clapp, for Gravenstein; J. Gilbert, Jr. for a 20 oz. Pippin; Evers & Co. for Gloria mundi, and E. Stone for Polish.

PEARS.—For collections, \$10 each to J. S. Cabot, Sam'l Walker and R. Manning; \$8 to H. Vandine; \$5 to J. A. Stetson; \$4 each to Augustus Parker, George Southac, W. A. Crafts, and F. Dana.

For single dishes of great excellence, \$2 to A. J. Dean for Easter Beurré, J. Saville for Duchess, S. Penniman for Flemish Beauty, and J. Munro for Bartlett; to Geo. Southack, \$4; the Horticulturist to G. Newhall, James Kelly, J. W. Foster, H. Bradlee, J. A. Kenrick, J. Lovett, C. D. Swain, Mrs. J. Mason, G. Southack, J. Mason, F. Dana; Hovey's Magazine to Nath'l White, J. Murray, P. R. L. Stone, W. C. Allen, H. B. Ward, S. Sweetser, Mrs. C. Valentine, W. H. Moore, Samuel Lane; Country Gentleman to W. A. Austin; \$3 in publications to Evers & Co., A. Bowditch & Son, Galvin & Hogan, J. S. Rising, W. H. Palmer, H. Brooks, Jacob Eaton, Harvey Davis; \$4 in publications to Spooner & Curtis.

PEACHES.—To Mrs. R. S. Bailey, bronze medal; Wm. Brigham, \$1; N. Stetson for collection, medal; Breck & Son, \$2; A. Lowe, medal; also medals to E. S. Rand, W. Bacon and C. B. Swain for collections; to John Gardner, Dedham, bronze medal.

NATIVE GRAPES.—To C. W. Grant, silver medal for fine specimens Union Village; to Wm. Brooksbank, silver medal for fine specimens Rebecca; to George W. Campbell, Delaware, Ohio, silver medal for fine specimens Delaware; to M. H. Simpson, Saxonville, for two varieties foreign grapes, \$3.

PLUMS.—To T. Hastings, \$3, and medals to M. H. Simpson and A. D. Withington.

ASSORTED FRUIT.—To Stone & Son, \$2; Galvin & Hogan, \$2; B. Harrington, \$1.

VEGETABLES.—The show of vegetables was excellent, and contained a greater number of kinds than was ever before exhibited. Among them we noticed peanuts, new Strawberry tomatoes, Chufas or Earth almonds, Chinese potato, &c. Many specimens of the Chinese Sugar cane were shown. A great variety of tomatoes, and a very large variety of potatoes; the latter came from J. Hyde & Son. We have no room to enumerate the contributors, but give the list of premiums, which will indicate the largest and best collections:—

PREMIUMS AND GRATUITIES FOR VEGETABLES.

BEST DISPLAY.—For the best display and greatest variety, to J. F. C. Hyde, Newton, \$15.

For the second best, to J. Stone & Son, \$10.

For the third best, to J. B. Moore, \$8.

For the fourth best, to G. R. Sampson, \$6.

For the fifth best, to J. P. and F. Rand, \$4.

CAULIFLOWER.—For the best display, to J. P. & F. Rand, \$4.

For the second best, to G. R. Sampson, \$3.

CABBAGES.—For the best Drumheads, to S. A. Merrill, \$4.

For the second best, to J. Stickney, \$3.

For the third best, to J. Stone & Son, \$1.

MUSK MELONS.—For the best, to J. Gordon, \$3.

For the second best, to F. Marsh, \$2.

For the third best, to J. Stickney, \$1.

WATER MELONS.—For the best, to F. Winship, \$3.

For the second best, to J. Gordon, \$2.

For the third best, to J. Stickney, \$1.

MAMMOTH SQUASHES.—For the best and largest, (117 lbs.) to S. A. Merrill, silver medal.

For the second best, to E. T. Farrington, \$3.

PUMPKINS.—For the largest and best, to J. B. Moore, silver medal.

For the second best, to J. Stone & Son, \$3.

GRATUITIES.

For collections, \$4 each to R. D. Williams and G. G. Hubbard; \$3 each to Hovey & Co. and J. Stickney; \$1 each to J. Stone & Son, E. M. Richards, John De Wolfe and F. Smallwood.

For collection of Burr's Sweet Corn, silver medal to A. Bowditch & Son; \$3 each to B. Harrington and F. Winship.

For "Irishman Cucumber," \$3 to Nahum Stetson.

For Vegetable Eggs, \$1 each to E. Sanborn and F. Bacon; \$3 to John Gordon for collection.

For Snake Cucumber and Kale, \$2 to E. A. Story.

For Onions, \$1 each to S. Salisbury, S. Sweetser and A. Pierce; to Eben Simonds for Potatoes; to Wm. Courtis for Brussels Melon; to J. Mason and T. W. Walker, the latter for large Purple Egg plants.

For the Chinese Sugar Cane, a copy of the Horticulturist for one year to A. Bowditch & Son; \$1 each to J. C. Flint, T. W. Walker, and N. Carey.

For Millet, \$2 to J. Breck & Son for the best collection.

For Squashes, copies of the Country Gentleman, the Horticulturist and Hovey's Magazine, severally to H. Havland, A. Pierce, W. A. Crafts, Wm. J. Baker and F. Houghton for Mammoth, and to Wm. F. Ellenwood for collection of vegetables; also Hovey's Magazine to J. J. H. Gregory of Marblehead for squashes; H. Harris for beets; the Publications (value \$4) to J. Murray, for collection; the Country Gentleman to A. Bowditch & Son, for do.; and the Horticulturist to A. W. Copenhagen and F. Marsh for collection.

Horticultural Operations

FOR OCTOBER.

FRUIT DEPARTMENT.

September has been a pleasant and favorable month, for the most part dry and warm, with but one slight frost which did but little damage, except in low and moist places. Trees which have made a rapid growth from the moist summer, are ripening their wood well, and fruits which were very backward in the early part of the month have come forward rapidly and now have attained nearly a full growth. Another week of the same weather will carry everything beyond injury from frost.

GRAPE VINES in the forcing-houses will now have pushed several inches, and as cooler weather approaches will require particular attention, as it is the most critical season of their management. Keep the shoots tied in, and maintain a moist and even temperature. Protect the roots from cold easterly rains. Vines in greenhouses may be partially pruned, and in cold houses all the unripe and superfluous wood may be taken away: air freely, night and day, in fine weather, for upon well ripened wood depends much of the excellence of the crop. Out-door grapes may be transplanted this month.

STRAWBERRY BEDS will yet need considerable attention; unless carefully looked after, the weeds will soon choke the plants and take possession of the beds. Do not let a weed appear, and clip all superfluous runners.

PEAR, APPLE and other fruit trees may be transplanted this month.

CURRENTS, RASPBERRIES, &c., may be safely removed at this season.

FRUIT should now be gathered. None but a few of the latest kinds gain anything by hanging after the middle of the month.

INSECTS should not be forgotten. The black knots on plum trees should all be cut out clean at this time. Canker worms sometimes begin to run the last of this month.

FLOWER DEPARTMENT.

Owing to the favorable weather, the various bedding and greenhouse plants have been allowed to remain out longer than usual. It will not be safe, however, to leave them out much longer, for, after October 1, frost often comes without any timely warning, and many are seriously injured for the winter. Even if frost holds off, the chilly nights and autumn rains are not beneficial. Frames should be put in requisition for all the smaller things, that the houses may not be too crowded at first. Soils for potting should be housed at once, if not already done.

CAMELLIAS should be neatly arranged in the coolest part of the house; if partially shaded they will do just as well. Do not let them suffer for want of water, although they should not be kept too wet. Syringe in fine weather.

AZALEAS will need less water as the weather becomes cooler. Place them in a cool situation.

PELARGONIUMS, potted off last month and now well rooted, should be placed on a dry, airy shelf near the glass. Old plants, wanted for early blooming, should be shifted next month.

CHRYSANTHEMUMS will now show their flower buds, and they should be removed to the house before severe frost as it injures the buds. Water occasionally with liquid manure.

CINERARIAS should be shifted if they require it, and have good protection in frames until the weather is cold.

FUCHSIAS may be set away in a cool dry place under the stage, where they will keep well till spring.

IXIAS AND SPARAXIS may be potted now.

HYACINTHS and other bulbs for early blooming in pots, may be potted this month.

CALLAS should now be repotted.

ROSES for winter blooming should be kept in frames until next month.

PETUNIAS, VERBENAS, &c., propagated last month, should be potted off.

CYCLAMENS may be repotted now, and removed to the house.

CUTTINGS may yet be put in, if there is not a stock already potted off.

GLOXINIAS AND ACHIMENES, done blooming, may be placed away under the stage, away from moisture.

NEAPOLITAN VIOLETS should be potted now for winter blooming.

VERBENAS for winter blooming should have a good warm situation near the glass.

FRAMES should be put in readiness to receive the stock of small plants, that the houses may not be too crowded before everything is arranged.

FLOWER GARDEN AND SHRUBBERY.

The recent warm and beautiful weather has given a fresh start to the weeds, and considerable attention will be required to have all in the best order. Continue to mow the lawn, trim grass edgings, and clean and roll walks. A little care will keep everything in excellent order up to the last of November. This month is the time to make plantations if they are needed in the shrubbery, or around the lawn. Evergreens or deciduous trees will get well established before winter. Trench vacant ground, and prepare it for planting next month.

TREES AND SHRUBS of all kinds may be planted as soon as the leaves fall.

PEONIES may be transplanted now.

LILIES of all kinds may be planted this month.

HYACINTHS, TULIPS, &c., may be planted out.

DAHLIAS should be taken up after the roots have ripened well.

GLADIOLUS, TIGER FLOWERS, &c., should be taken up before hard frosts.

CARNATIONS AND PICOTEES should be placed in frames, where they can have a slight protection in winter.

DAISIES should be planted out in frames.

HERBACEOUS PLANTS of all kinds may be safely removed this month.

PANSIES, set out now and slightly protected, bloom freely next spring.

MADEIRA VINES should be taken up before severe frosts.

GATHER SEEDS of choice and rare flowers or plants.

THE DIOSCOREA AND CHINESE SUGAR CANE.

IF we have not more frequently alluded to these new and seemingly important articles of recent introduction from China, it is not because we do not appreciate their value, but because we deem them as coming more under the head of our Agricultural than Horticultural products, and therefore less interesting to the majority of our readers than subjects which have occupied our attention. The sugar cane must certainly be considered, if the experiments in course of trial succeed, a new addition to our agricultural staples, scarcely coming within the province of the amateur or gardener, who will rarely attempt to produce his own molasses or sugar, however so inviting the results. The Dioscorea, however, is both an agricultural and garden product, and perhaps more of the latter than the former; for the experiments thus far made do not appear to give it a rank with the potato, which it was thought by some it would displace, when its culture was understood and its excellence appreciated. Whatever the final result of the experiments in its growth may be, we doubt not it will prove a valuable acquisition to the kitchen garden, become one of its annual products, and form one of the delicacies of the table, rather than a staple commodity of the farm.

We have in our last volume (XXII. p. 173) given a full account of the introduction of the dioscorea or yam. Since then, its culture has extended, and finer samples than any at that time seen have been raised by various cultivators. Messrs. Wm. R. Prince & Co., of Flushing, L. I., have taken a deep interest in its cultivation, and have very large quantities of it growing, firmly believing as they do that it must become a most delicious substitute for the potato, and its introduction prove one of the greatest blessings conferred upon the people of this country.

Another year's experience in its culture has given us a higher estimate of its value, and it is probable, as we learn

how to produce it in greater perfection, it will continue to improve in the estimation of all who undertake to raise it. There appears to be little or no doubt of the superior excellence of the yam among all who have had a good opportunity to test it; the only doubt seems to be in regard to its profitable culture—whether it can be raised in anything like the ease and certainty of the potato, and yield as average a crop as that vegetable. In this respect more experiments are wanting to arrive at a satisfactory result, and for the present this must remain an open question. If its excellence as a nutritious esculent is fully established, time will settle the question of its profitable culture upon an extensive scale.

The present year several large and very fine specimens have been produced, weighing from one to two and a half pounds each, a more gratifying result than many doubting persons anticipated. At the United States Agricultural Show at Philadelphia, last year, some very fine specimens were contributed by Messrs. Prince; and this year, at the Fair of the American Institute, N. Y., just closed, the same persons presented tubers of similar quality. At the former show the yams underwent the trial of a committee of gentlemen in regard to their excellence for the table, and the report of that committee was unanimously, we believe, in favor of the dioscorea, as a most delicious and nutritious vegetable, every way worthy the attention it had received from the distinguished professors and agriculturists who took so deep an interest in its introduction to France.

Our own specimens this year have been very much superior to those of previous years, though without any very particular cultivation. The tubers were planted in the open ground as soon as the weather would allow, and without any preparation of the soil, in a level bed. The earth was not ridged up as we think it should be. They grew, however, rapidly, the vines covering the ground, and the tubers upon digging weighed from *one to two pounds* each; they were about fifteen inches long, and quite as large for two thirds their length towards the bottom as the sweet potatoes usually sold in our markets. Altogether the experience of

the present year has been highly satisfactory, and we anticipate a far greater result from the introduction of this root than has heretofore been expected.

We have no knowledge of the progress made in its culture in France the present year; it is rather too early to hear of the results of their experiments. Undoubtedly its culture has been made a special object in some of the governmental institutions, and the public will be apprized of their importance. We shall look forward to some account of them in the horticultural journals of the day, and give the results in our pages.

Attempts have been made,—we regret to state,—in some of the agricultural journals, to prejudice the public against the culture of the dioscorea under the specious plea of humbug. If those who have done so had any facts upon which to found such an opinion, it might be pardonable in them; but in advance of all experiments upon its culture—with scarcely any knowledge of what the dioscorea really is—or any information in regard to the success of the French cultivators in its growth,—they have denounced it as unworthy the attention of the intelligent cultivator. Because one or more individuals may have been too sanguine in regard to its merits, or may have sold the small tubers at such a price as to convey the idea of humbug, it does not follow that sensible men should not place some confidence in its importance, especially when backed by such testimony as that of M. Vilmorin, and other eminent French agriculturists. We trust no further attempts will be made to crush out the zeal which intelligent cultivators may entertain in regard to its value, until experience shall show that its cultivation is a failure.

Of the sugar cane or sorgho, there has so much been said and so many experiments tried, that the question of its value for the production of molasses and sugar will probably be effectually set at rest the present season. From the insignificant quantity of a dozen or two papers of seeds first received from France in the fall of 1854, have been planted the present year thousands of pounds, a more rapid increase in the growth of any new plant than has ever been previ-

ously known. It first began to attract very particular attention in 1856, when only a few individuals took any great interest in its culture and the manufacture of molasses. Judge Peters of Atlanta, Ga., had an acre or two of the cane, and with this he tried various experiments in regard to the quantity of molasses which could be made from it, and succeeded in obtaining many gallons of excellent quality. Specimens of this he presented, in the autumn of 1856, at the United States Agricultural Society's exhibition in Philadelphia, where it attracted great attention, and at once established its claims as a sugar producing plant.

Other gentlemen, at the north, where the climate was supposed to be less favorable for the growth of the cane, also tried experiments, but on a smaller scale. Among those who took a deep interest in the subject was Mr. J. F. C. Hyde of Newton, Mass., who has recently published a small and excellent treatise upon it, which we commend to the attention of all who are interested in its culture. In addition to Mr. Hyde's own experiments he has given, in a condensed form, all that was known about the plant up to the time of the publication of his work last spring. What we know of the extent of its culture and the experiments in the manufacture of molasses and sugar, since that period, we learn from the journals and newspapers of the day.

Owing to the cool and moist summer it was feared the cane would not succeed so well as heretofore, and would not arrive at its full growth in season to escape the early frosts; but these expectations have fortunately not been realized. On the contrary, the cane, which was exceedingly backward up to the middle of August, has with the dryer and more favorable autumn come forward very rapidly, and before the first severe frosts was entirely out of danger from injury, with the seeds quite ripe and the stalks just in readiness for cutting, thus proving that even in a cool, moist and unpropitious year, it may be relied upon for a certain crop.

Consequently we hear of its growth in every part of the country, from Maine to Texas; and from the Atlantic coast to the Mississippi river. Throughout the west, large quantities

of land were planted, in some instances only a small patch but in others several acres, so that the aggregate of land sown with the cane must exceed at least a thousand acres. The harvest commenced in the middle of September and from that time up to the middle of October we hear of numerous experiments in the manufacture of molasses, with the details of crushing the cane, the quantity of juice extracted from the stalks, the produce of seed per acre, and the average yield of molasses. These vary much, as was to be expected until we understand the best mode of cultivation and the proper period of gathering the stalks. At the various county and state shows numerous specimens of the molasses or syrup have been exhibited, and in all cases have been pronounced quite equal to the very finest of New Orleans manufacture.

It thus appears to be satisfactorily settled that the sorgho will yield a most excellent quality of syrup; the next thing is, to ascertain whether this can be made into sugar. This has not yet been done very successfully, but that it will be accomplished, in the present state of scientific attainment, there cannot be the least doubt. The French will probably soon give us the results of their experiments, and we shall be very much surprised if they do not manufacture as fine an article as that which they make from the sugar beet. At one of the sugar refineries in St. Louis some very handsome brown sugar has been manufactured.

Of the profits of its culture, until we have accurate statements of the yield per acre, we can hardly decide. The accounts that we have received vary exceedingly, viz., from 200 to 500 gallons of molasses to the acre. Mr. Hyde, who commenced his operations this year in grinding the cane for his neighbors, informs us that he began his first experiments six weeks ago, but he found the period too early, and allowed the cane to ripen. It was then tried again, and yielded a larger quantity and of better quality than before. It therefore appears from his experiments and those of others, that the seed may be saved and the yield of syrup be about the same. This will enhance the value of

the crop, as the seed, if not wanted for planting, is eaten by animals about as eagerly as corn, and will consequently be a source of profit.

But there appears to be another source of profit in the growth of the sorgho; this is the waste, or "begass" as it is termed, which Mr. Hyde has just shown can be made into a strong, neat and excellent brown paper, handsome specimens of which he has shown us manufactured for him at Newton. Thus, not only will the cane yield a crop of molasses, but the seeds which are abundant be a source of profit, and the refuse after the juice is exhausted add to the value of the product.

The culture of the sorgho is so similar to that of Indian corn that we need not enlarge upon this point. It may be grown throughout the entire region of the United States with perfect success, and though the amount of saccharine matter will be greater in the stalks from a warmer region, yet an excellent yield of syrup has been obtained in Maine and Minnesota, showing that it can be profitably grown as far north as Indian corn.

Of its value for fodder as compared with Indian corn more accurate experiments are wanting to show that it will give a greater yield per acre. We are inclined to doubt, from our own experiments, the generally received opinion that it will produce more than corn. Perhaps its greater quantity of nutritive matter may make up for the less bulk of stalks and leaves; that it will afford a good crop there is no doubt, and nothing but a careful comparison, on the same ground and with the same culture, will decide the relative merits of the two.

The quantity of molasses obtained per acre the present year varies, in the accounts we have received, from 175 gallons to 400 gallons. Mr. Hyde has, we think, obtained at the rate of 200 gallons. This, at the current price of good molasses, would not afford a very great profit, though there is the crop of seed and the begass or waste to be taken into the account. If these two latter will pay the expense of extracting the juice and making of it into molasses, suppos-

ing 200 gallons to be the average yield per acre, it would pay better than Indian corn and many other crops.

We have not time to enter into a detail of the various calculations which have been made in regard to the profit to be derived from its culture. We trust, however, that no individual will be deceived so much as to suppose a fortune can be made in a year or two, in growing this crop. Such expectations would ruin the success of the cane. It must only be looked upon as an agricultural product, in connection with other crops, which every farmer may easily raise, and from which he can make all his own molasses, with very little trouble, and thus render himself independent in one more of the staple commodities of life; one which, from various causes, has of late been a matter of speculation with our merchants, and the price run up in consequence to such ruinous rates that we have been forced to find some substitute for the West India cane. It is fortunate the sorgho has been introduced at such a time, otherwise we fear the accounts that have been published would afford very little encouragement to our agriculturists to attempt its growth. And this, followed by a depression of the prices of wheat and corn, which our farmers seem to think the only crops that will pay, will cause them to look more favorably upon the introduction of the sorgho as an article that is destined to become, next to these, one of our most valuable products.

INFLUENCE OF DRAINAGE ON CLIMATE.

BY WILSON FLAGG.

EVERY practical cultivator knows the importance of drainage in improving the value of wet soils; but it is not perhaps generally understood that its influence is equally great in improving the climate. The local effects of drainage, with respect to climate, are immediate, especially in a well protected situation. We will suppose a farming settlement

to be made upon a tract of two or three miles of level ground, forming a valley, surrounded by hills that protect it from the cold winds outside. All this plain is of that description of soil which is termed cold, like all other wet levels. The thermometer, after sunset, except when the earth is frozen, or covered with snow, indicates a temperature ten or twelve degrees lower than that of the surrounding hills. It is so wet that it seems almost incapable of being tilled; but the husbandmen commence a rigid system of drainage, on the most improved and scientific principles. After the lapse of fifty years all the forest on the plain has been cut down, except small portions which have been left for shelter and shade; every acre is thoroughly drained and the whole is reduced to a state of excellent tillage. The water no longer stands upon the surface of the ground, but runs off by subterranean conduits, into a neighboring reservoir. After the completion of these operations, though the climate outside of the hills might have greatly deteriorated, the climate of this valley would be many degrees warmer and more equable than it was before it was drained and cultivated. The same improvement of climate would take place over the whole continent if the same system of operations were universal.

It is still an unsettled dispute among philosophers whether the clearing and improvement of a continent which was covered with forest tends to injure or to ameliorate the climate. That the climate of America has been injured is generally admitted; but the cause of its deterioration is not yet determined. Those who believe that the clearing of the forest produces amelioration appeal to the changes for the better which are supposed to have taken place on the continent of Europe during the last 2000 years. Those who take the opposite side appeal to the changes for the worse which have taken place on the American continent. Both parties may be equally right. The climate of Europe may have been ameliorated and the climate of America may have been injured by the destruction of the forests. It may still be true that the American climate will eventually be im-

proved by more thorough clearing and draining, according to a definite system of operations. And it may be remarked in this place that nature has so wisely arranged her economy as that every operation which promotes the fertility of the soil at the same time increases the salubrity and improves the temperature of the climate.

Of three kinds of surface—one that is covered with wood, a second that is covered with water, and a third consisting of tillage—the first would feel the least of the action of the sun, and the third would feel the most of it. Of the same, however, the former would suffer the least and the third the greatest expense of heat from the action of the cold winds, but the loss of heat would in each case be proportional to the humidity of the superficial soil. Hence in order to secure the most beneficial action of the sun at all seasons, and the least injurious action of the cold winds, those parts of the ground which are the most exposed to the winds should be covered with trees, and the plains and valleys should be made to retain the heat which they have imbibed from the sun, by draining them of all their superfluous moisture. This should be conveyed into its reservoirs either by subterranean passages, or by deep and narrow channels which should expose the least surface to the winds. By such means we retain the heat of the soil by diminishing the evaporation from the surface. When a similar condition of the land has become universal, the climate must be improved both in temperature and salubrity. Though the country would be still exposed in the same degree to the action of the cold winds from regions outside of it, more heat would be generated and retained within its own boundaries, which would greatly modify their severity.

A surface of deep water is more favorable to equability of temperature than a wet surface of ground. The water does not imbibe so much heat from the sun, nor part with it so readily to the winds, as a wet surface of ground, because the heat communicated to the water is soon blended with the whole mass. The heat which is imbibed by the soil is not so readily conveyed downwards but is soon radiated into

the atmosphere ; and this radiation is nearly proportional to its humidity. Hence deep water while unfrozen tends to equability ; to coolness in hot weather and to warmth in cold weather. Shallow water, on the other hand, tends to increase the cold during the cold season, and to aggravate the coldness of the summer nights by excessive radiation. Hence the chill of the atmosphere over wet lands after sunset. The climate would therefore be more highly improved by draining all the superfluous moisture by subterranean passages into a deep pond, than by a multitude of ditches distributed evenly over the surface.

The climate of America has been injured by the operations of the pioneer, because the uplands have been cleared while the lowlands remain either wooded or undrained ; and the climatic influence of wet lands is made worse by depriving them of their wood, if they are left undrained. The radiation from a surface of wet land which is open is much greater than from a similar tract which is a forest. Draining ought, therefore, to follow closely in the wake of clearing, to prevent the injurious effects of the latter upon the climate. Let the uplands, if they are steep, rocky or barren, retain their forests, and let the wet lands be universally cleared, drained and cultivated, and we shall in the end be rewarded with a climate as much better than the present, as the climate of Europe is better than that of America.

But there is another agent concerned in producing those different effects which seem to have been consequent upon the removal of the forests in Europe and America. In Europe the greatest clearing has taken place in the southern and middle parts of the continent, in America it has chiefly taken place in the northern and middle parts. In Europe, therefore, more freedom has been given to the current of winds as they return from the equator to the north pole ; in America, on the other hand, the north winds have obtained a more uninterrupted passage as they return from the north pole to the equator. A vast quantity of forest still remains in the northern parts of Europe serving to modify the severity of the winds that issue from the frozen regions.

All those operations, as I have already remarked, that serve to ameliorate the temperature of a climate, tend also to improve its salubrity. A new country is always subject to those epidemics that proceed from the exhalations of the marshes immediately after they have been stripped of their wood. Europe is not subject in the same degree to those intermittent fevers which are so prevalent in the western continent. Agriculture has carried its ameliorating operations throughout a greater extent of the European continent and, compared with America, it has left there but few undrained bogs and morasses. The amelioration of the American climate will be produced only by a universal system of drainage, accompanied with such an arrangement of forests as will afford the best local protection. He who has cleared of wood and judiciously and thoroughly drained an acre of wet land, is a benefactor to the country, and though he has accomplished nothing more, he has not lived in vain. He will leave the world better than he found it, and health and plenty will smile upon his humble labor.

Under certain circumstances, instead of draining a morass, it would be better to transform it into a lake, or it may be drained by the formation of a lake in the centre of it. It may be transformed into a lake when it lies so low that it cannot be drained, but admits of the passage of the water of the contiguous wet lands into it. After this overflow it would not produce any bad influence upon the temperature of the local climate. "A piece of land entirely covered with water is never unwholesome. It becomes so only when the water that covers it evaporates and exposes to the air the mud of its bottom and sides. The putridity of a morass might as effectually be remedied by transferring it into a lake as into dry ground; and which of these two objects is to be preferred must be determined by its situation." It is not my object to point out the best methods of draining, which is a subject that has for many years commanded the attention of agriculturists. I am simply aiming to prove that the draining of marshy lauds is as beneficial to the health of the community as to the interests of agriculture;

and that the same causes that render a cold climate warmer render it both more healthy and more productive; not because a climate is necessarily made more healthy when it is warmer, but because the draining of wet lands, which contributes to one effect, contributes also to the other.

If it be necessary to drain a morass by making a pond in the centre of it, the best plan of operations would be to commence at the central point to excavate, carrying all the soil that is taken out to the extreme outward boundary; approaching inwards with the material taken from the hollow and advancing outwards with the hollow until the two meet. A lake is then constructed which might be stored with fishes and surrounded with a good depth of arable soil. The depth of this water should be sufficient to secure it from evaporation in a dry season. This plan is expedient only in bogs which are very wet and do not consist entirely of peat, and which are below the general level of the surrounding country.

Thus far I have treated of the ameliorating and the deteriorating influence of clearing a new country of wood, and have shown that each of these effects may be produced by two different ways of clearing. The pioneer is obliged to clear the uplands and leave the bogs covered with wood: deterioration follows. This is the point at which we have now arrived in this country. If the climate of Europe has been ameliorated by the removal of the vast forests which overspread that continent in the days of Julius Cæsar, it is because the Europeans have passed beyond the point at which we have arrived. They have drained their bogs and converted them into a warm and arable soil. This has not yet been done in America.

PEAR CULTURE IN BELGIUM.

BY M. J. DE JONGHE, IN THE GARDENERS' CHRONICLE.

WE have in our previous volumes copied several articles by M. De Jonghe, on the history and progress of the pear

culture in Belgium. That they have been read with much interest we cannot doubt, as everything relating to the growth of so valuable a fruit is important and interesting. That M. De Jonghe is a careful observer of fruits his articles can leave no doubt, and though we may disagree with some of the ideas which he has advanced—as we have in regard to thinning the fruit spurs—we still find much to commend to the attention of all cultivators, and to bespeak a careful perusal of his articles. He appears to be the only writer among the numerous amateur and professional growers of Belgium who has attempted to give, in a shape accessible to the cultivators of England and America, the full details of pear culture, with the origin and history of the more important novelties that have been sent out from Belgium the last ten years. The *Album de Pomologie* of Bivort and the *Annales de Pomologie* of the Belgian Commission, as M. De Jonghe says, are both erroneous and defective. The new work of M. Decaisne is still worse. To us it appears a retrograde movement in pomological progress. The latter, especially in his descriptions, shows a want of that knowledge which, as M. De Jonghe truly says, “to be of practical utility, must be made not from books, but from specimen trees in bearing.” What the cultivator needs is something more than a technical description; he wants, in addition, an account of the habit of the tree—its adaptation to the pear or the quince—its hardiness—whether most suitable for a dry or damp locality, and its tendency to diseases, &c. It is now well known that many pears require a more sheltered situation and a warmer soil than others, and it is only when the new sorts have been carefully studied under various conditions of culture that these can be well ascertained and their real merits made known. It is the detail of all these which M. De Jonghe gives us in his papers, that gives them their practical value.

The general culture of the pear is very well understood. What we want now is the particular treatment which particular sorts require. For instance, the famous *White Doyenné*, once the cynosure—and still so when well grown—of all

eyes among pears, succeeds perfectly in cities ; why it does so, is what we would learn, that we may produce it in equal beauty in other places. The Beurré Diel always cracks in a light dry soil—and sometimes in a richer one—while in many places it is always grown perfect and to an immense size ; now the conditions necessary to produce this noble pear with certainty are what we would arrive at. The Easter Beurré, Chaumontelle, Brown Beurré, and other of our old but yet unsurpassed pears, will succeed in many places—for they are not yet worn out—and we would learn why they will not in others. The Dix cracks with some cultivators, while with others it is always perfect. In some localities many pears are very much russeted, and coarse in the skin, while in others they are quite smooth and have a brilliant crimson cheek. The cause of all these variations is what we now seek, and what an enlightened system of cultivation must solve. M. De Jonghe has begun this ; let our own amateurs imitate his example and add to the stock of valuable and reliable information.—ED.

Every observer must have remarked that fruit trees, without exception, presented at the beginning of March the most promising appearance. The temperature of the external air was favorable to the development of flower buds and to their maturation. From the end of March, the time when the flowering of certain kinds of plums, apricots, pears and cherries commenced, until the blossoming was over, there prevailed during April and May strong east and northeast winds which caused serious fears to be entertained of the fruit not setting. Throughout this period, in consequence of these winds, neither flies nor bees could be seen among the expanded flowers, and fertilization must therefore have been effected without the assistance of these agents. The seed of 1857 will therefore be possessed of a peculiar property, which will make the present year an epoch in raising seedlings from varieties which have been frequently renewed. We may once more state, that these varieties, though fecundated by their own pollen, have a tendency to

vary when propagated by seed, and that seeds from the same flower, without having been artificially fertilized or accidentally so by bees and flies, may produce different varieties. This opinion was put forth by Van Mons, and I believe that it can be sustained by experiments which I have made in sowing the seeds of certain sorts of strawberries and cherries, the results of which will be fully detailed on another occasion.

But to return to our subject. Notwithstanding a temperature which varied from 27° to 68° , 84° , and even 88° , Fahrenheit, several hardy and well acclimatised varieties of fruit trees set a large quantity of fruit, and there still remains as much as they can bring to perfection. It is always in a situation having a western aspect, a soil enriched with suitable manure, and which is light, deep, and somewhat moist, that the best results as regards bearing are obtained with the pear, the apple, plum and cherry. In strong, cold, wet soils we find, on the contrary, a less quantity of fruit on the trees, and sometimes none at all. A scientific mode of pruning and training adapted to the mode of vegetation and bearing peculiar to the variety, as well as a careful extermination of all kinds of insects, are conditions necessary for ensuring success.

In our climate there is certainly no fruit tree comparable in productiveness to the apricot, when raised from the stone of a variety which has been frequently removed and acclimatised. When these seedlings are raised according to the directions given in a previous article, superb trees of every habit of growth and of incredible fertility and hardiness are the result. One of our oldest seedlings has borne for the last six years. The first year of bearing there were some clusters of two, three, and four fruits; in the second three times as many, and so on till the present season, when there are not less than 2000. Another seedling with large fruit, although not so old, has at this time 400 or 500 at least, and several others only from six to nine years old are bearing equally well. To prove the productiveness of the first two trees, I send two branches with the fruit upon them. [These

are marvellous examples of productiveness, literally loaded with fruit. We never saw the like in our English gardens. The sorts should be introduced immediately, although the fruit is small.—ED.] These results, obtained in the last six years, appear to me conclusive. In short, it is to be hoped that for the next quarter of a century we shall not have such climatic variations in spring as those we have experienced since 1852.

Of all fruit trees the pear tree is that which has most occupied attention for the last century. Some of the varieties are due to chance; the greater number to some amateurs, all of whom appear to have had in view the acclimatation of the pear so as to make it produce in the open ground fruits as delicious as those previously obtained on a wall. These amateurs, not being actuated by a desire of gain, distributed scions gratuitously to their friends and correspondents. Thus, with the exception of a limited number described by Van Mons in the "Annales des Sciences," and in the "Revue des Revues," the whole of these fruits were brought into cultivation without sufficient information respecting them having been afforded to the cultivator. The short notices which accompany the drawings in the "Album de Pomologie," and "Annales de Pomologie," are not perfect; some are erroneous, others defective. Even M. Decaisne's work, which has the advantage of appearing after all that has been said and written for the last fifty years and more, will be of no utility as a guide to the cultivator. To be of practical utility in the present age pomological descriptions must be made, not from books, but from specimen trees in bearing. It is necessary to be able to study varieties of fruit trees with the actual tree in bearing before our eyes. Trees worked on the pear stock, and trained as a high, low, or half standard, according to the constitution and mode of growth of the tree, should be employed as models. These should be studied in different soils for a series of years. On another occasion we fixed the period for this at fifteen years. For certain productive varieties this term is sufficient, for others it is not long enough, as will hereafter be seen.

Previous to entering into details respecting the fructification of the pear tree last spring, we must observe that the hardiness of a variety of the pear in setting its fruit is independent of its vigor. Last spring we proved that under the influence of a dry, cold temperature, several extremely vigorous sorts did not set their fruit so freely as others that are considered less vigorous. Of the latter, we may cite three examples, viz., the Easter Beurré, Flemish Beauty, and Ne plus Meuris. I cultivate three trees of the Easter Beurré for comparison. One of them is worked on the quince stock trained as a quenouille, and planted in a light moist soil, improved by the addition of manure. The tree has been budded ten years; it has set 300 fruits without any shelter, and after the requisite thinning has been performed there now remain fifty large, well formed pears.

The second tree is a tall standard on the pear stock, grafted eight years ago; it has fifteen fruits upon it, and is planted in a cold moist soil, which is also heavier than in the preceding case. The third is a miserable pyramid, thirteen or fourteen years old, bearing a score of pears. It is planted in a shallow strong clay. This variety appears in my soil to be healthier on the quince stock; still it is not perfectly so; the stem and branches suffer from dry cankers, and the bark scales off from the spurs. In several old gardens in Brussels there are trees of this variety half a century old, which, notwithstanding their infirmities, produce excellent fruit in a light, deep, warm soil, and sheltered situation. They set fruit every year. What most prevents their bearing is not the spring frosts, but the multitudes of insects which attack the fruit as soon as it is set.

It is now generally known that the Easter Beurré, when worked either on the pear or quince stock, produces the best and handsomest fruit as a half standard against a wall with a southeast or southwest aspect.

Ne plus Meuris forms a healthy and vigorous tree, which sets its fruit better and sooner on the quince than on the pear stock. To produce perfect fruit it must have a west wall. On the quince stock and without this protection the

tree assumes the quenouille form ; on the pear stock, when planted with a soil rich with humus, it requires to be grown as a half-standard, which becomes productive in ten or twelve years. A quenouille on the quince stock only seven years old has set twenty-five fruits.

The Flemish Beauty, cultivated as a half-standard on the pear stock, and planted in a light soil, forms a fine head with spreading branches, and bears in ten years a delicious and finely formed fruit. As a quenouille on the quince stock this variety is very productive. It also bears handsome and excellent fruit against a wall. A fine pyramid on the pear stock, fifteen years old, has set upwards of 200 fruits, of which seventy or eighty remain.

Of the other varieties of the present century and end of the last one, the following are those which have set their fruit the most freely in the open ground, and which, after having undergone the various changes and severities of the weather, have retained the most :—

1. **BEURRE' DIEL**, on the pear stock, grafted twenty-five years, planted twelve years ago, in a light, rather free, alluvial soil, with a compact moist subsoil at the depth of five feet below the surface, trained as a pyramidal half standard, thirty-five feet high. It bears 400 fruits, but has only produced half that quantity for ten years. This proves that the tap roots have penetrated beyond the bed of alluvial soil. It is a magnificent tree and its branches cover a space of fifteen feet in diameter. This variety succeeds very well on the quince stock, upon which, after having been budded four or five years, it is very productive. Upon the pear and quince stock the fruit is only second-rate ; but when planted in a moist soil, rich in humus, against the gable end of a house with a western aspect, it acquires a larger size and better quality. We have observed this variety succeed, even in the present year, in more than a hundred places when worked on the pear stock and planted in a light, deep, moist soil ; in a strong soil with a gravelly subsoil ; or even in calcareous, marly, and clayey ground. The original tree still exists in the garden of **Trois Tours**, be-

tween Brussels and Mechlin, and to all appearance is seventy or eighty years old. Trees fifty years old or thereabouts, are to be found in most gardens throughout Belgium, but more particularly at Brussels. At the present day this variety is no longer propagated or planted in gardens of recent formation, as it has been eclipsed by others equally vigorous and hardy, but more productive and yielding fruit of better quality.

2. URBANISTE.—Three trees, one a half standard on the pear stock, grafted fifteen years; another on the pear stock, budded seven years; the third a tall standard on the pear stock, grafted four years. They all bear as many fruits as they formed clusters of flowers at the extremities of the twigs. It is chiefly upon these that this variety bears its fruit, and they must, by pinching, breaking and pruning, be kept as much as possible towards the interior of the tree. The variety succeeds well on the pear stock, in a light moist deep soil, and it does not dislike a gravelly subsoil. It requires to be grown as a half standard, and as such attains a large size. After having borne fruit for a few years it has the appearance of a Weeping willow, as the boughs, even of this variety, are borne down by the weight of the fruit. The seedling tree of the Urbaniste first fruited in the garden of the Count Coloma at Mechlin, in 1786. The original tree exists there now, and has the appearance of being at least eighty years old. The excellent quality of the fruit and the beauty of the tree having been fully appreciated towards the end of the last century, the variety was soon planted in every garden. Near our nursery at St. Giles there is in an old garden one of the finest specimens of a pendulous Urbaniste that is anywhere to be found. It is at least fifty years old, and its branches extend over a space of sixty feet in circumference, with a stem forty feet high. It bears every year from 150 to 300 pears. This variety is perfectly hardy. Its productiveness exclusively depends on the pruning, which consists in removing forked shoots in summer, and shortening the terminal shoot two thirds of its length in spring. The interior of the tree is not touched.

It has been said that this variety is barren, or at best only a poor bearer, but reproach is certainly deserved not by the tree, but by the want of attention and incapacity displayed in its management. The fruit, as large as that of the Flemish Beauty but shorter, has the buttery melting flesh of that pear, but the vinous juice is of a much more aromatic flavor. It usually ripens in November and continues good during December. Twenty years ago a nurseryman at Paris sent out this variety as new under the name of *Beurré Piquery*, although it may be observed that the Pomological Congress held at Lyons in September last believed that the two were distinct. In conclusion, as well for the beauty of the tree, when properly managed, as for the excellence of the fruit, the *Urbaniste* deserves to be propagated and cultivated in gardens.

3. *CONSEILLER DE LA COUR*.—This name was intended to designate M. Theodore Van Mons, a barrister in the Court of Appeals at Brussels. Van Mons considered this variety to be the best of those raised by him, and he therefore named it after his son. It is the most vigorous, hardy and prolific variety that need be desired in our climates. I grow for experiment and examination ten trees upon all kinds of stocks, and in different soils and situations. Everywhere it influences the stock, even the quince, by its vigor. It requires to be grown as a half standard, or still better as a tall standard, and as such it bears fruit after four or five years' growth. Here again success depends upon the particular mode of pruning, which consists in pinching back the secondary laterals in the end of May or beginning of June to five buds, and breaking, in the end of July, at two buds above the fifth one, to which the shoot was first pinched. In the beginning of March the leading shoots are pruned so as to leave seven or eight buds, and ten on the stem leader. Every year at the beginning of July all forkings, over luxuriant shoots, if there are any, in short all useless shoots are removed. By following these instructions a very productive tall standard with a large pyramidal head will be obtained after four or five years' culture. If, on the contrary, the

tree is subjected to inconsiderate mutilation, shoots and burrs producing a crowd of spray will be produced instead of fruit. It was thus we had for twenty years in our garden a magnificent but barren pyramid, which in twelve of those years might have produced abundant crops of excellent fruit. At present a standard grafted seven years bears at least sixty good pears. As is known, the fruit of this variety is nearly as large and quite as handsome as that of the Marie Louise. It is equally melting and buttery, and the vinous juice has a higher flavor than that of the Marie Louise, which ripens a month earlier, and is considered to be one of our best modern sorts. The Conseiller de la Cour, which first bore fruit in the experimental gardens of Louvain thirty years ago, is now generally cultivated in the gardens of amateurs, and pretty generally also the trees are unproductive in consequence of a mutilating system of pruning being pursued. Like the Urbaniste it has been accused of barrenness, but erroneously so, as has just been stated. In our opinion, formed from personal experience, there is no kind of pear that deserves to be planted in gardens so much as this, either on the quince stock as a low or half standard, or on the pear stock as a tall standard, if sufficient space can be afforded. It may be planted as a tall standard on the pear stock in the orchard. If this variety is not sufficiently hardy for the English soil and climate, then the cultivation of the pear tree must be abandoned.

4. COMTE DE FLANDRES.—On another occasion we devoted a special article to this variety, which first fruited at a much later period than the preceding. It is already sufficiently tried and known. During five successive years, notwithstanding the severity of the springs, it has freely set an abundance of fine fruit on a handsome pyramid, not more than twelve or thirteen years old. This year it has at least fifty pears on it.

5. BEURRE' CLAIRGEAU.—I can only reiterate what I have already stated respecting the hardiness and fertility of this variety, both on the pear and on the quince stock. By this time, I think, there ought to be no doubt as to its qualities

in England, even in the minds of the most circumspect amateurs. In my garden I observe more than 100 fine fruits on the original seedling. I remarked that tall standards, grafted two or three years, and trees budded on the quince stock only three or four years have borne fruit in the nurseries.

6. LEOPOLD I.—It is scarcely eleven years since this variety first bore fruit. It was sent out seven years ago, and already we believe that we can establish its principal characters. It engaged our attention by the beauty of the fruit, the elegant form of the tree, and its noble foliage. On the pear stock it forms a handsome dwarf pyramid, resembling a small Italian poplar in miniature. In the fifth year from the bud, on the pear stock, I obtained three fruits from a small pyramid; last year it bore five, and this year seven fruits. On a tall standard on the pear stock, grafted six years, and growing in my town garden, the soil of which is lighter and warmer, I counted a score of fruits. The latter is not readily blown down. As a quenouille on the quince stock this entirely distinct variety produces rounder fruit the third year after budding. Against a wall, either on the quince or pear stock, the fruit is larger and in unfavorable years of much better quality than in the open ground. We have been enabled to make these observations by side grafting old pear trees, on the pear stock, against a wall with a west aspect. Three years ago we stated the result, which has been confirmed in 1855 and 1856. In every respect Leopold I. deserves to be planted in gardens where there is a small amount of space and where it is desirable to have dwarf pyramids and quenouilles. The usual time of ripening is towards the end of December.

A seventh variety which first bore fruit at an earlier period than the two preceding, merits on account of the beauty of its fruit, which does not yield in that respect to the *Beurré Clairgeau*, and on account of its productiveness and its hardiness, special mention. The original tree exists at the village of Tongres, near Alt, Hainault. It belongs to M. Durandean, a bleacher. For this reason the variety has been

called Poire Durandean, or Poire de Tongres. It is very productive on the pear stock, either as a dwarf, half, or tall standard, and still more so on the quince stock as a quenouille, or espalier, without protection. It is a superb fruit of first rate quality, ripening in November. Against a wall with an east or west aspect the fruit comes nearly as large as the Calebasse Bose against a wall, Van Mons Leon le Clerc, or Poire Van Marum of Vans Mons, preserving at the same time a better shape than the last two varieties. This notice is the result of observations made of late years in my own garden, and in those of amateurs who for ten years have cultivated it in every form. In this as in previous years the Poire des Tongres has freely set its fruit in my own garden and those of such of my friends as I have visited. It is in a soil rich with humus or clay marl, with a gravelly subsoil, that the greatest number of fruits and of the finest flavor were produced on the pear stock.

Amongst a large number of other varieties which are distinguished by their handsome growth and the quality of their fruits, ripening in the autumn and winter, we may mention Esperin, Beurré Kennes, Nouveau Poiteau, Eliza d'Heyst, Alexandre Lambre, Duchesse Helène d'Orleans, Dr. Trouseau, Willermot, Sabine, Cullum, Phillippe Gaes, Docteur Capron, Charles Fredrica, Alexandrine Helie, and Beurré Berekmans, all distinct varieties obtained from seed by Van Mons. Emilie Bivort by Simon Bouvier, Emile d'Heyst and Frederic le Clerc by Esperin, will likewise continue to be cultivated. All these varieties possess for the most part the requisite conditions for succeeding in our climate. Passe Colmar, raised by d'Hardenpout a century ago, notwithstanding a few defects, continues on account of the good quality of its fruit to be propagated and planted even as a half standard in the open ground. Every year I gather several fine fruits from a tree planted without shelter, and trained as a half standard. This year I observed as many fruits as the tree can support.

Among the fruits which ripen at a later period of the season than the preceding, the Beurré Rance, a hardy and pro-

ductive variety in the open ground, is also esteemed. In gardens having a light deep soil, rather dry than moist, the fruit, far from attaining the same size as when grown against a wall, is nevertheless of finer qualities. The fifty years old tree which I have in my garden bears every year, whatever way the temperature, provided it is properly cleaned from insects in the winter, at the time the fruit is setting, and in the month of July. Another tree twenty-five years old and worked on the pear stock bears 50 to 100 fruits every year, and the fruit is of a better quality than in the preceding case, which I attribute to the circumstance of its being grafted on a good seedling whilst the other is worked on a root-sucker. This opinion may, it is true, be disputed, but it is based on various circumstances known to old practitioners. In conclusion, this variety is not much propagated, the Bergamotte d'Esperen and Josephine de Malines, two varieties which are far from being faultless, being preferred.

The variety Prince Albert, which is of a very fine habit of growth and of a cultivated appearance, is a first-rate late sort. This year I observed several fruits on grafts placed four years ago on the lateral branches of an old pyramid, a winter variety. The sort in question succeeds both on the quince and on the pear stock, and quickly forms on either of them a magnificent pyramid. Having been sent out only six years ago, it cannot yet be positively spoken of; but we must not forget that by pruning there is no late variety which cannot be made to produce fruit upon the rosettes* in the third year of their formation, when, according to its vigor, the head of the tree is six or eight feet high. As late fruits we may also mention Colmar Josse Smet, Beurré Caty, Supreme Coloma, Rameau, and Prevost.

It requires a very good season to appreciate these varieties when fruited in the open ground. It has been complained that too many autumn fruits have been sent out. It might

* There is no term in English to express these. By rosette is to be understood a nascent fruit spur, producing, in the first instance, a tuft of leaves; and such may only be produced for years; or amongst them a blossom bud or buds may appear in the course of two, three, or more years.

be replied, how many good autumn fruits have been obtained previous to the present century which can be cultivated in the open ground in our climate? At any rate these complaints, whether well founded or not, will soon cease. Of late years there have been raised from seed, by ourselves and friends, varieties bearing fruit of various forms, and ripening from the end of February to the end of May. The trees in general are of fine habit of growth, healthy, and vigorous. Although still on trial in our nurseries, they will soon be sent out to amateurs. As to the beauty, hardiness, and productiveness of the trees, as well as to the quality of the fruit, there is no longer the slightest doubt. The experiments in the nurseries have been carried on with the view of ascertaining on what kind of stocks and by what mode of propagation these varieties succeed best.

It may be added that the spring of 1857 has been very favorable to the seedlings of apricots, cherries, pears, and apples growing on their own roots, with heads more or less elevated, thin and spreading. All the seedlings which were sufficiently old to flower, have set and retained their fruits; yes, all their fruits without a single exception! This success depends, in our opinion, not upon the external temperature, whether hot or cold, moist or dry, but upon the preparation of the seed beds, and especially the amount of care that is taken in preparing the soil from which the roots are to derive the elements of future vigor.

Before finishing this long article, and at the risk of advancing a paradox to your readers, we may add that after having planted a collection of 200 sorts of apples, worked upon the Free, Doucin, and Paradise stock, and which were obtained from the first establishments in Europe, and trained in whatever form appeared to suit them best for 8, 10, or 15 years, from the very beginning perfect seeds of such of these varieties as appeared to be the best were commenced to be sown. The seedlings gave a more satisfactory result than the 200 varieties from which they were produced, that is to say, with four or five exceptions, the seedlings yielded finer and better fruit, and in greater abundance than all the other

trees put together, of which we have been able as yet to see and taste the fruit. From this it would appear to be absolutely useless to procure grafted trees, when we only wish to have apple trees raised on half or tall standards, to which more room must be allowed than to those on Doucin or Paradise stocks.

As for cherries, or plums, an entirely contrary opinion appears to us, from experiments, to be nearer the truth.

DESCRIPTIONS OF SELECT VARIETIES OF PEARS.

BY THE EDITOR.

THE pear crop of the present year, owing undoubtedly to the severe cold of last winter, has been much below the average. In many localities it has been almost an entire failure, while in others it has been as abundant as usual. In dry and protected gardens trees suffered very little, but in exposed and damp situations they were greatly injured; some kinds were killed outright, while others lost many of their branches or leading shoots. The Bartlett, Beurré Bosc, and Marie Louise suffered most with us, and we believe were the kinds generally affected everywhere. It is the only winter we have ever known, in our own experience, to injure trees in this neighborhood. We intend, at another time, to give a list of such varieties as appear the hardiest, with some remarks upon the severity of the cold and the manner in which the trees were affected.

From these causes we have been disappointed in our expectations of fruiting many new pears which promised well last autumn, and another and more favorable year will be necessary to enable us to procure good specimens of fruit. We are consequently only now enabled to figure and describe a limited number.

199. EASTER BEURRE'. *Hort. Soc. Cat.*

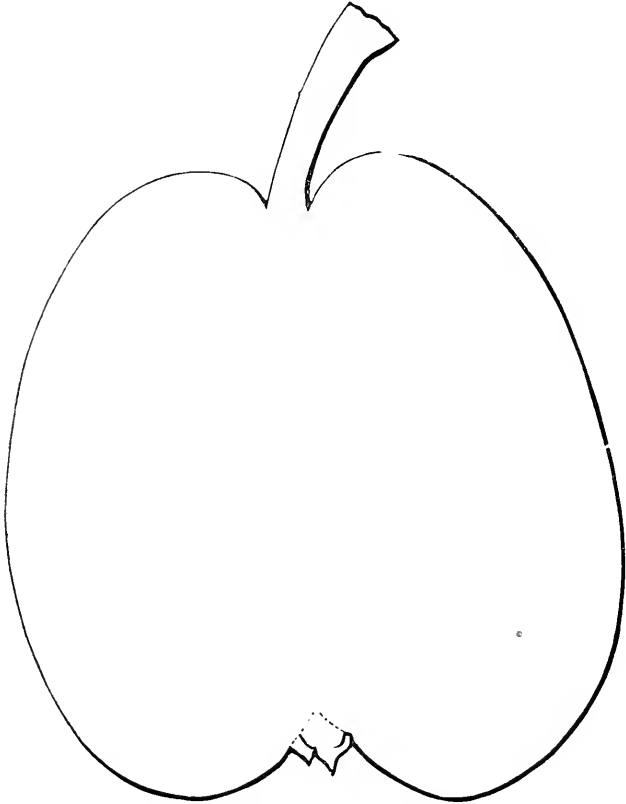
Bergamot de la Pentecote,
 Beurré de la Pentecote,
 Beurré d'Hiver de Bruxelles,
 Beurré de Paques,
 Bezi Chaumontel tres gros,
 Chaumontel tres gros,
 Canning,
 Doyenné d'hiver,
 Doyenné d'hiver Nouveau,
 Doyenné du Printemps,
 Seigneur d'hiver,
 Philippe de Paques,
 Du Patre,

} According to Hort. Soc. Cat.
 3d Ed.

The Easter Beurré (FIG. 20) is one of our oldest pears, introduced to Great Britain from the continent, but its origin is unknown. Lindley, in his *Guide to the Orchardist*, (1831) says, "of all the late keeping pears this is decidedly the best," and from that time up to the present no variety has been produced which would fill its place. Among the numerous seedlings of Van Mons, Esperin, Bouvier, Gregoire, Bivort, and others, raised the last fifty years, many superior pears have been found, but not one late-keeping variety which will compare with the Easter Beurré.

We have in our previous columns often spoken in praise of this variety, and urged its cultivation. From some cause, probably the want of judicious management, it at one time fell into disrepute, and many cultivators regrafted their trees with other sorts, as they failed to reap satisfactory results. The fruit they stated would not ripen, but remain hard and green or else dry and shrivel up. Neither were very large or handsome specimens raised. But since more attention has been devoted to pear culture, this variety has rapidly improved in the estimation of amateurs, and at the present time it is considered an indispensable addition to every good collection. It requires a warmer and richer soil than many other pears, and when the trees find such a locality, they produce abundantly and of the finest quality. In cold damp soils, the specimens are ill shaped, russetty, thick skinned, gritty at the core and nearly flavorless; while in the former

they are large, handsome, smooth, deep green, often with a ruddy cheek, and with a buttery melting flavor of the highest excellence. The fruit rarely if ever cracks, and when properly preserved and ripened, it may be eaten in perfection from February to May, later than we have found any really good pear to keep.



20. THE EASTER BEURRE' PEAR.

The Easter Beurre is a moderately vigorous and very hardy tree. Among all the great variety we cultivate none suffered less by the last severe winter than this. Not a tree, to our knowledge, had a branch or shoot injured, either upon the quince or pear stock, or in dry or damp situations where some of our native pears were more or less hurt. It may be there-

fore set down as one of the hardiest pears. It also grows freely upon the quince, unites well with the stock, and makes a vigorous tree. Only one thing is necessary to be observed in its culture, and that is to have the soil well drained, deep, light and rich.

The tree is an irregular grower, somewhat branching, and does not readily form a handsome pyramid. The wood is short jointed, moderately stout, and of a reddish brown. It bears rather young.

Size, large, about three and a half inches long and three and a quarter in diameter: *Form*, obovate, or roundish oblong, largest about the middle, narrowing little to the stem, rounding off to the crown, which is large and occasionally slightly ribbed and frequently compressed on the sides: *Skin*, fair, slightly rough, dull green, becoming yellow when fully mature, with a brownish red cheek in the sun, often having a striated appearance, and regularly covered with large, conspicuous russet specks: *Stem*, medium length, about an inch long, very stout, straight, and obliquely inserted in a small contracted cavity: *Eye*, small, closed, and moderately depressed in a small puckered basin; segments of the calyx narrow, stiff, and curved inwards: *Flesh*, yellowish white, little coarse, buttery, melting, and very juicy: *Flavor*, rich, brisk, vinous, slightly perfumed and delicious: *Core*, large: *Seeds*, medium size, sharply pointed. Ripen from February to April. *

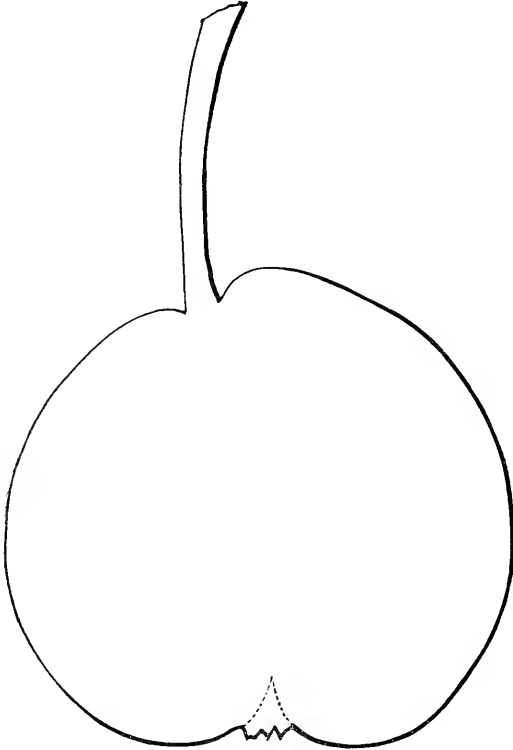
200. DES NONNES. *Album de Pomologie*, Vol. IV.

De Nonne, } of French collections.
Poire des Nonnes, }

Among the numerous pears which we have received from France and Belgium, comprising many hundred names, we by some mistake have not had this variety. Neither have we seen it in fruit among any of the amateur collections around Boston. For specimens of the fruit, from which our drawing and description are made, we are indebted to Messrs. Thorp, Smith & Hanchett of Syracuse, New York, who introduced and fruited it three or four years ago, and

who have shown it at various Horticultural Exhibitions in western New York. They received it from M. Leroy of Angers, in whose catalogue we first noticed the name.

The Des Nonnes pear (FIG. 21) is a very excellent variety; and if the qualities of the tree are as good as those of the fruit, deserves general cultivation. Since the receipt of these specimens we have endeavored to look up the history of the



21. THE DES NONNES PEAR.

variety. In the *Album de Pomologie* of Bivort, we find a plate with a description of the De Nonne pear. The description is very incomplete, and the representation of the pear evidently imperfect, being made from fruits sent to him by an amateur, and perhaps not an average specimen: he had never seen the tree. The drawing and description are evidently taken for this pear, for they correspond in every

particular but the form of the fruit, which is more elongated than the specimens sent us by Messrs. Thorp, Smith & Hanchett; as it is known, however, that such variations often take place, we consider the De Nonne of the *Album* the same as the Des Nonnes of M. Leroy; we notice Bivort commits errors in the names of some well known sorts, and he may have done so in this case, giving the singular instead of the plural termination.

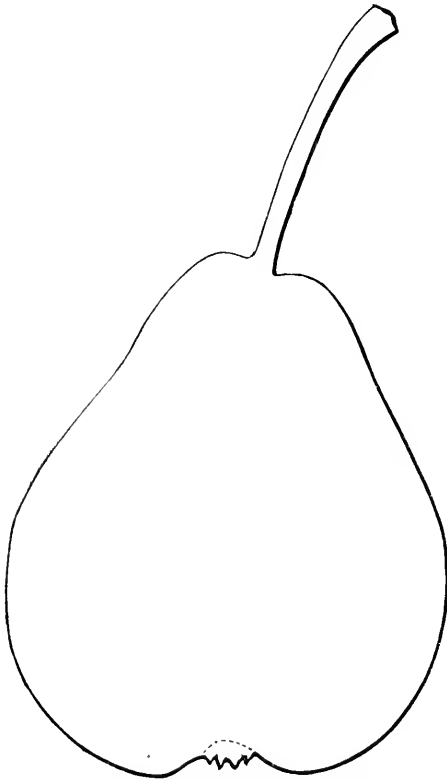
As we have no knowledge of the tree, its habit, growth, productiveness, &c., we copy the following letter accompanying the specimens sent us:—

“ We sent yesterday to the address of your firm a few specimens of the Des Nonnes pear. Holding this fruit in high estimation ourselves we submit it to you in the hope that our opinion may be confirmed by yours. The tree is one of the best and handsomest growers in the nursery, both on its own and the quince stock. It is moreover a great and early bearer, of uniformly fair and perfect fruit. The specimens sent are from three year old trees, now standing in nursery rows, with the exception of one or two, which are taken from the original imported trees. We are not aware that this fruit was ever described until it fruited with us in the fall of 1852, at which time we forwarded an account and description of it to the Horticulturist.”

Size, medium, about two and a half inches long and two and three quarters in diameter: *Form*, roundish obovate, large about the middle, rounding off to the crown and obtuse at the stem: *Skin*, fair, smooth, green, becoming pale yellow at maturity, tinged with pale blush on the sunny side, and covered with large, round, conspicuous russet specks, thickest on the exposed side: *Stem*, long, about an inch and a half in length, nearly straight, stout, and inserted in a very shallow cavity, under a slight projection: *Eye*, small, open, and set in a very small regular and shallow basin; segments of the calyx very short: *Flesh*, white, fine, melting, and very juicy: *Flavor*, rich and sugary with a strong bergamot aroma: *Core*, small: *Seeds*, medium size, brown. Ripe in September and October.

201. DES CHASSEURS.

Among a lot of new pears received from Belgium some ten years ago was one under this name. Nothing was known of its qualities save what was found in the catalogue, where it was stated to be of the first quality. Fortunately it has proved to be so. Our tree began to bear four or five years ago, but the specimens were at first small. Since the tree



22. THE DES CHASSEURS PEAR.

has attained age and size, they have been much finer, and this year come well up to the size of an ordinary Marie Louise, which it somewhat resembles in shape and color.

The Des Chasseurs, (FIG. 22,) according to the Belgian catalogues, is from the collection of Van Mons, and probably

one of his seedlings. We do not find it described in any pomological work. The tree is of a tolerably vigorous growth, with a tall and somewhat spreading habit, the branches bending readily with the weight of fruit. It flourishes well upon the quince, and our tree, now about ten years old, produces abundantly, having borne an annual crop. Wood yellowish brown.

Size, medium, about three and a half inches long and two and a half in diameter: *Form*, pyramidal, regular, large about the middle, rounding off to the crown and contracted near the stem: *Skin*, slightly rough, pale green, becoming yellowish at maturity, somewhat traced with dull russet, and dotted with minute russetty specks: *Stem*, medium length, about an inch long, rather slender, nearly straight, and obliquely inserted without any cavity: *Eye*, small, open, and set nearly even with the surface of the crown; segments of the calyx short; *Flesh*, yellowish white, little coarse, melting and juicy: *Flavor*, rich, saccharine, brisk, slightly perfumed and excellent: *Core*, small: *Seeds*, roundish ovate, obtusely pointed and dark. Ripe in October.

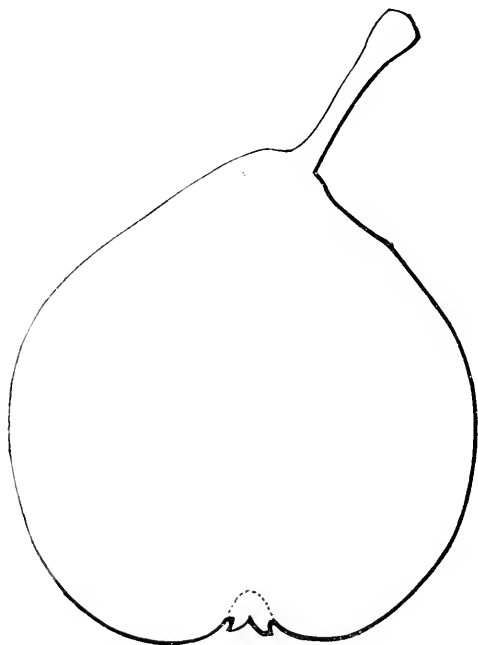
202. ANANAS D'ETE. *Lon. Hort. Soc. Catalogue.*

Many years ago, when the late Mr. R. Manning of Salen was forming his collection of pears, this variety among others was received by him from the Horticultural Society of London. It proved to be a very excellent early autumn pear, especially at that time, when the number was not quite so large as it is now. It was subsequently described as the Ananas, a name that has been applied to two or three other pears.

The Ananas d'Ete, (FIG. 22,) was distributed by Mr. Manning among our various nurserymen, and was subsequently described by Downing in his *Fruits and Fruit Trees*, who gave it so high a character, that it was eagerly sought for by various cultivators. But though a good fruit, it does not now hold quite so prominent a place; still it is a very excellent pear, and should be in every large collection, though it may be dispensed with in smaller ones. It ripens

at about the same season as the Bartlett, and hence is not so valuable. The tree is not a rapid grower, but it soon comes into bearing and produces well.

Size, medium, about three inches long and two and a half in diameter: *Form*, obtuse pyramidal, large at the crown, contracted at the stem into which it suddenly tapers: *Skin*, fair, smooth, pale yellow, mottled and clouded with light red in the sun and thickly dotted with small russet specks:



23. THE ANANAS D'ETE PEAR.

Stem, medium length, about three quarters of an inch long, stout, little fleshy at the base, and obliquely attached without any cavity by a fleshy union: *Eye*, medium size, open, and but little depressed in a rather shallow basin; segments of the calyx short: *Flesh*, yellowish white, fine, buttery and melting: *Flavor*, rich and sugary, with a pleasant spicy aroma: *Core*, medium size: *Seeds*, medium size, broad and flattened, dark. Ripe in September.

POMOLOGICAL GOSSIP.

ALL THE NEW PEARS NOT WORTHLESS.—As long ago as the organization of the American Pomological Society at New York, when the subject of publishing a rejected list of fruits was proposed, we, with other members, objected to such a movement, believing ourselves the best course to be to give those who had the time an opportunity to make a fair trial of them and ascertain the real merits of every variety before condemning it. We thought the time might come when this could be safely done, but for the present the greatest good would be accomplished by placing before the cultivators of the country the names of such as could be highly recommended by such an assemblage of pomologists, without disparaging the qualities of others of which we had not ample experience to form an accurate opinion. This course was sustained, though at a subsequent meeting the rejected list was adopted with however, the proviso, that three objections should save any variety from being placed on the list. But for this some excellent pears would have been found in very bad company. We are led to these remarks by noticing in a late number of the *Ohio Farmer*, a communication from Prof. Kirtland, which illustrates our own experience, and confirms what we have advanced above. In describing some new pears he writes as follows:—

“More than one half of the pears enumerated in the catalogues of American nurserymen are known only by name, or perhaps by the recommendation of the individuals who introduced them to public notice. The prevailing opinion is, that most of them are unworthy of cultivation, an opinion which I have entertained. More recent experience, with a better knowledge of the proper modes of cultivation, and especially of maturing the fruit, has of late led me to suspect, that my conclusions were not, in all instances, well founded. Many varieties which I formerly considered worthless, I now place tolerably high in the scale of merit. The condemned varieties of our pomological conventions often possess more good qualities than poor ones, and are entitled

to higher consideration than to have their names thus unceremoniously blackened."

Such is Prof. Kirtland's opinion, which accords with our own. M. de Jonghe, in his article on another page, fixes the period for testing the merits of a pear from ten to twenty years, which according to our experience we believe to be correct. How then should we undertake to condemn varieties which have not been introduced one half of that time! We hope the experience of such cultivators will induce every one to reflect before he sacrifices a tree and loses three or four years in his desire to regraft it with some newer or better fruit.

NEW GOOSEBERRIES.—Very little improvement has been made in this fruit among our own cultivators, though the English gardeners, it is well known, have brought it to the highest perfection, to the great weight of nearly an ounce each; it is also as equally well known that their growth is so uncertain here, owing to the liability to mildew, that few individuals attempt to raise them, and generally the gooseberry has not been a popular fruit. But since the introduction of Houghton's seedling,—an improvement upon our indigenous berry,—which is perfectly free from mildew in all soils and situations, it has been more sought after, and is rapidly taking its place with the currant and raspberry in all gardens of any extent. For a long period, now nearly twenty years, this has been the only seedling of any value, until within a short time, when other seedlings have attracted attention, and bid fair to equal or surpass this old favorite. Within a year three new sorts have come to our notice, all with high encomiums of their merit, and, so far as we have examined two of them, fully sustaining their reputation.

One of them is from New Lebanon, N. Y., where it was raised by the Shaker community, and is called the Mountain Seedling. They speak in high terms about it. It is a more vigorous plant than Houghton's seedling, bears more profusely, and is quite equal in flavor to that variety. A box of the fruit sent us, including a branch as it was cut from the bush, shows it to be a most prolific bearer, and quite free from mildew.

Another of these is from Vermont ; it very much resembles the last in appearance, and is quite equal to it in flavor.

A third, and the one we have not seen the fruit of, is a seedling raised by Mr. Charles Downing of Newburgh, N. Y., three years ago, from Houghton's seedling. It was selected from a lot of plants, and was the only superior one in quality and size ; the bush is erect and a hardy and vigorous grower.

Like the grape and other fruits, when once variation commences there is no foretelling the results, and with care in the selection of seed we doubt not a few years would give us a collection of native seedlings of all colors, far better than any already produced.

FINE PEARS AT THE EXHIBITION OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—The season of 1857, though not so favorable for the pear as last year, has, notwithstanding, produced some very excellent specimens, as seen at the exhibition of the Massachusetts Horticultural Society in September. Though the collections as a whole were not so fine as in 1856, many of the specimens were quite equal, and some superior, showing that while a wet and cool season suits some varieties, a warm and dry one suits others. The following are the names of the kinds in two of the principal collections :—

FROM COL. WILDER. Counciller Ranwez, Andrews, Belle Epine Dumas, Beurré Superfin, B. Langelier, B. Diel, B. d'Anjou, B. Sterekman, Pie IX, Dallas, Belle Lucrative, Dunmore, Swan's Orange, Nouveau Poiteau, Doyenné Boussock, Baron de Mello, Louise Bonne of Jersey, Golden Beurré of Bilboa, Winter Nelis, Vicar of Winkfield, Adams, Triumph of Jodoigne, Glout Moreceau, Lawrence, Abbott, Lodge, Columbia, Jalousie de Fontenay, August Benois, Jersey Gratioli.

FROM HOVEY & Co. Beurré Clairgeau, B. Diel, B. Bachelier, B. d'Anjou, B. Montgeron, B. Superfin, B. Bose, B. Langelier, Bartlett, Swan's Orange, Duchess, Flemish Beauty, Urbaniste, Passe Colmar, Belle Lucrative, Henkel, Paradise of Autumn, Sheldon, Lawrence, Nouveau Poiteau, Duchess

of Orleans, Doyenné Boussock, Gerando, Fulton, Glout Morceau, Adams, St. Michael Archange, Marie Louise, Louise Bonne of Jersey, Dunmore.

WHARTON'S EARLY PEAR.—Prof. Kirtland describes a native pear under this name, probably a seedling of the West:—

“In Mr. Elliott’s work on fruits (p. 387) may be found a figure and description of Wharton’s early pear. They were made out from specimens produced on a graft kindly furnished me by Eli Nichols of Walhonding, in Coshocton Co., Ohio, and are correct. Since that publication appeared I have had repeated opportunities to test this pear, and I am now disposed to class it among the most valuable of the early varieties of that species of fruit. It is an annual bearer, of fine flavor, of larger size than the Madeleine, or the Bloodgood, and attracts attention by its fine appearance in our market. Friend Nichols is, I believe, familiar with its origin, and would, no doubt, favor the *Ohio Farmer* with its history, as well as with his experience with this fruit. It is my impression that B. Kirtland and Thomas Frame of Poland, Ohio, have also cultivated it for a number of years, and are familiar with its merits. It is my impression that it originated somewhere in the Western States, but in this I may be in error.”

THE EARLY YORK PEACH.—This fine variety was exhibited by Mr. T. Rivers before the British Pomological Society, in London, on the 30th of August, and in the report of the meeting it is thus spoken of:—“Early York. First week in August. An American peach of medium size and of a bright red next the sun: flavor full, deliciously melting, with a fine aroma. This is without doubt by far the best early peach known.” This is high praise from the British pomologists, and admitting a good deal for our American fruits. According to the reports of the London Horticultural Society and the British Pomological, the best pear known is the Seckel, and the best peach the Early York. They have only to try other of our American varieties of both pear and peach to ascertain that we have many of equal quality, which are well worthy of introduction into all English collections.

Among all the fine American varieties of these two fruits not ten are known or appreciated in Great Britain. It is hard work to persuade her cultivators that Knight's Monarch, Crassane, and similar old pears, are not the best fruits in the world. We hope the great exhibition which took place in London on the 24th of October, will tend in a slight degree to diminish the prejudice against foreign fruits, and an opportunity to taste some of our finest varieties show them how much they have lost by delaying the introduction to so late a period. Even with the finest Belgian and French collections of pears within a hundred miles of London, they scarcely yet know anything of the great number of new varieties which have enriched our American collections for so long, and enabled our cultivators to produce, at the present day, a finer display of this fruit than can be made even in that land of pear culture—Belgium.

THE LOGAN GRAPE.—This is the name of a new variety exhibited by Dr. Grant of Iowa, N. Y., at the annual exhibition of the Massachusetts Horticultural Society in September last. We know nothing of the history or general characteristics of the grape, except from the simple examination of the fruit. It appeared to be riper than the Delaware, exhibited by Dr. Grant at the same time. It is a black grape with a deep blue bloom, smaller than the Isabella, and of good quality. Its earliness and excellence entitle it to the attention of grape growers.

ENORMOUS PROFITS OF FRUIT CULTURE.—At the annual sessions of the pomologists of western New York much is said about the great profits of fruit culture, and we took occasion last year to copy the remarks of our friend Mr. Hooker upon the subject, supposing what he said to be an honest expression of his views; but we were mistaken, as it appeared, for in a note which we published, (Vol. XXII, p. 268,) he informed us that his remarks were intended "simply as pleasantry directed at those persons who had been informing us of the great prices to be obtained for winter pears."

But this year not only are the reports of great profits the same as last year, but "more so," and in noticing them we

know not whether they are intended as "pleasantry" or the truth. If the latter, we think they are pretty "tall talk," and ought to be known, that in these dull times everybody may go into fruit raising, and realize a share of the fabulous profits.

Speaking as a nurseryman, it would be for our interest to circulate these reports of the great profits of fruit culture; we shall therefore not be accused this time of having an "axe to grind," when we say these reports repeated every year are simply absurd, and should not be countenanced by any association of pomologists having the true progress of the science at heart. Some isolated case of large profits of some single tree or half a dozen trees may be named, but to argue from this that similar profits accrue to the extensive cultivator is not true. We copy some of these statements:—

Mr. C. Downing stated that "the Hudson River Antwerp Raspberry was the only sort cultivated for the New York market. The product was from \$300 to \$800 per acre." At ten cents per quart, besides the expense of picking, selling, interest of land and cultivation, it would require 8000 quarts to the acre to produce the latter sum!

Mr. A. Pinney "had 500 dwarf pears, six to eight years of age, nearly all White Doyenné; these had cracked badly this year, and his profits were not large from them; but of other varieties he had sold at *nine dollars per basket* (of half a bushel each) *or 10 cents each*. He cultivates chiefly White Doyenné, Duchess, Bartlett, and Louise Bonne of Jersey. The latter he has found exceedingly productive—eight year trees yielding two to four baskets (*one to two* bushels) and bringing \$2 to \$4 per basket." We should like to look at a lot of dwarf pears, eight years old, bearing two to four baskets to a tree.

But Mr. C. H. Burtis tells the greatest story, viz: "that he knew trees of the White Doyenné which bore *ten barrels* a year (!)

These are from the reports of the meetings at Rochester and Buffalo, as we find them in the *Country Gentleman*.

In the same journal and of the same date, (Oct. 22,) a

correspondent who visited Dr. Grant's vineyard, near Newburgh, N. Y., states that he sold 400 pears, the produce of a six year old tree, for $12\frac{1}{2}$ cents each (\$50), and obtained \$18 *per bushel* for his Seckel pears." Can this be true? We should like to have the Doctor inform us.

But we trust, for the interest of horticulture, that our societies will not tolerate such statements, or at least give currency to them. They arouse the expectations of those who know but little of the culture of fruit, so high, that the failure to realize anything like similar results induces them to neglect their trees, give up planting, and leave fruit culture for some other crop.

A SCENE IN NATURE.

BY WILSON FLAGG.

A description of a scene in real nature is apt to be very tiresome, and is seldom interesting even to those who would look with delight upon the scene described. It is difficult to convey to the eye of the mind a picture that shall awaken all the emotions which are excited in presence of the real scene. In this respect the painter has greatly the advantage of the author, since the former has but to present a literal copy, or, as it were, a photograph of the landscape, and his object is accomplished. The author labors under the obvious difficulty attending all descriptions in words, which is, that that the language he uses to express his ideas is liable to be equally descriptive of a hundred other different landscapes. He must be precise without obscurity, and general without prolixity. To describe a scene consisting chiefly of natural objects, so that the reader will feel the same emotions which are excited by viewing it, and at the same time be able to identify it, or to paint it from the description, is one of the most difficult of literary tasks. Hence we find that such pictures are in general very obscure, resembling cloud scenery rather than the more definite objects of a landscape.

I have premised these remarks as an apology for my fail-

ure, if I do not succeed in giving the reader a clear idea of the scene which I have attempted to describe. My object is to present to the reader's mind a picture of one of a certain class of landscapes, which are very common in this part of the country, and which fail to attract attention only because the generality of our people can see nothing admirable in nature except her monstrosities. I am not obliged to visit Mount Washington or the Falls of Niagara, in order to experience the full force of the sublimity of nature, which I can equally perceive in the fading fires of the heavens at sunset, or in their starry glow by night. The common scenes of nature are capable of affording the most intense delight to those who have accustomed their minds to the study of all her aspects. We may sail round the globe in quest of scenes of grandeur and beauty; but we shall seek in vain for any thing more beautiful than a rainbow, or more sublime than the sun emerging as it were from the ocean, at sunrise, enshrouded in the dappled hues of morning.

About a mile from the Divinity School in Andover, and lying a little on the north of the old Salem road, is a hill which is among the highest elevations in Essex county. It consists apparently of two hemispherical hills united, leaving a depression between them, so that at a distance they seem like two distinct elevations. For the want of a better name, and as expressive of the brotherly union of the two, I will call this eminence Mount Fidelity. On the south side of it, between the hill and the Salem road, is a wooded swamp, consisting of a growth chiefly of maples, pines, and larches; and the most interesting way of approaching the hill is through a bye-road that leads one round on the northwest boundary of this wood. Lying contiguous to this bye-road are two or three very romantic situations, which we encounter before we reach Mount Fidelity. These I shall not attempt to describe. The view from the summit of the hill is very extensive, but not sufficiently varied to compare with views from other similar elevations nearer the coast. No village is very distinctly seen, nor a single lake or sheet of water. Hence with all the grandeur of the view, it is very

monotonous, and chiefly interesting to those who are satisfied with examining distant objects through a telescope.

As I have often observed when ascending other elevations, the views obtained from different points on the slope of the hill are more pleasing than from the summit. But it is not any one of these views which I shall attempt to describe. If we descend the hill, and follow a bye-road that leads under its eastern declivity, we soon arrive at a deserted house which is probably one of the most ancient in this vicinity. It is perhaps one hundred and fifty years old, bearing all the marks of the style of dwelling-houses erected at so early a period. It consists of two stories, one room deep, with the front door in the centre, having a room on each side. This house has not received that addition which has been made to many similar houses, of an appendage to the back part, covered by an unbroken extension of the roof sloping down to one story. A St. Michael's pear tree stands in front of the house, apparently in vigorous health, though the fruit is cracked and woody. The house is no longer habitable, and the old well stands near without curb or cross-pole. Apple trees, coeval with the house, stand, like old faithful sentinels, round the enclosure which was once a garden; and a bed of spearmint, the only remaining herb of the old garden, luxuriates in one corner.

From the hill-side in the rear of the house, we look down upon a whortleberry pasture, which is, at this season, before the tints of the foliage are spoiled by the frost, one of the most pleasing objects in the landscape. The bushes were all brightly tinged with orange, crimson and purple, and as they were irregularly mapped out on the green plain, the groups of shrubbery seemed like hundreds of variously shaped islands of flowers resting upon the green bed of the ocean. This pasture was probably a cornfield or hayfield when the original inhabitants of the old house lived there and tilled the neighboring soil. The pasture is without many trees, and of such extent as to present to the sight of the spectator a chart as singular as it is beautiful. Nature seems to anticipate the wants of her creatures by thus plant-

ing the whortleberry in all deserted grounds. In the primitive forest, where the produce of this shrub if abundant would be wasted, it is extremely scarce. After man has removed the forests, and the familiar birds that follow in the wake of agricultural labor have become numerous, nature immediately raises up the whortleberry, that produces abundant harvests of fruit both for man and bird.

But not the view from the mountain, nor the sheltered and romantic approach along by the woodside, nor the variegated whortleberry pasture with its flowery embroidery upon a green velvet groundwork; nor the old house, with its rustic well, its old sentinel apple trees and its plat of fragrant spearmint, will bear comparison with the valley that lies below them. Nature is infinite in her expedients and her resources. She uses the most ordinary materials, to form her most delightful landscapes; and she often keeps in reserve prospects of the most enchanting beauty, and causes them to rise up, as it were by magic, when we least expect them. From the eastern slope of Mount Fidelity we look down upon the plain in which this valley is embosomed, and we see the whole arrangement of field, orchard and wood. There is nothing striking in this view; and we are, therefore, unprepared to encounter a beautiful scene when we descend into the midst of it. Here the rule that "distance lends enchantment to the view" is reversed. As we pass along a bye-road that leads to a farm house, situated about half a mile southeast of the mount, we suddenly find ourselves encompassed with a magnificent amphitheatre of hills and woods; and it seems as if nature had just stepped out of paradise into this valley, crowned with all those virgin beauties that gladdened the sight of the first inhabitants of Eden.

Mount Fidelity forms nearly one-half of the circular bulwark that bounds the valley on the north and northwest. A smaller ridge, containing a thrifty orchard protects it on the south, and the remainder of the boundary is a natural wood. When on passing along this bye-road, we find ourselves thus suddenly in the midst of a natural garden, it seems marvel-

lous that the scene should be created by so little change in our position. We are now on a pleasant level. A neat farm house and its outbuildings stand on a moderate elevation on the south. As we look across the valley towards the east, a green meadow lies before us, occupying an area of about fifty acres. It is impossible to describe the beauty of this little savannah, which is covered with indigenous grasses, having never been subjected to the plough, and forming a smooth lawn, without any evidence of art or ornamental effort, which always renders a scene tame and prosaic. Here we see one of the charming results, which are so frequently observed, of the labors of those who operate without any regard to picturesque effects. I have seldom witnessed a landscape that was purposely laid out according to the principles of "landscape gardening," that was not utterly deprived of beauty. I could see that it possessed certain conveniences for the proprietor and his family; and these possibly might be worth the labor and expense which had been lavished upon it, and the sacrifice of its original charms. The most remarkable of all the artificial, or rather the *designed* landscapes which I have seen, with one or two exceptions, are surpassed both in interest and beauty by twenty rustic farms to be found in every county in the State. Nature seems to look upon the labors of the ploughman with more complacency than upon the efforts of those who are endeavoring to improve her features; and while the latter most generally spoil the landscape they attempt to embellish, the most beautiful objects and combinations slowly gather around the rude works of the husbandman.

In this valley are groups of trees and shrubbery like islands rising out of the plain, fortuitously arranged as the artist in landscape would arrange them, if it were possible to give to nature those forms and dispositions of things, which are easily conceived, but which nature only can execute. There is all that intricacy in the relative position of these groups and other objects which, when sufficiently circumscribed, constitutes a picture. If it were not that such views are common in our land, I would go further to behold one of them than

to obtain a view from Mount Blanc. The time of my visiting this place was in October, just before the variegated tints of the forest were destroyed by the frosts, and when the colors of the foliage render every scene more charming. When I left, I could not avoid attaching a moral to my reflections, being deeply impressed with the fact which we do not readily learn, that the most pleasing scenes are not the most celebrated, and that nature needs no assistance from art operating with design to produce the most delightful pictures.

Massachusetts Horticultural Society.

Saturday, Oct. 3, 1857.—The annual meeting of the Society was held today,—the President in the chair.

The first business before the meeting was the choice of officers, and the following gentlemen were elected for the ensuing year.

President—Josiah Stickney.

Vice Presidents—E. S. Rand, Eben Wight, Joseph Breck, C. M. Hovey.

Treasurer—William R. Austin.

Corresponding Secretary—Eben Wight.

Recording Secretary—F. Lyman Winship.

Professor of Botany and Vegetable Physiology—John Lewis Russell.

Professor of Entomology—J. W. P. Jenks.

Professor of Horticultural Chemistry—E. N. Horsford.

Committee on Fruits—J. S. Cabot, Chairman; W. R. Austin, C. M. Hovey, W. C. Strong, E. A. Story, J. F. C. Hyde, Robert Manning.

Committee on Flowers—E. S. Rand, Jr., Chairman; Azell C. Bowditch, John Lothrop, C. H. B. Breck, Charles Copeland, W. J. Underwood, Matthew H. Burr.

Committee on Vegetables—D. T. Curtis, Chairman; P. B. Hovey, Eliphalet Stone, Francis Marsh, Bowen Harrington, Galen Merriam, Azell Bowditch.

Committee on Library—C. M. Hovey, Chairman; Azell Bowditch, E. S. Rand, Jr., F. Winship; R. McCleary Copeland, Librarian.

Committee on Synonyms of Fruit—M. P. Wilder, Chairman; B. V. French, Samuel Walker, C. M. Hovey, Chairman of the Committee on Fruits.

Executive Committee—The President, Chairman; the Treasurer, Marshall P. Wilder, Samuel Walker, J. S. Cabot.

Committee for establishing Premiums—Chairman of the Committee on Fruits, Chairman; Chairman of the Committee on Flowers; Chairman of the Committee on Vegetables; Chairman of the Committee on Gardens; Corresponding Secretary; Recording Secretary.

Finance Committee—Josiah Stickney, Chairman; Marshall P. Wilder, Samuel Walker.

Committee on Publication—Corresponding Secretary, Chairman; Chairman of the Committee on Gardens; Chairman of the Committee on Flowers; Chairman of the Committee on Vegetables; Recording Secretary; C. M. Hovey, R. M. Clark.

Committee on Gardens—Samuel Walker, Chairman; W. R. Austin; Recording Secretary; Thomas Page; Chairman of Committee on Fruits; Chairman of Committee on Flowers; Chairman of Committee on Vegetables.

The meeting was adjourned two weeks to October 17th.

Horticultural Operations

FOR NOVEMBER.

FRUIT DEPARTMENT.

The month of October, with the exception of one week, was dry and fine throughout, with but two frosts of any severity. This very favorable weather has ripened off the wood of all kinds of trees, and they now appear to be in a much better condition to stand the winter than last year. It is to be hoped that such disastrous effects will not again be produced for a long time. As we have had a wet summer, we anticipate dry and favorable weather in November.

Now is the time to forward all kinds of planting and go on with preparations of land for spring work. All November will be suitable for setting out trees, unless early and repeated frosts set in; but to be ready for them the sooner everything is done the better. Protecting all kinds of fruit which need it should not be forgotten or neglected.

GRAPE VINES in the early vineries will soon be in bloom, and with the short days and diminished sun heat will require careful attention. Keep up a good day temperature, making fires in the morning rather than at night, especially in cloudy damp weather. Give air as freely as possible. Continue to stop the laterals and tie them in. Keep up a genial atmosphere but guard against damp. Vines in greenhouses and late graperies may be pruned this month or they may be left till December. They will not require any particular care. In cold houses the vines should all be pruned and protected against cold by laying them down and covering them with mats and manure or tan. The experience of last winter, when many vines were injured, should caution all cultivators to err on the safe side.

STRAWBERRY BEDS should be cleared of all weeds, and as soon as the ground begins to freeze, they should have a thin covering of manure, seaweed, salt hay, leaves or tan. We prefer seaweed when it can be had. Tan we consider the poorest covering.

RASPBERRY VINES, of the more tender kinds, should be laid down and covered with a few inches of soil.

CURRENTS and GOOSEBERRIES may be pruned now; it is also a good time to transplant, as they start so early in the spring that they do not make so good a growth.

FRUIT TREES of all kinds should be transplanted this month. Now is the time to clean, wash, and manure all young or bearing trees, especially such as are infested with the scale or bark louse. Whale oil soap, of the thickness of paint, or potash, dissolved in water at the rate of one pound to seven gallons of water, will accomplish the work.

FLOWER DEPARTMENT.

The month of November should find everything ready for the winter. In the houses the plants should be put in their best order, in order to give them the most cheerful appearance and render them inviting. The smaller and hardier plants should be kept in frames as long as possible, that their place may be filled with chrysanthemums and other showy flowers; remove the latter when their bloom is over. Light fires on cool nights, and air freely every fine day, as nothing is more injurious than to draw up the plants at this early season.

CAMELIAS will begin to bloom soon; keep them well watered and syringe often; top dress such as need it if not already done.

AZALEAS will now remain dormant for a while, and should be sparingly watered.

PELARGONIUMS will now require attention. The flowering specimens should now have a shift and be arranged where they can have plenty of room as near the light as possible. Water carefully. Fancy sorts should be kept on a shelf near the glass, topping the young shoots in order to keep them stocky.

CHRYSANTHEMUMS, now coming into full bloom, should be well watered, using liquid manure occasionally.

CALCEOLARIAS should now be potted off from the seed pods, and have a good place near the glass. Older stock should have a shift.

CINERARIAS may be kept in frames as late as possible, guarding against frost. Now is the time to repot and forward the early flowering specimens.

VERBENAS for winter blooming should have a shift into good sized pots. Young stock should be potted off.

HEATHS growing freely should be repotted. Water carefully.

ROSES taken from the open ground and potted now should stand in a frame for a month or so before being taken into the house. Early potted plants should now be pruned and have a good situation.

NEMOPHILA and other annuals for winter blooming should be shifted into larger pots.

STOCKS should be kept in frames as long as the weather will admit.

TROPEOLUM TRICOLORUM should now be repotted, and started into growth. Water very sparingly till the young shoots are well advanced.

CACTUSES, except the autumn blooming ones, should be sparingly watered.

GESNERAS should have a shift, and the warmest situation in the house.

MONTHLY CARNATIONS, coming into bloom, may have larger pots.

FRAMES should be well protected from frost.

PREPARATION FOR WINTER.

IN a climate so variable and severe as ours, where we cultivate indiscriminately plants from all the temperate regions, there is scarcely a winter in which a greater or less number are not injured to some extent, either in their roots, their wood, their foliage, or their flower-buds, and frequently in all of these; sometimes so as to kill them outright, or cause them to live out a lingering death; or to disfigure and damage them, so that they are neither objects of ornament or use. If these disasters do not occur every year, they have their periodical return; and once in ten or even twenty years, as in those of 1835 and 1857, many fine plants and shrubs are hopelessly injured or disfigured. With these constantly recurring dangers, the zeal of the energetic amateur or industrious gardener receives a blow that is often well nigh fatal to his future efforts; and but for the fact that careful and unremitted attention have endeared the various objects of his solicitude to him, he would have very little courage to go on, with the hope of accomplishing anything satisfactory. But summer comes, and with it the genial dews, the gentle rains, and bright sunshine, which give new life to exhausted vegetation; as if by magic, even the shrivelled remnant of some favorite plant, looked upon as beyond recovery, springs into vigorous growth; and, before autumn again tinges the foliage with her kaleidoscope hues, outgrows its former self, and appears, with fresh verdure, more beautiful and more attractive than ever, to gladden the hopes of the possessor, reward him for his labor, and show how great are the powers of all vegetable life.

Year after year these changes take place, discouraging the cultivator at one season and rewarding him at another, till age has given a vigor to both root and branch, which enables every plant to contend better against the vicissitudes of climate, and, except in constitutions hopelessly tender, become

an object of real beauty. All this, however, is indeed a work of time, which it should be the object of the cultivator to abridge as much as possible by all the means in his power, that in a young as well as older state every plant may retain its healthiest and most vigorous aspect. Fortunately we can aid in this; and, by well-directed and judicious efforts, accomplish in a few years what time will only give to the neglectful and indolent cultivator.

Though we hear of the vigor and hardiness of many plants and trees in Great Britain, very few know how much care and time have been given to make them so. At Dropmore, the seat of Lady Grenville, the famous *Araucaria imbricata*, and Douglas Fir, as well as many other species of evergreens, were for a long period protected during winter in the most thorough manner, as Mr. Frost, the intelligent gardener, informed us, at the time of our visit. And the fine magnolias in the collection of Mr. J. A. Kenrick, Newton, would not have been what they are but for the pains he took in protecting them from the severity of our winters. Not only have the native locality and soil of certain trees to be studied, but they must be imitated to have entire success. The region from whence they come is not always an indication of their hardiness. If we desire to have them, means must be used to accomplish this. If our gardens were to be filled with only such trees, shrubs, and plants as grow naturally in regions as severe as our own climate, we should be confined to a very small number. We rely for variety, as well as beauty, upon many which come from almost a tropical region, or at least from high altitudes in warm climates, where the winters may be severe, but of much shorter duration. Here they flourish in their youth protected by deep snows, or sheltered beneath the foliage of larger trees, till in time they obtain that firmness of wood which defies cold, and renders them no longer susceptible to injury. Following nature, we must afford them similar protection when planted out in our exposed pleasure-grounds and gardens, or it would be folly to expect anything but disastrous results. To reject them because they require

some protection, would be to divest our gardens of many of their most beautiful ornaments.

Instances of the need of protection to several trees and shrubs have come under our observation. Our own grounds are for the most part composed of a stiff loam on a clayey subsoil, very unfavorable for all half-hardy things. They are also quite exposed. In some places we have planted many choice new shrubs, which have invariably suffered every year, and some of them so as to be comparatively worthless; but by removing them to a situation where the soil was lighter and partially sheltered, they have recovered and established themselves beyond danger of even the last unusually severe winter. At Mr. Hunnewell's in Needham, whose place we have described, he has such a favorable soil, and a locality sheltered by native pines, that he has succeeded in cultivating several trees and shrubs which have failed in other places. The Douglas Fir and English Laurel he has of very respectable size for the time they have been planted; and, in a few years, these and several others will undoubtedly become hardy enough to stand our winters unharmed.

Appreciating, therefore, the importance of this subject, we are led to refer to it at this time, and to offer some advice in regard to winter protection, and the best means of accomplishing the work:—

EVERGREEN TREES AND SHRUBS.—The beauty of many evergreens, even though quite hardy,—that is, so as not to lose either bud or branch,—is greatly enhanced by a slight protection. The rhododendrons, for instance, whose broad and deep green foliage is so rich and beautiful, are frequently touched by severe frosts so as to present a browned and sunburnt look. All this is the effect of heat, and not cold; or rather cold alone would not cause it without heat. The warm sun of February and March shining upon the frozen leaves produces this effect. All that is necessary is therefore to guard them from the influence of the sun. This may be done simply by sticking pine boughs among them, just thick enough to cover the foliage. They will

then come out as fresh in the spring as they appear at the present time. The same treatment applies to all the broad-leaved kinds: the Holly, Kalmia, Tree box, Mahonia, &c. The latter comes from the Rocky Mountains, at a high altitude, where it is covered with snow during the entire winter; and its magnificent glossy green leaves, surpassing in richness almost any other shrub, can be preserved from slight injury only by such a protection as we have named. Box edgings always suffer from the same cause.

The evergreen trees, such as the Douglas Fir, *Abies morinda*, Cedar of Lebanon, &c., absolutely require such protection, or their leading shoots will be likely to perish, though their roots receive no injury. The fact that they may become hardy needs no better confirmation than the entire freedom from injury of the lower and older portion of the tree, which makes an attempt every year to recover its lost shoots, without apparent diminution of vigor, till it becomes a dwarf bush. All that is necessary is, when once the frost sets in, to keep them from the sun and sharp cutting winds.

Straw is frequently used, as well as bass mats, for covering such trees; but it is, in most instances, worse for them than if they had not been touched. A cone of straw holds the moisture from every rain, and does not allow a circulation of air, which is the one thing essential to success. It is far better that they should be exposed to the north, than that they should be entirely covered; for it is damp cold that is so fatal. On this account all straw coverings, as usually applied, by tying up into a cone, should be rejected. If none other can be obtained, the cone should be left open on the north side, with a cavity all around the tree for the air to circulate freely.

In addition to whatever covering is used, the ground should have a good coat of leaves or strawy manure to keep the frost from penetrating to the roots.

DECIDUOUS TREES AND SHRUBS.—Many of these need protection if good specimens are wanted without delay. The Magnolias, particularly *macrophylla* and *tripétala*, lose

their terminal buds while young, which mars their beauty, by causing them to form shrubs rather than trees. The *Soulangeana*, *conspicua* and *purpurea* likewise attain a more vigorous growth by early protection. We are not sure but what the *M. grandiflora* might be made to survive our winters with due care and attention. At any rate, the others are beautiful enough to merit all our care. Some of the *Spiræas* are quite tender; but they are so easily protected by pegging down the shoots, and covering them with litter, straw, or leaves, that they may be always seen in perfection. *S. aræifolia* and *Lindleyana* are of this description; frequently losing just enough of their shoots to prevent them from blooming. That elegant climbing plant, the Large-flowered *Bignonia*, may be grown in fine condition simply by laying the branches upon the ground and covering them with five or six inches of leaves.

Another class of deciduous shrubs, though quite hardy, still well repay a slight protection: the Tree pæonies push more vigorously, and flower much better, if covered with a few leaves than if left wholly exposed, though no branches may be injured; and of many kinds of roses, particularly the mosses, a far finer display of flowers may be obtained if the shoots are bent to the ground and lightly covered with manure or earth. These and similar low growing shrubs demand so little labor, that they amply repay all that is done with a more profuse display of their beautiful flowers, and a more robust and vigorous habit.

HERBACEOUS PLANTS are always best protected with a thin covering of good old decayed manure, as it serves at once the double purpose of protection and enrichment. But if not at hand, or easily to be had, leaves, or even pine or evergreen boughs, of any kind, are perfectly suited to the purpose. Even tan will answer better than nothing, though we much prefer the manure. Leaves should never be put on too thick, as they frequently prevent the admission of air, and often cause the plants to heat and rot. A thin covering of leaves contains more warmth than a much thicker covering of manure. Lilies, tulips, and other bulbs

should be sufficiently covered to keep the frost from penetrating as low as the bulbs; otherwise they do not push their roots early, and start with diminished vigor in spring. We might particularize other plants which require judgment in covering, but they are too numerous to enter into detail. What we wish to urge is the general practice of protection, according to the nature of the plants; all being better for it, and some impossible to possess without it. The *rationale* of it is to obstruct the escape of terrestrial heat and prevent exposure to solar warmth, and stop sudden freezing and thawing, which always more or less destroys the organism of all plants.

PROSPECTS.

BY WILSON FLAGG.

'PROSPECTS may be arranged under three heads: the *panoramic*, the *dioramic*, and the *picturesque* prospect. The *panoramic* prospect is one that commands an uninterrupted view, as far as the eye can reach, of the surrounding country in every direction. Such is that which is viewed from an eminence, when the view is not interrupted by contiguous objects. Every mountain prospect is not panoramic, because it may be confined by the close proximity of other mountains. A valley prospect, on the other hand, may partake of the character of a panoramic view, when the rising grounds encompassing it are so gradual in their ascent as to afford uninterrupted distant views on all sides. These, of all extensive prospects, afford the most lasting delight, producing an emotion of sublimity, without any sense of uncomfortable altitude, as from a mountain.

Sublimity is the emotion which is most palpably felt on viewing a mountain panoramic prospect, and a sense of delight on viewing a panoramic valley prospect. The first, as I have intimated in another essay, is attended by a feeling which informs us that we can see no more; as, by descend-

ing, we obtain partial views only of what we now behold in its full magnitude. In the valley prospect we indulge the feeling that, how beautiful soever the present view, we may, by proceeding to the outer circle that bounds it, obtain the sight of still more beautiful landscapes beyond. Hence such a prospect is attended with a mental state of hopefulness, that adds something to the delight with which we contemplate it.

The *dioramic* prospect is one seen through ranges of hills, through a deep ravine, or from any place which affords a view of only one point of the heavens. We experience a peculiar modification of pleasure on viewing in this manner the same objects which we had just beheld as part of a great panoramic scene, because they are now sufficiently circumscribed to command our involuntary attention. It is to secure the same advantage, in an inferior degree, that we use the hollow tube, that shuts out lateral objects, and confines our attention to those directly before the sight. The superior pleasantness of these partial views is made evident when we obtain a glimpse of the landscape through an arch, a vista, or an opening in a wood.

When we behold an extended dioramic prospect, we experience a feeling of grandeur combined with a pleasing sense of progression. We see something ahead which we imagine would afford us still higher pleasure when we draw near enough to enjoy a full sight of what is now only dimly seen. For this reason a road that leads us down a declivity, through a narrow pass in the mountains, with a view constantly before us of distant villages, plains, rivers, and collections of water, is extremely delightful. While performing such a journey we feel a constantly-increasing pleasure; as when we are listening to an approaching band of music along a winding road, that causes it now and then to die almost away upon the ear, increasing in loudness every time it comes out from behind the intervening hills.

There is more or less of the same exhilarating pleasure experienced on passing up or down a narrow river, when, although we seldom obtain an extensive prospect, we are

constantly expecting something brighter and more beautiful than anything we have yet encountered. Lake voyaging, on the contrary, awakens the emotions we feel on beholding a wide panoramic view. We may meet with agreeable surprises, but we are less excited by that pleasant feeling of expectancy that accompanies almost every stage of a river voyage.

The *picturesque* prospect is any view which is sufficiently circumscribed to constitute a picture, or to be adapted to the purposes of the painter. If we stand on a gentle eminence, and look down into a narrow valley, containing a single farmhouse and its appurtenances, with a small collection of water embosomed in it, or a small stream meandering through it, with the accompaniment of flocks and herds, we behold a genuine picturesque prospect. We behold one single picture, unembarrassed by any surrounding scenes that divert the attention and mislead the mind of the spectator. Picturesque prospects abound in mountainous and hilly countries. Levels afford extended prospects; but the effect of many agreeable scenes is destroyed by their blending with contiguous objects. Yet the most picturesque views are situated on a level, when seen from an eminence, or encompassed by woods or rising grounds.

Forests partially cleared and settled afford many picturesque scenes, even on a plain, because the woods serve as boundaries to those charming little settlements, which, viewed in an open plain, would be without interest. Such clearings, however, must not be too recent. Sufficient time must have elapsed to allow nature to repair the defacement of her own features by the hands of the pioneer, and to harmonize the broken ground by a new creation of wildflowers, herbs, and shrubbery. Hence New England exhibits more of these charming scenes than the western country, where the baldness occasioned by the labors of the new settler has not been repaired by the slower operations of nature. In the southern part of the country the huts of the negroes, and the grounds about them, are often highly picturesque; but seldom, in this quality, equal the cottages and grounds of

the poorer classes of laborers in New England, whose appurtenances are more suggestive of neatness and comfort.

It is a general opinion that a level plain cannot, under any circumstances, be very interesting; yet I have seen some of the most lovely views, and some of the most beautiful combinations and arrangements of natural and artificial objects, on a perfect level, uninterrupted by a single eminence. Our most pleasing reminiscences are commonly associated with hills and valleys. But there are valleys formed by surrounding woods as well as by surrounding hills; and these are rendered the more charming because they are the more sequestered,—being more completely shut out from observation than a valley between hills, which are indeed so many observatories for the spectator. Surprises are likewise just as remarkable on a wooded plain as among the hills. Among the hills we are constantly on the watch for them; the character of the ground gives us reason to expect them; and this expectation causes them to lose some of their effect. When rambling through the woods on a level, nothing in nature is more delightful than suddenly emerging into an open space, or into a little clearing, containing all the usual accompaniments of a rustic farm.

The most desirable prospects are those which command a view of water. Whether this water be a noble river, spreading itself out into a broad expanse, a wide lake, or the sea itself, the effect in all cases is very much the same. In many cases the landscape is marred by wharves and other edifices built around the shore of navigable waters. One must, under these circumstances, stand far enough from the shore to overlook these objects, upon the waters and prospect beyond; or he must remove to a spot from which he can view the shore undefaced by the implements of trade and commerce. For how beautiful soever the sight of a sail, or a fleet of sails, upon the waters, they must be situated outside of the harbor, and be seen disconnected with the unpoetical objects about the wharves.

There is an essential difference to be remarked between a sea view, and a lake or river view of equal apparent extent

of waters. Besides the associations connected with the ocean, and the habit, which is unavoidable, of extending our thoughts into the boundless space beyond it, thus rendering a sea view more sublime than any other water scene would be that exactly resembles it, there are also important differences presented to the observation. The ebbing and flowing of the tides cause a pleasant alternation of appearances about the shore, which are offensive only in those places where the ocean bed has been made the reservoir of the foulness of a city. The banks of the sea-shore are likewise very unlike those of a lake or a river. The former are divided by more sinuosities; and the rocks, if they have a rocky foundation, are usually more bold in their outlines, and more completely divested of soil at their base.

The sounds we hear in any situation produce a great modification of the influences of prospect. In this respect a sea prospect may be ranked above all other water scenery. A river produces no very audible sounds, except when it flows over a bed of rocks, forming rapids; or down a declivity, forming a waterfall. When constantly within hearing of these, the sound is tiresomely monotonous and incessant. Not so the sounds produced by the ebbing and flowing of the tides, or of the dashing of the waves upon the shore. These sounds are constantly changing, and never incessant, except during a storm, and a few hours after it. The alternation of sound and silence that attends the ebbing and flowing of the tides, is beyond comparison more agreeable than the roar of the waterfall.

But for its cheering influence on the imagination, no prospect is so excellent as one that commands the view of a small river, exhibiting to the eye all its beautiful windings along the plain, now losing itself behind a hill or a wood, and suddenly reappearing beyond it, until it melts away into the blue haze of the distant horizon. Scenes, however, of narrow limits, of ordinary features, and of pleasing but not remarkable expression, are what I should prefer for the constant recreation of the sight and the mind; which can revel longer and more continually among quiet and rustic scenes

than among those which are highly dressed, or exciting by their wildness or their sublimity.

Not only are prospects modified by diversities of the earth's surface; they are also essentially modified by the changes of the seasons, which give to northern climates an immense superiority over the tropics. Hence almost all genius has originated in the northern temperate zone. Not only does the winter compel the inhabitants of the north to exercise their full energy in providing themselves the comforts and the necessaries of life, which in a tropical country come to them almost spontaneously from the hand of nature, but every change in the seasons affords a new subject for thought, and a new incitement to study the works of nature. The changes in the aspects of nature attending the arrival of each new season, and almost of each new month, present something ever new to attract the eye, and to render the landscape, even in its desolation, interesting to the mind. There must be a tiresome sameness in the appearance of nature under the tropics; for there we are obliged to change our place to obtain a change of scene. Not so in high northern latitudes. Here, though confined from year to year in one place, the scenery around it is never the same more than one season at a time; and every succeeding month brings with it some new phase in the landscape.

In high northern latitudes the earth, during winter, is entirely covered with snow, and no change takes place until the arrival of spring. In the temperate regions the earth is alternately covered with snow and divested of it, or agreeably diversified with bare ground contrasted with tracts of snowy whiteness. This circumstance affords us some advantages not experienced by the inhabitant of Nova Zembla. There is something very exhilarating to the sight in a landscape entirely covered with snow. To the majority of observers, especially if they are unaccustomed to it, it affords a very deep emotion of sublimity. There is in this universal sleep of nature a quality which is suggestive of the deepest impressions of awe, somewhat allied to those feelings with which we contemplate the impenetrable shades of

a vast wood. To feel that those powers which are so active in their work during spring and summer are entirely at rest, without having lost any of their energies,—which are only waiting to be revived by the genial light of the sun, now too feeble to awake them,—and to think of the immense hosts of living creatures which will come forth to a new resurrection upon a slight increase of the duration of daylight, arouse reflections so nearly allied with infinity that not even the contemplation of the heavenly hosts can be more sublime.

Besides the unspotted purity of a landscape entirely wrapped in snow, there is a stillness of all things at such a time, that prepares the mind to feel with a peculiar sensibility the influence of every accidental sound that meets the ear; and the dreariness, at the same time, enlivens our sense of every moving object. The sight of a bird, or any animal, in winter, in the wild-wood or pasture, which in summer would pass unnoticed, immediately fixes our attention. According to the same principle we recognize a person whom we have seen only once in the country, on seeing him the day afterwards; while the faces of persons we meet every day in the city, unless we have conversation with them, make no impression on our minds, and pass from our memories forever.

The moral influence of these changes of the season and of the prospect must be very great, and wholly incalculable. We may reasonably suppose that the inhabitant of the tropics who has never seen a winter landscape, must be destitute of ideas which form an important part of our intellectual stores; and we can easily be persuaded of the truth of an assertion frequently made, that the inhabitants of northern latitudes are more imaginative than those of a more temperate region. Hence religion, which in a warm and luxurious climate grows sensual and inert, becomes in a northern climate, as in Scotland, highly imaginative, superstitious, and combined with an active enthusiasm. While the voluptuous Italian worships the image of the Virgin, with a feeling intimately associated with the passion of

love, and thinks only of the ceremonies required by his creed, the Scot mingles all his religious sentiments with the storms and darkness of winter nights, and associates the image of the Deity with the sublime and varied phenomena of the earth and the heavens.

At no season of the year has the landscape so little to charm the sight as in the commencement of spring. The dreary beauty of winter has vanished, and in the place of it the earth presents only a monotonous appearance of bare ground, scarcely enlivened by any vegetation. It is the mind, not the eye, which is charmed by such a prospect. The dark brown hills, with their still leafless woods,—the ground still black with the decayed foliage of autumn, exhibiting only here and there a few stripes of verdure,—the meadows half covered with water standing in unsightly pools,—present nothing beautiful to the eye; while every nook abounds in something that suggests a cheerful and enlivening image to the imagination. As the season advances, every scene grows more attractive; until the unfolding of the leaves, and the blossoming of trees and flowers, constitute a true vernal prospect.

Spring has a unique character of landscape, as plainly distinguished in this respect from summer, as summer is from autumn or winter. The characteristic marks of a vernal prospect are a certain lightness and airiness, and a freedom from almost everything that is sombre. A wood scene is more beautiful in May than in any other month; for I cannot regard the tints of Autumn, though more brilliant, as so truly charming, or so great in their variety. As the summer advances, the foliage of the trees assumes a deeper tint of green, and the whole wood a greater uniformity of hue. The distinguishing marks of a summer prospect are its universal greenness and luxuriance. Our climate is at this period more beautiful than the tropics, which exhibit, along with their noble variety of trees, a surface seared by the hot sun, and destitute of that green carpet of herbage which is the peculiar mark of the northern temperate zone. In October we witness the last change that

precedes winter, when nature, as if to soften the melancholy inspired by the decline of the year, benevolently draws a veil of beauty over the whole face of creation.

POMOLOGICAL GOSSIP.

THE GREAT FRUIT EXHIBITION OF THE LONDON HORTICULTURAL SOCIETY.—This great show took place on the 24th of October last, and a full account of it appears in the *Gardeners' Chronicle*, from which we give an extract in another page. It will afford a pretty good idea of the pomological advancement of Great Britain. What may appear singular to our cultivators is the disposition of premiums to foreign competitors, who were invited to contribute. The prize in this class was awarded to Mr. Solomons, a fruit dealer of Covent Garden, whose specimens were selected from the numerous cultivators from whom he purchases his fruit! This certainly is a new way of awarding prizes to *foreign* competitors. It will be noticed that the best twelve varieties of *dessert* pears, which obtained the prize, contained Belle Angevine, Uvedale's St. Germain, (both the same,) Spanish Bon Chrétien, Winter Bon Chrétien, Gilgil, Le Curé, and old Colmar, all merely baking pears! The Seckel obtained the prize as the best single dish, having been shown by Mr. Tillyard, an English gardener. After the high praises bestowed upon English cultivators by Dr. Lindley, in his notice of the exhibition, it is some merit to have an American pear take the lead.

At another opportunity we shall notice this exhibition again, and now refer our readers to the report of the same.

THE WINSLOW GRAPE.—Dr. Kirtland describes a new seedling under this name in the *Ohio Farmer*. According to his account of it, the variety attained perfect maturity in his grounds, this season, two weeks before the Diana and the Clinton. The berries are small, and in oblong compact bunches; color coal black, resembling somewhat Miller's

Burgundy; the pulp and flavor much like the Clinton, though superior. It was raised from a seed, in the grounds of Charles Winslow, Esq., of Cleveland, from whom Dr. Kirtland obtained his vine. As the growth of the wood is small and compact, and it seems to be as hardy as the Clinton, it will stand the winters of the north. The early ripening of the fruit will perhaps render it worthy of cultivation; at least it deserves further trial.

We have great confidence in the good judgment of Dr. Kirtland, and should not suppose he would notice a grape thus particularly unless it has some merits; but when he states that "the pulp and flavor are like the Clinton, though superior." we are somewhat doubtful of its real qualities, for a poorer grape was never offered to the cultivators of this country than the Clinton. What it may be worth for making wine we cannot say, but as a table grape it is worthless, being small, sour, and pulpy. Its only merits are its earliness, hardiness, and abundant bearing. The Northern Muscadine is as much superior to it as the Diana is to the Clinton. We know of no grape of recent introduction, as a table fruit, that is inferior to the Clinton.

DES NONNES PEAR.—This fine variety, which we described and figured in our last number, we learn from Messrs. Thorp, Smith & Hanchett, since that appeared, is a fine grower, and an early and abundant bearer, being unexceptionable in this respect. We should have included among the synonyms the name Beurré de Brignais, it being described in the *Album de Pomologie* as Des Nonnes or Beurré Brignais. We notice Mr. C. Downing, in his recent revision of his brother's work, the *Fruits and Fruit Trees of America*, calls it the Beurré de Brignais on the authority of the author of the former work, which we deem a mistake, as he says "Des Nonnes or Beurré de Brignais."

THE NEW BLACKBERRY NAMED AT LAST.—Such is the heading of a paragraph now going the rounds of the agricultural papers in reference to the well known Lawton Blackberry, which we thought had a name long ago. At the recent meeting of the Fruit Growers of Western New York

it was voted to call it the New Rochelle; and at the meeting of the American Pomological Society, held at the same place, in September, 1856, it was voted to retain the name of the Lawton. We ourselves care very little what the vote of any society may be in such a matter, as we invariably adhere to the rule of priority in all names,—the only way to prevent a multiplicity of synonyms; but it appears to us that the vote of the American Pomological Society must be quite as important upon such a subject as that of the Fruit Growers of Western New York. It seems to us a very small matter to keep constantly agitated, as this has been for three or four years. Neither the quality of the fruit, nor its importance to the community, require so great an exhibition of petty jealousy as appears to be mixed up with this subject. The Dorchester Blackberry will be preferred as soon as its qualities are generally known.

FLORICULTURAL NOTICES.

THE PAMPAS GRASS, (*Gynerium argenteum*.)—This new grass, which has now become generally distributed in English collections, and introduced into American gardens, is described as being one of the most striking and ornamental objects. Various accounts of it have appeared in the English gardening journals, in regard to its beauty, hardiness, manner of cultivation, &c. It has proved quite hardy in Great Britain; but, coming from Brazil, we supposed it would require protection here, and therefore be of little value; but, from recent statements, we observe that it grows so rapidly, and blooms so abundantly, that, should it not prove hardy, it may be protected in winter, and planted out in spring, when it will attain its full growth, and flower throughout September and October. If this is the case, of which there appears no doubt, it deserves immediate introduction into every collection, as nothing can be finer, not

even the much admired and popular Dielytra, than this gigantic grass; it being, in fact, when in perfection, a perfect fountain of green foliage and feathery flowers, which, under a brilliant sun, appear spangled with silver. It grows in tussocks, and the leaves are seven or eight feet long. It throws up ten to forty stems, terminated with a panicle of light colored flowers. It grows in any soil or situation. It is thus noticed in a leading article in the *Gardeners' Chronicle* :—

“Being perfectly hardy, and indifferent to soil or situation.—at least in the Midland Counties of England,—and, moreover, growing with singular rapidity, it soon rewards us with the display of its floral beauty. For example, a small plant raised from seed early in 1856, and turned into a border at the midsummer following, is already (October, 1857) twelve feet high, covers a circle nine feet in diameter, and is bearing eleven of its beautiful plumes of silver flowers. Thus a few blades of worthless grass, in four months, has formed a tuft large enough to be trusted to the unprotected ground; in four months more it had formed a great hemisphere of gracefully curving leaves; when winter came it went to rest; with warm weather it roused itself, and immediately commenced a gradual overflow of beautiful foliage, till in six months more it stood revealed in all the grace and majesty of its nature. It might be described as a fountain of vegetation, acquiring more and more force from day to day, till at last the gushing fluid sprung up into jets of living silver.

“If such is the result of a few months' growth, what is to be expected after the lapse of further time? ‘I have a Pampas grass,’ says a correspondent, ‘with over *forty* flower stems, ten to thirteen feet high. The flowers are light colored, almost white when seen in some positions. If this is a male, which you say is inferior to the female, the latter must be beautiful indeed, for mine is very striking.’

“It appears that this grass is like some other plants which produce both male and female indiscriminately from seed, like the poplars and willows; and the female is the most

beautiful, as it retains its flowers longer in perfection; but if it comes in contact with the male, the former soon loses its beauty; her flowers, which, when in perfection, resemble little flakes of mother-of-pearl, fringed with white silk, close up and lose their transparency, and thus the duration of their beauty is much curtailed. In this the Pampas grass conforms to the universal rule observed through the vegetable kingdom, that as soon as a flower is set, its lustre becomes dim, and its gay leaves wither and fall off, or fold over the seed vessel, as shrivelled dingy scales. It is doubtless because the setting is so difficult among Epiphytal orchids that these plants retain their brilliancy so much longer than others. And it certainly is a powerful reason why perfectly double flowers are so universally preferred in gardens; being incapable of setting, [not in all cases, Ed.,] their beauty is far more durable than that of their single originals. So that when pseudo botanists sneer at gardeners for their love of double flowers, they only display their own ignorance of the circumstances which render plants best adapted to purposes of decoration."

PHYGE'LIIUS CAPE'NSIS.—This new plant, which we described under this head some time ago, has also proved quite hardy in England. With us it will undoubtedly require the protection of a frame or greenhouse; but it will probably bloom as freely as any of our herbaceous plants under the same treatment. It is stated that a plant which lived out last winter, started with vigor about the end of May, and has been a beautiful bush, about two and a half feet high, all the summer, and still (October 20) remains in flower, after ripening seed. It will therefore take rank henceforth among first class ornamental herbaceous plants. The flowers are similar to a pentstemon, bright scarlet, and in spikes a foot or more long.

383. **RHODODE'NDRON CALOPHYLLUM Nutt. HANDSOME-LEAVED RHODODENDRON. (Ericææ.)** Bootan.

A hardy shrub; growing three feet high; with white flowers; appearing in spring; increased by layers; cultivated in sandy peat soil. Bot. Mag., 1857, pl. 5002.

It was a matter of surprise and of interest to cultivators

to learn that Dr. Hooker discovered no less than forty-three new species of rhododendrons in his exploration of the Sikkim-Himalaya mountains, thirty of which were new; and it has been no less a matter of surprise that Mr. Booth should find sixteen additional kinds in the adjacent mountains of Bootan; making in all forty-six new species. There is great reason to believe, writes Dr. Hooker, that if the Malayan Archipelago were explored, an equally extensive harvest would be the result.

The present species is a very beautiful plant, nearly allied to *R. Maddeni*, but yet distinct in its habit and growth. The foliage is very handsome, and the flowers are white, in tolerably large heads. It makes a compact bush, and is a fine addition to this now extensive family. It was raised from seeds by Mr. Nuttall, at Rainhill, and flowered for the first time in May last. (*Bot. Mag.*, Sept.)

384. *VIO`LA PEDUNCULATA* *Torrey and Gray*. LONG-STALKED GOLDEN VIOLET. (*Violarieæ.*) California.

A half hardy plant; growing six inches high; with yellow flowers; appearing in spring; increased by seeds and division of the roots; grown in leaf mould and loam. *Bot. Mag.*, 1857, pl. 5 64.

“The handsomest of the genus,” though lacking the fragrance of the European species. It is one of the acquisitions from California, where it was discovered by Douglas, just before he met with his accidental death in the Sandwich Islands, but, unfortunately, not sent home. Mr. Nuttall also saw it at Monterey. It has since been found by Mr. Lobb, and seeds sent to England, from which fine plants have been raised by Messrs. Veitch & Son of the Exeter Nurseries, who exhibited them at one of the horticultural shows at Chiswick, where they attracted great attention. It is a perennial plant, requiring the protection of the greenhouse or frame, and flowers abundantly in May. The leaves are large, deep green, and the flowers are of a rich golden yellow, with the back side of the two upper petals streaked with maroon. It is a beautiful species, and will prove a fine acquisition. (*Bot. Mag.*, Sept.)

385. *AZALEA OCCIDENTALIS* Torrey and Gray. CALIFORNIAN AZALEA. (Ericææ.) California.

A hardy shrub; growing three feet high; with white and yellow flowers; appearing in spring; increased by layers; grown in sandy peat soil. Bot. Mag., 1857, pl. 3005.

Another new American azalea, from the Pacific coast, where it was first seen during Capt. Beechey's voyage, and dried specimens obtained, and subsequently described as the *A. calendulæca* of Eastern America. Douglas and Hartweg also sent home dried specimens from California, and Mr. Burke from Oregon. Specimens were more recently gathered by Lieut. A. W. Whipple's exploration party for a railway route to the Pacific, and now Mr. Lobb has obtained seeds, from which plants have been raised by Messrs. Veitch. It proves to be quite different in color from *A. calendulæca*, though specifically scarcely distinct,—probably only a variety. Messrs. Torrey and Gray called it *A. occidentalis*, and Dr. Hooker adopts the name. It is the only species yet found west of the Rocky Mountains. In general habit, blooming, &c., it compares with the well known *calendulæca*; but the flowers, instead of being yellow, are white, streaked with red on the tube and outer segments of the upper lobe of the limb of the corolla within, yellow on the disc. It will probably prove hardy. (*Bot. Mag.*, Sept.)

386. *AGAVE DENSIFLORA* Hook. CLOSE-FLOWERED AGAVE. (Amaryllidææ.) Mexico.

A greenhouse plant; growing six feet high; with yellowish flowers; appearing in summer; increased by division; cultivated in light rich soil. Bot. Mag., 1857, pl. 5033.

A new and apparently undescribed species, received at Kew Gardens from Mexico, where it flowered last spring. Unable to refer it to any of the thirty-eight species described by Kunth, the most recent writer on this genus, Dr. Hooker has called it *A. densiflora*. The plant has lanceolate leaves, the outer spreading and the centre erect, and throws up a scape or flower stem six or more feet long, terminated with a very dense spike of flowers, which are yellowish, with rich purple stamens and pistils. When most of them are expanded it forms a showy and handsome object. (*Bot. Mag.*, Sept.)

387. GREVILLEA ALPESTRIS *Meisn.* MOUNTAIN GREVILLEA.
(Proteaceæ.) South Australia.

A greenhouse plant; growing four feet high; with red flowers; appearing in spring; increased by cuttings; grown in leaf mould, loam, and sand. *Bot. Mag.*, 1857, pl. 507.

A very handsome shrub, of erect and regular growth, with small delicate foliage, and terminal clusters of red flowers, which literally cover the plant. In its native country it forms a bush many feet high, and blooms throughout the whole year; but under cultivation it blooms copiously on plants of small size. Its neat habit, bright colored and curiously formed flowers, and abundant blooming, render it a fine acquisition to our greenhouse plants. It was raised by Messrs. Rollinson. (*Bot. Mag.*, Sept.)

388. RHODODENDRON WINDSORII *Nutt.* MR. WINDSOR'S
RHODODENDRON. (Ericææ.) Bootan.

A half hardy (or hardy) shrub; growing four feet high; with deep crimson flowers; appearing in June; increased by layers; cultivated in sandy peat and loam. *Bot. Mag.*, 1857, pl. 500.

One of the Bootan species, found at an elevation of 7-9000 feet above the sea, in exposed and arid situations, among pines, &c, raised from seeds sent to Mr. Nuttall, at his residence, Nutgrove, Rainhill, in Lancashire. It proves to be quite hardy, having stood out the last winter, even small seedlings. It is a very showy and bright colored species, and, from its hardiness, will prove valuable for hybridizing our native sorts to produce deeper colored varieties. The leaves are obovate lanceolate, four or five inches long, strongly reticulated or nerved, white and silvery beneath. Heads of blossoms compact, many-flowered, and darker in color than the old arboreum, to which it is allied. (*Bot. Mag.*, Oct.)

389. UROSKI'NNERA SPECTABILIS *Liud.* SHOWY UROSKIN-
NERA. (Scrophularinææ.) Guatemala.

A stove or greenhouse plant; growing two feet high; with rosy blue flowers; appearing in summer; increased by cuttings; grown in light rich soil. *Bot. Mag.*, 1857, pl. 5069.

A showy and beautiful plant, of an erect habit, something in the way of a gesnera, with leaves two to four inches long, and large terminal heads of funnel-shaped violet blos-

soms. It may perhaps prove a valuable summer blooming plant, like the salvias. It was sent to the London Horticultural Society by Ure Skinner, Esq., an indefatigable collector and the most generous of merchants, and named, by Dr. Lindley, in compliment to him, by blending his two names into one "which shall unmistakably record the labors of one who ought never to be confounded with any other Skinner whatever." (*Bot. Mag.*, Oct.)

OUR ORNAMENTAL TREES.

BY THE EDITOR.

16. THE BROAD-LEAVED EUONYMUS. (*EUONYMUS LATIFOLIUS*.)

THE *Euonymus*, or spindle tree, or burning bush, as our American species is appropriately called, is a well known ornamental shrub or small tree, quite common in most gardens, and everywhere admired for the abundance of its red berries, which cover every branch and twig, and render them conspicuous long after the early frosts have divested the trees of their foliage, even until winter clothes the earth with her mantle of snow, when their scarlet hue glows with increased brilliancy from the great contrast. Among the berry-bearing shrubs, the *Euonymus* will always maintain a prominent place; for though its fruit may not glisten with the lustre of the *Prinòs*, the greater abundance in which they are produced, not to mention the other fine qualities of the tree, must give it the preference in every ornamental plantation.

The number of species belonging to this tribe is twelve, six or eight of which are quite hardy; four of them are natives of the United States. There are also four varieties of the common English, differing in the color of their berries or leaves. All are more or less attractive, though the *E. latifolius*, the one we are about to describe, being, in our opinion, the most beautiful. Next to this comes our *E.*

americanus, which surpasses the European in the profuseness as well as deeper color of its berries.

The *E. latifolius*, (fig. 24,) says London, "forms much the handsomest species of the genus, from its broad shining leaves, and its large, red, pendulous fruits, with orange-colored seeds, which, when the capsules open, are suspended from their cells somewhat in the manner that magnolias hang from their strobiles. Even the wood of this species, during winter, is much handsomer than that of any other,



24 THE BROAD-LEAVED EUONYMUS.

the branches being regularly divaricate, with a clean bark of a reddish green, and with long-pointed dark brown buds,—by which alone this species may be distinguished from the others."

It is a native of Europe, and particularly of the South of Germany and some parts of France and Switzerland, where it grows to the height of ten or twelve feet, producing its greenish white flowers in June and July. It was first introduced to British collections in 1730, and has so recently been added to our own gardens that we do not know of any

plants larger than our own, which are yet young, and but eight or ten feet high.

The tree grows upright, with stout reddish shoots, and long pointed buds, which are entirely unlike the other species. The leaves are broad and shining, and very ornamental. The berries are produced in the manner described above, and, from the size of the capsules as well as the berries, depending as they do from a silken cord, they are at once the most showy as well as brilliant objects of the autumnal season, enlivening every shrubbery with their rich coral and golden hues.

“Unfortunately for this species,” again says Loudon, “it is generally treated as a shrub, and crowded among other shrubs or trees, so that it is never allowed a chance of attaining either its full size or its proper shape. Notwithstanding this, at Purser’s Cross, and in the arboretum at Kew, it is fifteen feet high, (in 1837.) If treated as a tree, planted by itself on the lawn, it would form one of the very handsomest small trees that we possess during summer, from its fine broad shining leaves, and one of great singularity and beauty in autumn, when covered with its brilliant scarlet fruit.” To such a faithful description we have little to add, except the mode of propagation and growth.

Like all the *Euonymuses*, the *latifolius* may be easily propagated, either by seeds, or by cuttings of the young or ripened wood. The seeds should be planted in the autumn, in beds, in light rich soil, where they may stand until the second or third year, when they may be removed to nursery rows. If raised from cuttings, they may be treated the same as cuttings of similar shrubs, selecting a light rich soil, and inserting to a good depth. In a year or two they may be removed, and managed the same as seedlings. At their final planting a deep rich loam suits them best.

All the species are desirable, especially in extensive shrubberies or pleasure grounds, where their neat form and scarlet fruits are conspicuous objects; but for lawns, or prominent points near the house, the *E. latifolius* must claim preëminence over all the others, and a rank second to no tree of its size.

REVIEWS.

THE FRUITS AND FRUIT TREES OF AMERICA; or, their Culture, Propagation, and Management in the Garden and Orchard; or, Fruit Trees generally, &c. By A. J. DOWNING. Revised and corrected by CHARLES DOWNING. New York: 1857.

The revised edition of this work, which has been some time in preparation by Mr. C. Downing, a well known and experienced pomologist, undoubtedly quite as well, if not better, acquainted with fruits than his brother, the author, has just been published, and, from the numerous additions which he has made, more particularly to the apples and pears, has rendered it a formidable volume, at once showing the progress which pomology has made during the last twenty-five, or even ten, years. Then Mr. Kenrick's unpretending volume, not more than one third the size, contained nearly every fruit introduced at that period. Now, with the briefest descriptions, in many instances, Mr. Downing, with the addition of more than one hundred and fifty pages, has hardly been able to do justice to the work and confine it to one volume.

In a work of this kind, in the present condition of our pomological knowledge, it is not to be expected that we should find it without some errors. In the multiplicity of new fruits which are yearly—we might almost say daily—coming to our knowledge, it is very difficult to obtain an accurate account of all of them; certainly far more difficult to test them under the eye of the author,—the only way in which a correct work can be made. Our American cultivators cannot wait for this; and many varieties must be omitted altogether, or such information accepted as can be obtained. It is with this view that we must judge of the value of the labors of Mr. Downing in his revision of the volume.

“In preparing this revised edition of the ‘Fruits and Fruit Trees of America,’ no alteration has been made in the general principles of cultivation and propagation, and but little in the description of those varieties that are retained; but some, after repeated trial, having proved unworthy of general cultivation, have been reduced and put in a class of inferior sorts; some of which, however, have advocates, and succeed in particular soils and localities.

“Many new ones of ‘very good’ and ‘best’ qualities have been added; some well proved, and others partially so, requiring more time to judge their true merits; some giving promise of excellence; others may prove, when fully tested, but of inferior value.”

Such is a portion of the prefatory remarks to this revised edition, showing the principal alterations in, and amendments to, the volume. To this, however, should be added a new arrangement of the varieties of fruits. The editor states that he has thought best to reject the classes according to the season, and adopt the principle of the system recommended by the late A. J. Downing; but instead of using the terms “best,” “very good,” and “good,” he has designated the qualities as first, second, and third, answering to the above.”

Now it is this alteration which we think has rendered the volume much less valuable than it would otherwise have been. It is altogether an arbitrary classification, founded upon the mere taste of the author; but, unless he has tested every variety under his own eye, and from one locality, the change of soil, situation, &c., may make quite a difference in the quality of the specimens. We certainly think this must be the case from the classification of the pears particularly.

We have not time, in this closing number of the volume, to go through all the fruits, but will briefly notice the pears, and point out what we think are errors of judgment on the part of the editor.

For instance, the first list of pears “contains only those which are well known to be of unexceptionable quality,

and have been found to thrive in almost any situation suited to the cultivation of the pear." Here we have thirty varieties,—only thirty: after the labor of a century, and the introduction of a thousand sorts, only thirty unexceptionable pears! And what are these thirty "which thrive in almost any situation, and are well known to be unexceptionable"? Why, among them are the following: Beurré gris d'hiver, Beurré Diel, Bloodgood, Church, Doyenné d'hiver Nouveau, White Doyenné, Kirtland, Ott, and Madeleine. The Beurré gris d'hiver and Doyenné d'hiver Nouveau are not known to fifty cultivators; the Beurré Diel cracks badly in all light soils; the Church is entirely new, as well as the Kirtland and Ott, and the Madeleine is not by any means a very certain fruit.

Now let us look at the second class, which comprises those "of good quality, or that are new and untested." Here we have the Abbott, Adams, Andrews, Gansell's Bergamot, Beurré Langelier, Golden Beurré of Bilbao, Beurré d'Aremberg, Beurré Superfin, Cushing, Duchesse, Fulton, Glout Moreceau, Heathcot, Howell, Louise Bonne de Jersey, Marie Louise, Passe Colmar, Swan's Orange, Oswego Beurré, Paradise d'Automne, St. Ghislain, and Washington, not to mention many others. Are not the Louise Bonne de Jersey, Glout Moreceau, Marie Louise, Fulton, &c., quite equal in quality to the Beurré gris d'hiver, Doyenné d'hiver Nouveau, and the others? and are they not quite as well known and far better tested? If twenty-five years has not done this we fear they never will be known.

Evidently such an arrangement altogether misleads the young cultivator, and is so defective that it affords no guide to a selection of the best fruits. It would have been far better to retain the old classification, with the author's opinion of the quality of each variety, and let the novice decide for himself.

Of the adoption of several names, and the correctness of many of the synonymes, though in the main very satisfactory, there are some grave errors. Doyenné d'hiver Nouveau should be Doyenné d'Alençon; it is so in the *Album de Po-*

mologie. Beurré Drapiez is well known as a synonyme of Urbaniste. Beurré Philippe Delfosse is Fondante de Noel. Beurre Beaumont is a distinct and fine pear, described as Beymont. Boston is stated to have been *raised* by C. M. Hovey; it was only *introduced* to notice by him. On what authority Excelentissima is called Duc de Brabant is not stated. Omar Pacha is St. Menin. Beurré Spence is well known as the Flemish Beauty. Pound should be Uvedale's St. Germain. These few we notice among the pears.

In a work of so much merit we regret to see it needlessly marred by either carelessness of the proof-reader or the inattention of the editor. Sheldon should be *Sheldon*; Beurre Clairgean should be *B. Clairgeau*; Conseiller Rauwez should be *Conseiller Rauwez*, &c., &c. Hull is described in both the second and third classes. Van Marum and Beurre Van Marum are described as different fruits with different synonymes. Benoist and Beurre Benoist are described as two fruits. Dana's No. 16 and 19 are merely the private numbers of the raiser, and as soon as named will not be recognized. These errors, with many others, will undoubtedly be rectified in another edition. It is not to be wondered that, in the attempt to embody every known variety, such mistakes should be made. Notwithstanding all this, the work of revision, laborious as we well know, has been most faithfully done; and we are well aware that the editor is more apt to underrate than overrate,—a fault which, in describing new fruits, almost becomes a virtue. The volume will be a welcome addition to every cultivator's library.

General Notices.

GREAT EXHIBITION OF THE LONDON HORTICULTURAL SOCIETY, OCT. 24.—The report of this exhibition occupies several columns of the *Gardeners' Chronicle*, being a detail of the principal varieties. We have only room for the following, which is nearly all that will be interesting to our cultivators:—

Of French pears, M. Liron d'Airoles, of Nantes, sent a collection in which were Belle Angevine, small compared with what have just been quoted: Bezi de Heri, Poire de Curé, Beurré Clairgeau, of a rich reddish brown, without the pink color which this variety acquires in England; fine specimens of Beurré Diel, covered with brown russetty spots; Alexandrine d'Ouillard, a pale, yellow, good-looking pear; Bergamotte Crassane d'Autonne, Green Crassane, Winter Bon Chrétien, Bergamotte de la Pentecôte, a large green variety, thickly spotted with brown; Beurré de Luçon, a handsome fruit: and Duchesse de Angoulême. The last were large and fine, and like the Beurré Diel and others, richly spotted and flaked with cinnamon. Their flavor is reported to have been more rich than is ever the case with our own growth. In short, the whole collection had a sun-burnt aspect, very different from our English fruit.

Grapes were particularly good, more especially Muscats, the best of which came from Mr. Drewitt, gardener to Mrs. Cubitt, The Denbies, near Dorking. The next in point of merit came from Mr. Hill, gardener to R. Sneyd, Esq., Keele Hall, Staffordshire; three bunches of the latter weighed together 8 pounds. Mr. Little, gardener to A. Darby, Esq., Stoke Court, Slough, also sent fine bunches of this variety. Mr. Snow, gardener to Earl de Grey, had well colored cut smaller bunches of Muscat; and we noticed good bunches of this kind from Mr. Fleming, gardener to the Duke of Sutherland at Trentham, who stated that they were from vines which had been lifted in September last year, concerning which see another column. Messrs. Sparrow, Wortley, Frost, and Thomas also showed in this class. Beautiful bunches of White Tokay were furnished by Mr. Fleming, and the same variety also came from Mr. Hill. Mr. Drewitt had a large somewhat loose bunch of the Welbeck Trebbiana. Mr. Tillyard, gardener to Viscount Eversley, at Heckfield, sent a large bunch in the way of the Syrian of some Grizzly grape, which is said to have been raised by Mr. Mitchell, of Brighton. We also noticed specimens from Mr. Spary, of a large green grape called Marchioness of Hastings, a kind reported to have also been obtained from the same raiser. Of Black Hamburg Mr. Hill contributed splendid bunches as regards size both of bunch and berry; but hardly so well colored as we have seen them from that excellent grower. Mr. Tillyard showed fine specimens of Mill Hill, but they were disqualified on account of their having been wrongly entered. Mr. Snow, gardener to Earl de Gray, likewise showed Black Hamburg, as did also Messrs. Allport, Eckford, Bousie, and Thomas. Of Black Prince Mr. Hill sent three capital bunches, black as sloes, and covered with a beautiful bloom. Mr. Bousie, gardener to the Right Hon. H. Labouchere, also sent good bunches of this variety. Fine specimens of West's St. Peter's were exhibited by Mr. Allport, gardener to H. Ackroyd, Esq., Doddington, near Nantwich, and good bunches of Black Hamburg and Black Prince came from Messrs. Lane, of Berkhamstead, from a house reported to have been open on all sides but one. In the Market Gardeners' class of boxes of 15 pounds, Mr. Davis of Oak Hill, carried off the first prize with fine examples of Black Hamburg and Muscat. Mr. Spary, of Brighton, had a capital basket of

Black Hamburgh, and the same kind of grape was also exhibited by Mr. Bell, of Norwich.

In the class of pears of home growth, 12 sorts, six of each, the first prize was nobly won by Mr. Ingram, Royal Gardens, Frogmore, with fruit which for size and beauty were truly matchless. These were, as they well deserved to be, the admiration of everybody. They consisted of Beurré Diel, large, and finely colored; Van Mons Léon le Clerc, an immense pear; Glout Morceau and Marie Louise, two Flemish varieties of well known excellence: the latter is in use at Frogmore for three months; it is found to hang well on the tree, therefore by gathering at different periods the season of this fine pear is greatly extended. In addition to these there were Seckel, of large size and fine color, from a north wall: this is the very best of the American pears; Knight's Monarch, a truly valuable sort, ripening gradually through the winter months, and affording a supply for the table from November to March; Beurré de Capiaumont, large, and beautifully colored, a very hardy kind for growing as standards, (its season is very short;) together with Beurré Rance, fine specimens from a north wall; Vicar of Winkfield, a large second-rate pear; Beurré Bosc, Hacon's Incomparable, and Brougham; the latter, one of the late Mr. Knight's seedlings, is a very hardy variety. From Viscount Eversley's garden, at Heckfield, Mr. Tillyard sent good specimens of Marie Louise, Winter Nelis, Beurré de Capiaumont, Forelle or Trout pear, Ne Plus Meuris, Hacon's Incomparable, Beurré Diel, Louise d'Orleans, Easter Beurré, Calabasse, very large and fine fruit of Duchesse d'Angoulême, and Beurré Rance. From Mr. Harrison, of Oatlands Palace, Weybridge, came the following:—Marie Louise, Duchesse d'Angoulême, Beurré Diel, Beurré Rance, Easter Beurré, Hacon's Incomparable, Winter Nelis, Passe Colmar, Monsieur le Curé, Ne Plus Meuris, Chaumontel, Glout Morceau. From the Earl of Stair's, Oxenford Castle, near Edinburgh, came very fine fruit of Marie Louise, Flemish Beauty, Althorp Crassane, Gandesheim, Winter Nelis, Napoleon, Beurré Diel, Gansel's Bergamot, Crassane, Louise Bonne of Jersey, Easter Beurré, and Duchesse d'Angoulême.

In the class of pears of home growth, six sorts, six of each, the first prize was awarded to Mr. Sorley, gardener to E. Zwilchenbart, Esq., Roselands, near Liverpool, whose varieties were Winter Nelis, Marie Louise, Beurre Diel, Easter Beurré, Brown Beurré, and Glout Morceau. The next six in point of merit came from Mr. Wood, gardener to R. Scott Murray, Esq., and consisted of very fine specimens of Vicar of Winkfield, Van Mons Léon le Clerc, Beurré Diel, Ne Plus Meuris, Duchesse d'Angoulême, and Easter Beurré. The third best lot in this class came from Mr Fowle, gardener to G. W. Cooke, Esq., Beesthorpe, near Newark, whose sorts were Easter Beurré, Marie Louise, Passe Colmar, Buchanan's Spring Beurré, Althorp Crassane, and Glout Morceau.

In the class of single dishes Mr. Tillyard had the first prize for Seckel, beautifully grown and highly colored; and in every respect nearly as good as the fine specimens of the same variety in Mr. Ingram's collection. The next dish in point of merit was one of Marie Louise, from Mr. Fowle,

gardener to G. Cooke, Esq.; and Mr. Snow had a very fine dish of the Doyenné Gris. Other single dishes were Duchesse d'Angoulême, from Mr. Brown, Rockingham Castle; Beurré Diel, from Mr. Daniels, of Ruthin Castle; Chaumontel from Mr. Mortimer; Hacon's Incomparable from Mr. Evans, Nuneaton, Warwickshire; Marie Louise, small and green, from Mr. Chesher; good Beurré Bosc from Mr. Ingram, gardener to J. J. Blandy, Esq.; Bergaunotte d'Esperen, from Mr. Roberts; Marie Louise, from Mr. Saul, of Stourton, and others; Beurré Diel, from Mr. Elliott; handsome specimens of Beurré Clairgeau from Mr. Cox, Redleaf; and a large yellow pear called Hitton's Seedling from Mr. Hitton.

In the class of pears of foreign growth the first prize was awarded to Mr. Lewis Solomon for very fine fruit of the following, viz. Duchesse d'Angoulême, Easter Beurré, Glout Morceau, Crassane, Beurré Diel, Winter Nelis, Winter Bon Chrétien, Bon Chrétien d'Espagne, Belle Angevine, Marie Louise, Mons le Curé, Uvedale's St. Germain, Brown Beurré, Colmar, and Gilogil. Messrs. Hovey & Co., Boston, showed a collection of American pears in this class; they had a warm brown look with them, but in point of growth were greatly inferior to English fruit. We understand, however, that this has been a bad season with the Americans for pears, and those exhibited were likewise damaged very much from travelling, all which in some measure served to detract from what merit they would otherwise have possessed. They consisted of Beurré d'Anjou, Beurré Gris d'Iliver, Beurré Bosc, Beurré Superfin, Beurré Diel, Duchesse d'Angoulême, Paradis d'Automne, Swan's Orange, Beurré Clairgeau, Passe Colmar, Van Mons Leon le Clerc, Glout Morceau, Nouveau Poiteau, Marie Louise, Edwards' Elizabeth, Sheldon, Winter Nelis, Colmar d'Arenberg, Louise Bonne of Jersey, and others.

Of American apples Messrs. Hovey & Co., of Boston, sent Rhode Island Greening, a green looking fruit, which, notwithstanding its unfavorable appearance, proved, when cut, crisp, juicy, and excellent; similar good properties also belonged to the Baldwin, a medium sized variety, with a warm red color. These were by far the best apples in the American collection.

Societies.

MASSACHUSETTS STATE AGRICULTURAL.

The first exhibition of the Massachusetts State Board of Agriculture was held in Boston, on the grounds occupied by the U. S. Agricultural Society in 1855, on Tuesday, Wednesday, Thursday, and Friday, Oct. 21, 22, 23, and 24. The weather was cool and unpleasant during the entire week, and the attendance of visitors was not so large as expected.

The show was very fine in every department, especially of fruits, considering the lateness of the season. Apples, pears, grapes, and peaches,

were exhibited by various contributors, and of excellent quality. The President, the Hon. M. P. Wilder, had one hundred varieties of pears; Hovey & Co., one hundred and fifty varieties; J. Gordon, fifty varieties; and MESSRS. W. Bacon, H. Vandine, R. W. Ames, A. Low, and others, handsome collections. Mr. T. Clapp exhibited some splendid apples and peaches; and Mr. E. W. Bull, very fine Concord grapes. Isabella grapes, of fine quality, were also shown by C. E. Grant, G. B. Cutter, and other contributors. We annex the award of the principal prizes:—

PEARS.—For the largest and best collection, to Hovey & Co., \$20.

For the next best, to J. Gordon, \$15.

For the third best, to H. Vandine, \$10.

For the best twelve varieties, to A. Low, \$15.

For the next best, to W. Bacon, \$10.

For the next best, to R. W. Ames, \$5.

For the best dish of pears, to T. Clapp, for the Seckel, \$5.

For the second best, to W. Bacon, \$3.

For the third best, to J. Haley, for Duchess, \$2.

PEACHES.—For the best collection, to T. Clapp, \$15.

For the second best, to A. Clement, \$10.

APPLES.—For the best collection, to T. Clapp, \$20.

To J. Lake, for a collection, a gratuity of \$10.

To A. Clement, for the same, a gratuity of \$10.

For the best twelve varieties, to R. Stratton, \$15.

For the second best, to D. C. Brewer, \$10.

For the third best, to W. W. Wheildon, \$5.

For the best dish, to J. Fenno, for Hubbardston Nonsuch, \$5.

For the second best, to J. B. Moore, \$3.

For the third best, to Hovey & Co., for Baldwin, \$2.

GRAPES (native.)—For the best seedling, to E. W. Bull, for the Concord, \$20.

For the best display, to C. E. Grant, \$20.

For the next best, to G. B. Cutter, \$15.

For the third best, to K. Bailey, \$10.

GRAPES (foreign)—For the best display, to Dr. N. Durfee, \$20.

PLUMS.—Gratuities of \$2 each to Ed. Clark, Northampton; H. Vandine, and Sam'l Chandler, Lexington.

THE AMERICAN INSTITUTE.

The last fair of the American Institute closed on the 30th of October. The display of fruits and flowers was large and excellent, and numerous prizes were awarded. We have only room for a few of the principal awards for fruits.

FIRST SERIES OF PRIZES, from the 15th to the 29th of September:—

COLLECTION OF FRUITS.—For the best named collection, to Ellwanger & Barry, Rochester, silver cup, \$20.

APPLES.—For the best named collection, to J. W. Bailey, Plattsburg, N. Y., silver cup, \$15.

PEARS.—For the best fifty named kinds, to J. Buell, Newark, N. J., silver cup, \$15.

GRAPES.—For the best four named varieties of foreign grapes, to Mrs. F. B. Durfee, Fall River, silver cup, \$10.

SECOND SERIES, from September 30th to October 14th:—

APPLES.—For the best named collection, to J. W. Bailey, Plattsburg, N. Y., silver cup, \$15.

PEARS.—For the best fifty named varieties of pears, to Hovey & Co., Boston, silver cup, \$15.

GRAPES.—For the best four named varieties of foreign grapes, to Mrs. F. B. Durfee, Fall River, silver cup, \$10.

THIRD SERIES, from the 14th to the 29th of October:—

APPLES.—For the best named collection, to J. W. Bailey, Plattsburgh, N. Y., silver cup, \$15.

PEARS.—For the best fifty named varieties, to A. Saul & Co., Newburgh, N. Y., silver cup, \$15.

NEW YORK HORTICULTURAL.

The annual exhibition of this Society was held in New York, Tuesday evening, September 29th, at Niblo's Saloon; and the display is said to have been, beyond all question, the finest ever made in the city.

Of plants in pots there was a fine show. They were from L. Menand of Albany, T. Richardson of West Farms, and Isaac Buchanan of New York. A superb specimen of *Arum integrifolium*, from Mr. Richardson, a rare kind, attracted much attention. Cut flowers were contributed in abundance. The floral designs were very fine.

Of fruits the display was superb. There were over 500 varieties of pears, of which Messrs. Hovey & Co. of Boston supplied 120 distinct varieties, which were not entered in time for competition, as the judges had awarded the first prize to A. Saul & Co. of Newburgh, before Messrs. Hovey's fruit arrived. Their Bartletts, Flemish Beauties, Paradise d'Autonne, Duchesse d'Angouleme, Louise Bonne de Jersey, and other fine specimens, however, were enough to make the mouth of an epicure water. The exhibition of grapes, vegetables, &c., was also very good.

The principal awards were as follows:—

FRUIT.

GRAPES.—For the best six named varieties of foreign grapes, to Mrs. F. B. Durfee of Fall River, silver cup, \$10.

PEARS.—For the best collection of named varieties, to A. Saul & Co., Newburgh, silver cup, \$10.

For the second best, to Win. S. Carpenter, Rye, \$5.

A gratuity of a silver cup, value \$10, to Messrs. Hovey & Co., Boston.

PEACHES.—For the best dish of one variety, to Wm. Huggin, \$3.

NECTARINES.—For the best, to H. Hudson, silver medal, \$5.

PLANTS AND FLOWERS.

PLANTS IN POTS.—For the best twelve miscellaneous plants, to M. Collopy, Brooklyn, silver cup, \$10.

For the second best, to L. Menand, \$5.

ROSES.—For the best cut flowers, to C. More, New York, \$5.

DAHLIAS.—For the best, not less than fifty blooms, to J. S. Burgess & Sons, West New York, silver cup, \$10.

Numerous other awards were made in the several classes, and also liberal prizes for vegetables.

NEW YORK STATE AGRICULTURAL.

The annual exhibition of this flourishing Society was held at Buffalo, on the 6th, 7th, 8th, and 9th of October last. According to Col. Johnson's able report "no previous fair has ever equalled this in the number of people entering the gates before noon upon any day," and the receipts were very much larger than on any year since the society was organized, amounting to \$17,000. With one exception, we have been present at all the fairs of this society except this for several years; but unavoidable causes prevented us from attending this year, much to our regret. An address was delivered by the Hon. Edward Everett, which is said, by those who heard it, to have been one of his happiest efforts, and one of the most appropriate and eloquent ever delivered by him on any occasion.

The show of fruit is stated to have been excellent. A propitious year for apples rendered the exhibition of this fruit highly attractive. We have only space to give the principal awards of prizes:—

FLOWERS.—PROFESSIONAL LIST.

For the best display, A. Frost & Co., Rochester, silver cup, \$10.

Best Dahlias, to Mrs. K. Webb, Buffalo, \$6.

Best Roses, to A. Frost & Co., \$8.

Best Phloxes, to Ellwanger & Barry, \$5.

Best Asters, to W. Newcomb, \$3.

FRUIT.—PROFESSIONAL LIST.

APPLES.—For the largest and best collection, to Ellwanger & Barry, silver cup, \$15.

For the second best, to Thorp, Smith & Hanchett, \$10.

For the best twenty varieties, to Thorp, Smith & Hanchett, \$10.

PEARS.—For the greatest and best collection, to Ellwanger & Barry, silver cup, \$15.

For the second best, to Thorp, Smith & Hanchett, silver cup, \$10.

For the best twenty varieties, to A. Frost & Co., silver plate, \$10.

For the second best, to Ellwanger & Barry, \$5.

PEACHES.—For the greatest and best collection, to A. Pinney, Clarkson, \$5.

PLUMS.—For the greatest and best collection, to Ellwanger & Barry, \$5.

AMATEUR LIST.

APPLES.—For the greatest and best collection, to C. B. Burtis, silver cup, \$15.

For the second best, to R. H. Brown, \$10.

For the best twenty varieties, to B. Baker, E. Hamburg, silver plate, \$10.

PEARS.—For the greatest and best collection, to W. R. Coppock, Jr., Buffalo, silver cup, \$10.

For the second best, to Jno. Eaton, \$5.

For the best twelve varieties, to R. H. Richardson, Rochester, \$8.

For the second best, to F. A. Lord, Buffalo, \$5.

PLUMS.—For the greatest and best collection, to E. Dorr, Albany, \$3.

FOREIGN FRUIT.

APPLES.—For the greatest and best collection, to H. Beal & Co., Waterford, C. W., silver cup, \$15.

PEARS.—For the greatest and best collection, to Hovey & Co., Boston, silver cup, \$15.

MICHIGAN STATE HORTICULTURAL.

Agreeably to a notice issued for the purpose, a convention assembled at Jackson, in September, to form a State Society. A committee was appointed to submit a constitution and by-laws, which were adopted, and the following officers were elected for the year:—

President—H. G. Wells, Kalamazoo.

Secretary—R. F. Johnston, Detroit.

Treasurer—P. B. Loomis, Jackson.

Directors—H. Walker, Detroit; D. K. Underwood, Adrian; I. T. Blois, Jonesville; Lewis Cone, Troy; G. W. Nelson, Grand Rapids; and Wm. Bort. Niles.

CALIFORNIA STATE AGRICULTURAL.

The fourth annual fair of this young Society was held at Stockton, on the 29th, 30th, and 31st of September last. From the *California Farmer* we learn the display of fruits surpassed all expectations. The exhibition of flowers was also good. Considering the short period since fruit trees were first planted in California, the exhibition must have been one of exceeding interest. Numerous specimens of the Gloria Mundi apples weighed thirty to thirty-three ounces each, and Duchess pears one to two pounds each. We mention a few of the awards:—

FLOWERS.—For the best display of pot plants, \$25. The best collection of roses, (150 varieties,) \$10. The best collection of dahlias, \$10.

Best pair of vase bouquets, \$10. Best hand bouquets, \$10. And best collection of native ornamental trees, \$25 to J. O'Donnell.

FRUIT.—For the best and largest display, to A. Delmas, \$15.

For the second best, to A. P. Smith, Sacramento, \$10.

Joseph Aram, San José, exhibited 85 varieties of apples. I. Lewelling,

35 varieties do. M. Dalmas, 30 varieties of grapes. Capt. F. W. Macon-
dray, 12 varieties of grapes, greenhouse and out-door culture, very fine.
Pears, in limited variety, were exhibited by various contributors; also
quinces, nectarines, gooseberries, peaches, plums, &c.

Massachusetts Horticultural Society.

Oct. 3.—Exhibited. FLOWERS: Cut flowers, dahlias, &c., from Barnes and Washburn, Mrs. Richardson, J. Nugent, F. Winship, C. Copeland and E. S. Rand, Jr.

Owing to the severe frost of Monday, the 28th Sept., the exhibition of dahlias was nearly an entire failure. A few cultivators named above had a few plants in favorable situations which were not injured, but the large growers, from whom a fine display was expected, had scarcely a plant spared; in consequence of this only a few were exhibited, and these very poor specimens; but few of the prizes were therefore awarded, which were as follows:—

AWARD OF PREMIUMS FOR DAHLIAS.

VARIOUS COLORS.—For the best yellow, to Barnes and Washburn. For the best variegated, to Barnes & Washburn. For the best crimson, to J. Nugent. For the best dark, to C. Copeland. For the best edged or tipped, to J. Nugent. \$1 each.

TWENTY BLOOMS.—For the second best, to C. Copeland, \$5.

EIGHTEEN BLOOMS.—For the best, to C. Copeland, \$6.

SIX BLOOMS.—For the best, to J. Nugent, \$5.

For the second best, to C. Copeland, \$3.

GRATUITIES.—To C. Copeland for 12 dahlias, \$5.

To F. Winship for 24 do., \$3.

To Barnes & Washburn, for cut flowers, \$3.

To Mrs. Richardson and C. Copeland, for cut flowers, \$2 each.

FRUIT: From J. A. Steison, Late Crawford peaches and Orange quinces. From E. A. Brackett, Union Village and Delaware grapes. From E. Sherman, Duchess pears. From H. Vandine, 7 var. of plums and 2 of pears. From J. Monroe, Chelmsford pears. From F. Dana, fine specimens of his Seedling pear, No. 17 and No. 3; also Late Crawford and Seedling peaches. From J. P. Robinson, Isabella grapes. From J. Cass, Isabella grapes.

Oct. 10th.—Exhibited. FRUIT: From F. Dana, No. 17 Seedling pears, Diana grapes and Late Crawford and Late Seedling peaches. From G. B. Cutter, fine Isabella grapes. From R. M. Copeland, Isabella grapes. From C. E. Grant, Isabella and Catawba grapes, fine. From K. Bailey, Isabella grapes, fine. From J. Cass, Isabella grapes. From J. Breck & Son, Isabella and Concord grapes. From F. Marsh, Isabella grapes and 3 var. pears. From H. Vandine, Coe's Golden Drop and Green Gage plums and 8 var. pears. From Rev. W. H. Ryder, Late Crawford peaches. From Wm.

Page, 5 var. pears. From E. S. Rand, Jr. Black Hamburg grapes. From J. F. Allen, Paradise of Autumn and Seckel pears, fine, and Diana grapes. From T. Clapp, extra Seckel pears. From J. Gordon, Bonne des Zees pears.

Oct. 17.—Exhibited. FRUIT: From J. Munroe, Swan's Orange, Seckel, Striped Long Green and Calebasse pears. From N. Harding, Isabella and Sweet Water grapes. From H. Vandine, 4 kinds of pears. From C. Holbrook, strawberries. From C. E. Grant, Isabella and Catawba grapes, well ripened. From G. B. Cutter, handsome Isabella grapes. From K. Bailey, Isabella grapes, fine. From J. Cass, Isabella Grapes. From J. A. Easterbrooks, Isabella and Diana grapes. From R. M. Copeland, Isabella. From Dr. E. Wight, Delaware grapes, and from J. Murray, Isabellas. From F. Marsh, pears. From J. B. Loomis, extra Louise Bonne pears. From P. T. Homer, White Doyenné pears, fine. From J. F. Allen, extra Beurré Bose and Louise Bonne and Flemish Beauty pears. From F. Dana, Louise Bonne of Jersey pears. From J. Haley, fine Duchess, Urbaniste, Louise Bonne, Beurré d'Arenberg, and E. Beurré pears. From J. Eaton, fine Louise Bonne, Beurré Diel, Siculle and Beurré Langelier pears. From B. Luscomb, fine Beurré Clairgeau pears. From B. Corey, handsome Merriam pears. From J. Gordon, Buffum, Beurré Bose, and Marie Louise pears.

The Report of the Committee on Vegetables, at the annual exhibition, was sent to us by the chairman, but too late for insertion in our last. As we have already given a list of the premiums, we only copy the prefatory remarks:

MASS. HORT. SOCIETY'S EXHIBITION OF VEGETABLES FOR 1857.

The Society's display of vegetables this year formed one of the most pleasing features of the exhibition. The variety was great, and the excellence in each department was certainly equal, and in the opinion of many superior to that of former years. It would be unjust and even impossible to particularize, where every exhibitor vied with his neighbor in loading the tables with the finest varieties and the largest specimens.

Perhaps, if a vegetable were mentioned as the most richly represented in fullness of growth, beauty of appearance, and varieties most worthy of extended cultivation, it would be the squash. But the whole collection was excellent, and indicated that plenty had crowned the labors of the husbandman in these departments, so necessary to the comfort and sustenance of man. The exhibition must have shown to the most indifferent observer, that the successful cultivator of a new vegetable, and the improver of an old branch of agricultural industry, deserve a high position in the Temple of Fame, and merit the thanks and support of an intelligent community. Want of space prevents the mentioning of the numerous varieties, and the published list of premiums and gratuities indicate the successful producer.—D. T. CURTIS, *Chairman*.

Oct. 24th.—Exhibited. FRUIT: From E. W. Buswell, Flemish Beauty pears. From Messrs. Burr, Hingham pear (a seedling.) From Aaron Barrett, Beurré Clairgeau pears. From Francis Dana, pears in variety; also his

seedlings, Nos. 16 and 19. From E. A. Story, Chelmsford pears. From E. Wight, Delaware grapes. From Henry Plympton, Doyenné Blanc (St. Michael) pears, of the fairest and handsomest specimens. They were plucked from a tree which has been in bearing for sixty years, and has never had a *cracked* pear. Mr. P. (McLean street, Boston), has kindly offered to furnish scions for members who may wish to make use of them the coming season. Gen. Phinney, Illinois, contributed 17 varieties of apples—all were handsome specimens. From E. Correy, Merriam pears, extra fine. From John Sawyer, pears and apples. From E. W. Bull, Concord grapes. From Hovey & Co., Carter grapes.

Oct. 31st.—Exhibited. FRUIT: From K. Bailey, Isabella Grapes. From E. S. Rand, Syrian grapes and quinces. From J. Cass, Isabella grapes. From J. Washburn, Fall Harvey apples. From H. Vandine, Seckel, Flemish Beauty and Louise Bonne pears. From Messrs. Burr, White Doyenne pears. From J. F. Allen, Beurré Bosc pears, fine. From Dr. Pfeiffer, Hesse Cassel, Bremen, a collection of pears and apples, about one hundred varieties.

AWARD OF PREMIUMS FOR FRUITS.

GRAPES.—For the best specimens grown under glass, to William P. Perkins, \$8.

For the second best, to Lyman Kinsley, \$6.

For the third best, to C. S. Holbrook, \$4.

For the best specimens of native grapes, to George B. Cutter, \$6.

For the second best, to C. E. Grant, \$5.

For the third best, to Kendall Baily, \$4.

For the fourth best, to J. Cass, \$3.

For the fifth best, to R. M. Copeland, \$2.

MELONS.—For the best musk melon, to E. M. Richards, for Christiana, \$2.

NECTARINES.—For the best twelve specimens, to S. G. Perkins, \$3.

For the second best, to J. F. Allen, \$2.

PEACHES.—For the best twelve specimens, grown in open culture, to F. Dana, for Late Crawford, \$5.

For the second best, to W. H. Ryder, for Early Crawford, \$4.

For the third best, to C. E. Grant, for Cooledge, \$3.

For the fourth best, to J. A. Stetson, for Late Crawford, \$2.

PLUMS.—For the best specimens, not less than two boxes, to Henry Vandine, \$4.

For the second best, to J. B. Loomis, for Reine Claude de Bavay, \$3.

For the third best, to Thomas Hastings, for Diamond, \$2.

Nov. 14th.—Exhibited. FRUIT: From W. R. Austin, very fine Duchesse d'Angouleme pears. From M. & F. Burr, fine Dix pears. From J. F. Allen, 10 var. grapes. From F. Dana, No. 16 and Ladies' Favorite pears. From H. Vandine, Beurré Clairgeau, fine, and 11 other varieties of pears. From A. Barrett, Beurré Langelier pears.

Nov. 21st.—Exhibited. FRUIT: From J. F. Allen, 10 var. grapes. From J. Eustis, Baldwin apples. From F. Dana, Late Seedling pears. From H. Vandine, 5 varieties of pears.

Horticultural Operations

FOR DECEMBER.

FRUIT DEPARTMENT.

November, though accompanied by two or three hard frosts, was a favorable month for autumn work. The early part was very pleasant and warm, and the ground throughout, with the exception of a few days, was in fine order for transplanting. If the industrious gardener has not seized upon such an opportunity to accomplish what he had in hand, it is his own fault. If, however, from any cause, everything is not ready for the winter, it should be done as speedily as possible, as December usually admits of only a few favorable days for such work.

GRAPE VINES in the early houses will soon begin to color, and will need continued care. Fires should be kept up, so as to maintain an equal temperature, and as much air admitted as possible, as on this depends the flavor of the crop. Damp the house less than formerly and protect the border as the cold increases. Vines in the greenhouse may be pruned this month, and have a thorough cleansing from all insects, by means of washing with whale oil soap. Cover the border with three or four inches of manure. Cold houses, if attended to according to our directions last month, will need no further care till March.

STRAWBERRY BEDS should have a slight covering of manure, leaves, seaweed, or even evergreen boughs, when the other materials are not at hand.

FRUIT TREES may yet be transplanted safely as long as the weather is not frosty, and an inch or two of frozen ground will not obstruct operations, if the weather is not too cold and cutting to expose the roots. All newly planted trees as well as old plantations should be protected by a full barrow of manure around each tree. Continue to clean and wash all trees infested with the bark scale or louse.

INSECTS should be looked after, particularly the cankerworm grub, which will continue to run as long as the ground remains open.

SCIONS may be cut now and placed in the cellar in earth or moss, where they will keep till spring.

FLOWER DEPARTMENT.

With the closing up of out door operations the attention of the gardener should be directed to the houses, where they are under his care. December is usually the period when flowers are less plentiful than any other month, and pains should be taken to keep us as good a display as the means at hand will admit. As the chrysanthemums and other kinds go out of bloom, their places should be supplied with others from frames or the reserve house. Young stock should also be repotted and allowed more room, and every means used to keep up a healthy growth, and gay appearance, even if flowers are not abundant. Keep up a moderate temperature without exciting the plants into a premature growth, which is sure to give them a sickly appearance before spring, besides rendering them liable to injury from

any sudden fall of temperature or long continued cloudy weather. Syringe in fine weather, and admit air at all times when it can be done without danger from frost.

CHRYSANTHEMUMS will soon be out of bloom, when they should be cut down and the roots protected in frames or a cool cellar.

PELARGONIUMS will now be prominent objects of attention, where there is a good collection. Attend at once to the repotting, which should be done early in order to get the pots well filled with roots. Late potting excites the plants too much; tie out and stop all strong growing shoots, and keep them in the coolest part of the house near the glass.

AZALEAS will require but little water this month.

CAMELLIAS coming into bloom will need liberal waterings, and frequent syringing; wash the foliage of all that appear unclean.

CINERARIAS will need repotting this month; to have fine specimens a good stocky growth should be obtained early in the season.

CALCEOLARIAS will need a shift into larger pots.

VIOLETS in frames, now brought into the house, will give an abundance of flowers.

VERBENAS for winter flowering, should be kept near the glass, and be carefully watered.

ACHIMENES for early blooming may be potted the last of the month, and placed in the warmest part of the house.

GLOXINIAS require similar management.

MONTHLY CARNATIONS, now growing vigorously and showing flower, may be repotted.

HEATHS should be more liberally watered as they begin to bloom.

ORANGE TREES should be rather sparingly watered until they begin to make a new growth.

OXALISES done blooming may be placed away on a shelf beneath the stage.

CHINESE PRIMROSES, growing vigorously, should be repotted.

PETUNIAS, SALVIAS, and other young bedding stock should be kept on a shelf near glass, in order to obtain a stocky, hardy habit.

FLOWER GARDEN AND SHRUBBERY.

CARNATIONS AND PICOTEEES, in frames, should be protected by a slight covering of leaves or straw.

TULIPS, LILIES and other bulbs should be protected from frost by a covering of leaves, manure or tan.

NEAPOLITAN VIOLETS should be covered well from frost, and aired freely every fair day.

HERACEOUS PLANTS of all kinds require to have a little covering of manure.

HOLLYHOCKS should be protected with a frame, so as to keep off all damp, otherwise the plants will decay.

HYBRID PERPETUAL ROSES flower much better if the shoots are bent down to the ground and covered with manure.

